

# 2 A Formal Ontology for PWO? Husserl's 3<sup>rd</sup> Logical Investigation

## 2.1 Preliminary Remarks on Formal Ontology

Section 1.2 portrayed conceptual analysis as a method consisting of a priori reasoning. The problem with a priori reasoning is not that its concepts and 'top-down' conclusions would be arbitrary by themselves. At least they are no more arbitrary than the conclusions of a 'bottom-up' method that simply starts its investigation by collecting empirical data at random, without a predefined hypothesis and research focus, without guiding concepts, just by recording unfiltered perceptions on a 'white sheet of paper'. To put it simply, we can never find something in the world without knowing beforehand what we are looking for. Conceptual analysis in ontology faces a problem when it often painstakingly determines what it is looking for, but does not try to find it in the end, because this would necessitate the transcendence of the model and challenge its external consistency. It would shift the measure from the internal coherence of the model to its relatability to something outside of it: reality, or any other ontological subject matter. This, and not the analysis of concepts and a priori reasoning as such, makes conceptual analysis often appear as arbitrary and as an end in itself.

Therefore, in order to find an ontological theory that is able to determine the ontological status and nature of PWO, we should not stop halfway with either method, but arrive at the contact point of 'top-down' and 'bottom-up' by following both directions alike. In this regard, I agree with J. Lowe who claims that the method of ontology/metaphysics "is first to argue, in a relatively *a priori* fashion, for the possibility – and compossibility – of certain sorts of things and then to argue, on partly empirical grounds, for the actuality of some of those things that are compossible." [Lowe 2011: 81] In this section, we start at the 'top', by a priorily outlining the possibility and compossibility of 'certain sorts of things', namely parts, wholes and, in particular, their mutual interplay as a dynamic entity. Later chapters will then be concerned with the actuality of PWO by arguing on empirical grounds, i.e. from the 'bottom' towards what will have been determined in the present chapter as the conceptual possibility of PWO.

As the aim of this project is the outline of an ontological theory whose scope is universal and whose conclusions are valid for every conceivable domain of reality in which part-whole structures appear, this first step should lead us to a formal ontology. According to Guarino [1995: 5], "what formal ontology is concerned in is not so much the bare existency of certain individuals, but rather the rigorous description of their *forms*." Thus, with a formal ontology we cannot determine the ontological status, i.e. the actual existence, of PWO. Yet we may arrive at a better understanding of its possible formal nature, even if we postpone the confirmation or negation of its existence until we commence the bottom-up approach. What I would like to discover in this section is merely its formal possibility, i.e. the condition for its actual

existence. For the moment, we have to classify PWO as an abstract and hypothesized concept, as an as-if-entity, the proper nature and existence of which is still under-determined.

What is more, even the mere possibility of PWO cannot be concluded in an a priori fashion if the latter is understood as strict deductive reasoning. When N. Cocchiarella [2007: 4] defines formal ontology as “a comprehensive deductive science that is prior to all others in both logical and ontological structure”, I only agree with the priority of formal ontology (for reasons of the meta-ontological *quaestio facti* pointed out in the previous chapter). However, I doubt that even a formal ontology can be and should be deductive in a strict sense, because this would make its conclusions simply tautological and therefore uninformative.<sup>1</sup> We will see in subsection 2.2.7 that even the actual possibility of PWO does not deductively follow from the formal possibility of parts and wholes. Yet, it seems plausible to me that the former can be included as a certain type of category in a formal ontology that has to start with parts and wholes as premises. For this reason, I strongly sympathize with Lowe again, who holds the view that formal ontology “is not – or certainly not merely – the application of formal systems to questions of ontology. By ‘formal systems’ here I mean logistical systems, broadly conceived – thus, formal logic in its various guises, set theory, and mereology (the formal study of part-whole relations).” [Lowe 2011: 82] Lowe thus even excludes mereology from formal ontology, although mereology, i.e. the formal “theory of parthood relations: of the relations of part to whole and the relations of part to part within a whole” [Varzi 2016], would have certainly been a putative candidate for a conceptual approach towards the ontological theory whose development I have in mind.<sup>2</sup>

What then, according to Lowe, should formal ontology comprise if it is not logical forms that are stipulated and derived with strictly deductive methods? Lowe claims that formal ontology should rather be concerned with ‘ontological forms’, whereby the “notion of ontological form is indissolubly tied to that of ontological categories, for in effect to characterize an entity’s ontological form is to specify the ontological category to which it belongs. [...] So, to specify an entity’s ontological form is, centrally, to say what its existence and identity conditions are and thus to specify its general essence – that aspect of its essence that it shares with all other entities belonging to the same category. For, to know what an entity is, we need to know what it takes for an entity of that kind to exist and what it takes for an entity of that kind to be the same as or different from any other entity of that kind. Very often, this will involve how such an entity is essentially related to entities belonging to other ontological categories” [Lowe 2011: 83] Although I take this characterization of formal ontology very seriously, it is hard to understand, because it is dense and Lowe explains one technical term (ontological form) with other technical terms (ontological category, entity, existence and identity conditions) that are themselves in need of explanation.

Let me try to give a simple interpretative application of this passage by using the part-whole terminology that matters for this project. The ontological form we seek is part-whole oscillation. The ontological categories that are indissolubly tied to PWO are ‘part’, ‘whole’ and ‘relation’, and, in a wider sense, the other parameters ‘meaning’, ‘reality’ and ‘experience’.

---

<sup>1</sup>D’Agostino et al. [2009: 352] call this the ‘scandal of deduction’: “[...] if the conclusion of a deductive argument is always ‘contained’ in the premises, why is deductive reasoning generally perceived as highly valuable epistemically? If all theorems are ‘contained’ in the axioms of a theory, how is mathematical discovery possible at all?”

<sup>2</sup>Cf. Smith et al. [1983: 73–4] for a similar distinction between formal logic and formal ontology. I will come back to the approach of mereology and Lowe’s reason for not classifying it as formal ontology in section 3.1.

At least one necessary condition for the existence of PWO would be that the parts and whole co-exist as different, distinguishable aspects of one entity. Such an entity we will later identify as a conceptual metonymy for the ontological region of embodied language,<sup>3</sup> and as a Gestalt entity for the ontological region of empirical perception.<sup>4</sup> Formal ontology is not restricted to any region of reality alone. This is what makes it formal, not only material, not only ideal, not only regionally applicable, for example to an abstract domain of logical laws. Admittedly, I do not yet know if there is any identity condition for PWO and to which other entities belonging to other ontological categories PWO can essentially be related. Investigating this would be futile without at least determining the possibility, if not even the actuality, of PWO beforehand.

Prior to the determination of PWO's ontological nature and – which will not be part of this project – of its actual ontological status, we have to disclose the conditions for its existence, starting with the concepts of part, whole and their relation as ontological categories. In so doing, we should not understand concepts as mental bubbles leaving, together with the model they result in, all external reality outside. A concept is rather (and once again in accordance with Lowe) “just a way of thinking about something – either a particular thing or a sort of things – and can be more or less adequate, to the extent that it more or less accurately represents the nature of the thing or things in question.” [id.: 81] Concepts are thus always in a relationship to what they are about, and consequently, conceptual analysis, especially with the pretension of counting as formal ontology, is not a top-*only* method, but a top-*down* method. This means that it is always directed towards and – just mediated by concepts – analyzing reality itself instead of orbiting around its starting point by being self-referential. As Asenjo [?: 363] writes, “formal ontology is definitely ontological, since its major major emphasis and final aim is the applicability of concepts and theory to reality.” Hence, also, the use of concrete examples is absolutely to the point and appropriate in order to illustrate what the concepts in question are about. Even an analysis of concepts would be empty and formalistic if it did not target the concrete entities that are supposed to correspond with the analyzed concepts. The early E. Husserl, to whose formal part-whole ontology we now turn, formulates this Kantian principle as follows: “No concept can be thought without foundation in a concrete intuition.” [Husserl 2003: 83].

## 2.2 Husserl's 3<sup>rd</sup> Logical Investigation

We start at the top, at the two highest conceptual peaks from which we can go downhill via a priori reasoning, as far as we want formal ontology to carry us. Obviously, the two highest conceptual peaks for any formal part-whole ontology are the correlative notions of ‘part’ and ‘whole’, which, due to being correlative, always stand in a certain ‘relation’. By stipulating only these formal categories in the beginning of the third of his *Logical Investigations* (henceforth abbreviated as ‘3<sup>rd</sup> LI’), Husserl inaugurates a 70-page long *tour de force* consisting of distinctions, definitions, applications, not always obvious examples, technical terms, and even more distinctions, all derived from the simple concepts of part and whole. Admittedly, it is laborious to fathom the 3<sup>rd</sup> LI, in particular considering the relatively low amount of secondary

---

<sup>3</sup>Cf. chapter 5.

<sup>4</sup>Cf. chapters 6 and 7.

literature on it compared to the vast scholarship on Husserl in general. Every attempt at understanding this investigation, which Smith et al. [1982: 37] declare to be “the single most important contribution to realist (Aristotelian) ontology in the modern period”, however, is rewarding in at least two respects.

It is rewarding, firstly, because “it provides a formal structure that reappears at many strategic places in the *Investigations* and in Husserl's later work. It serves as the skeleton for Husserl's more elaborate philosophical doctrines about subjectivity and its world.” [Sokolowski 1968: 537] As Sokolowski demonstrates, a good understanding of the 3<sup>rd</sup> LI can help in deciphering, among others, Husserl's later noematic analyses on how objects appear in consciousness, his conception of subjectivity and intentional acts, and the global manner in which he introduces phenomenological terminology.<sup>5</sup> This aspect of understanding the key role of the 3<sup>rd</sup> LI can also be reflected on, as D. Willard<sup>6</sup> does, by describing the transition from Husserl's 1890s writings, especially his *Philosophy of Arithmetic*<sup>7</sup> and his paper ‘Psychological Studies in the Elements of Logic’,<sup>8</sup> to the formal conception of parts and whole in the *Logical Investigations*. Also E. Ströker points out that the 3<sup>rd</sup> LI is crucial for comprehending the other LI as well as Husserl's complete phenomenology.<sup>9</sup> R. Poli depicts the development of Husserl's formal ontology from the *Logical Investigations* to Husserl's later writings (*Ideas I, Experience and Judgement*) and compares it with Husserl's varying conceptions of formal logic.<sup>10</sup> Furthermore, B. Smith interprets Husserl's theory of objectifying and nonobjectifying acts in terms of relations of foundations that are mainly developed in the 3<sup>rd</sup> LI.<sup>11</sup> Smith et al. [1982: 47] even hypothesize that “as a matter of fact and of principle, all propositions of phenomenology are expressions of what we shall call material *a priori* connections between moments, are capable of being perspicuously represented within the framework of the theory of part and whole.” All of this is significant indeed, but I prefer to refrain from working out the details of this aspect, because it requires an extensive excursion that would, however, only nebulize the aim, which is not Husserl exegesis, but – in this section – a formal ontology of parts, wholes and the possibility of their interplay in order to go beyond Husserl.

Secondly, a clear picture of Husserl's formal part-whole ontology functions as a prerequisite for entering into formalistic, perceptual and experiential discussions on part-whole relations. It provides us with propaedeutic, flexible terminology and definitions. In addition, it is - due to its ontological pretension - unrestricted to any domain of reality without excluding the role of perception from the outset. This is especially relevant for the present project, which takes both the deductive (*a priori* reasoning) *and* the inductive (perception) methods of ontology into account. Moreover, Husserl's formal ontology is what may be called in contemporary terms ‘open source’. This means that it does not cling to a closed philosophical system and receive its

---

<sup>5</sup>“Husserl's terms are introduced by making philosophical distinctions and, as we have already anticipated, the distinctions are made according to the pattern of part-whole structures. Thus the very meaningfulness of what he says depends on the legitimacy of part-whole logic.” [Sokolowski 1968: 538]

<sup>6</sup>Cf. Willard [1982].

<sup>7</sup>Cf. Husserl [2003].

<sup>8</sup>Cf. Husserl [1979].

<sup>9</sup>“Insofern liegt die Thematik der dritten Untersuchung nicht nur allen Erörterungen über gegenständliche Strukturen zugrunde. Vielmehr durchdringt sie, wenn auch in einer vorerst verborgenen Weise, alle anderen Logischen Untersuchungen Husserls und letztlich seine gesamte Phänomenologie.” [Ströker 2009: xlvi]

<sup>10</sup>Cf. Poli [1993].

<sup>11</sup>Cf. Smith [1986].

validity from additional premises, or that it merely lies hidden beneath Husserl's phenomenology and has to be extracted from there. Instead, it seems to me that by revealing the formal code with which he operates both in the *Logical Investigations* and, later on, and by presenting it in an ontologically unrestricted, i.e. neutral environment, Husserl offers us an accessible open source code that everybody can read, modify and adapt to questions different from the ones he raised himself in his own work. As P. Simons [1982: 113-4] puts it, "the ideas [of the 3<sup>rd</sup> LI, M.S.] could become indispensable weapons in the conceptual armoury of the philosopher interested in ontology. [...] But, for all its detail, the investigation remains only a sketch of what a fully developed formal theory would look like, and like all philosophical sketches, presents problems of interpretation, lacunae, and vagueness, as well as being highly suggestive of possible fruitful developments." To substantiate this impression, Simons himself explores Husserl's part-whole ontology in terms of modal logic<sup>12</sup> and mereology.<sup>13</sup> Compared to Simons, my own aim in section 2.2 is unassuming and, although it engages in formal ontology, does not strive for logical formalization.<sup>14</sup> By outlining Husserl's formal ontology and by demarcating it with his material ontology, I merely demonstrate how the 3<sup>rd</sup> LI's capacity for development can lead us one step closer towards the determination of the ontological nature of PWO.

### 2.2.1 Formal and Material Ontology

To begin with, it is helpful to visualize the 3<sup>rd</sup> LI as a 2-dimensional table with three columns and an as yet undefined number of rows. The left column is reserved for the concepts 'part' and 'whole' as well as their attributes such as 'dependent' and 'independent'. We will come to these concepts and attributes in a second. The right column depicts the role these concepts and attributes play in a material ontology that draws on empirical laws and particular percepts. The middle column, by contrast, depicts the nature of these concepts and attributes in the context of purely formal, analytic laws. "Analytic laws are unconditionally universal propositions, which are accordingly free from all explicit or implicit assertions of individual existence; they include none but formal concepts, and if we go back to such as are primitive, they contain only formal categories. Analytic laws stand opposed to their *specifications* [right column, M.S.], which arise when we introduce concepts *with content*, and thoughts perhaps positing individual existence, e.g. *this, the Kaiser*." [Husserl 2001: 20–1].

Concept	Formal Ontology (FO)	Material Ontology (MO)
---------	----------------------	------------------------

Thus, the concepts 'part' and 'whole' can be taken both in a purely formal and in what Husserl calls a 'material' or 'factual' (*sachlich* or *inhaltlich*) sense.<sup>15</sup> The formal sense is to be understood as universal, i.e. as valid for every domain of reality, and instead of being about a particular thing with particular attributes, it concerns only pure species and the necessary laws between them, it concerns "what all objects and object-regions have in common." [Smith et

<sup>12</sup>Cf. Simons [1982].

<sup>13</sup>Cf. the third part of Simons [2000]. For similar attempts to formalize Husserl's part-whole theory cf. Blecksmith & Null [1991], Fine [1995] and Casari [2000, 2007].

<sup>14</sup>Cf. Poli [2002: 642] on the difference between formal and formalized ontology.

<sup>15</sup>Cf. Albertazzi [1996] for a very detailed discussion of Husserl's formal and material ontology.



al. 1995: 29].<sup>16</sup> Therefore, although it is not reducible to it, the formal sense has to include the material sense, as the material sense presents particular instantiations of species, for example in the regions of psychology or language.<sup>17</sup> In return, as Smith [2000: 296] explains, “we can move from this level of material concepts to the purely formal level of: *a something, this something, something in general* and so on, by allowing materially determinate concepts to become mere place-holders for any concepts whatsoever – a process of ‘formalization.’” Due to the contingency of empirical contents, however, the analytic laws of the formal sense are never instantiated in a pure and necessary manner when perception is involved. By inserting this ontological ‘middle column’ in the 3<sup>rd</sup> LI, Husserl moves away from his former stress on psychological acts as conditions for the apprehension of wholes, which he emphasized especially in the case of arithmetic totalities,<sup>18</sup> but also for the apprehension of particulars and species in general.<sup>19</sup> This tendency is in line with the whole project of the LI and their prolegomena, in which Husserl wants to account for the objectivity of logical truths. It surely reaches its climax in the formal ontology of the 3<sup>rd</sup> LI, after the ideal, psychologically independent status of universals has been proven in the 2<sup>nd</sup> LI in order to account for objective knowledge.<sup>20</sup> This does not mean, however, that the perceptual side of parts and wholes became unimportant for Husserl. Throughout the whole 3<sup>rd</sup> LI, he makes concerted efforts to distinguish and compare both ‘columns’ in their relation to the concepts he discusses. But as Simons correctly remarks, Husserl is not always clear in this separation of the formal and the material sense.<sup>21</sup> This makes it even more urgent to fill in the ‘cells’ of the following table with critical caution and readiness for objections.

Concept	Formal Ontology (FO) → Species	Material Ontology (MO) → Particulars
...	...	...

<sup>16</sup>“Concepts like Something, One, Object, Quality, Relation, Association, Plurality, Number, Order, Ordinal Number, Whole, Part, Magnitude, etc., have a basically different character from concepts like House, Tree, Color, Tone, Space, Sensation, Feeling etc., which for their part express genuine content. Whereas the former group themselves round the empty notion of Something or Object as such, and are associated with this through formal ontological axioms, the latter are disposed about various highest material Genera or Categories, in which *material categories* have their root.” [Husserl 2001: 19]

<sup>17</sup>It is in this ontological universalization of part-whole structures that Smith et al. [1982: 53] recognize the true innovations of Husserl compared to his psychological forerunners or linguistic successors: “These innovations centre around the recognition on Husserl’s part of *ontological structure*; relations of foundation are seen not, as in Stumpf or Twardowski, as exclusively a matter of relations amongst mental contents, nor, as in Schlick and Wittgenstein, as a matter of grammar. They are, rather, necessarily all-pervasive, extending through *all* material ontological regions, including both the linguistic and the psychological.”

<sup>18</sup>In his *Philosophy of Arithmetic*, for example, Husserl stated that a “*totality originates in that a unitary interest – and, simultaneously with and in it, a unitary noticing – distinctly picks out and encompasses various contents*. Hence, the collective combination also can only be grasped by means of reflexion upon the psychical act through which the totality comes about.” [Husserl 2003: 77]

<sup>19</sup>Cf. Smith [1988a: 20].

<sup>20</sup>Cf. on the role of the 2<sup>nd</sup> and 3<sup>rd</sup> LI in particular Ströker [2009] and Willard [2003].

<sup>21</sup>“One of the problems with the interpretation of the third investigation is that not all traces of Husserl’s earlier psychological approach and interests have been expunged. This affects both the language within which Husserl makes his points, and the range of examples to which he generally makes recourse. Thus the word ‘content’ is frequently used where the word ‘object’ is also appropriate, and where the latter ought to be used in preference. This is despite Husserl’s acceptance that his remarks hold for all objects generally, and not just psychological contents.” [Simons 1982: 116] Cf. for the same critique Fine [1995: 465].

In the short introduction to the 3<sup>rd</sup> LI, Husserl makes an important distinction between conscious *content* (**C**)<sup>22</sup> and *object* as such (**O**). **C** belongs to the domain of perception and is studied in descriptive psychology. It thus belongs to Material Ontology (**MO**) and can be associated with the inductive method discussed in section 1.3 above. **O** is the equivalent of **C**, but counts for every domain of reality and is studied in Formal Ontology (**FO**).<sup>23</sup> Therefore, what can be said about **C** in **MO** is just a special case of **O** in **FO**, which is, unfortunately, why Husserl often uses **C** and **O** interchangeably. Let us call the general concept that refers to both **C** and **O** an entity (**E**).

Concept	Formal Ontology ( <b>FO</b> ) → Species	Material Ontology ( <b>MO</b> ) → Particulars
Entity ( <b>E</b> )	Object ( <b>O</b> )	Content ( <b>C</b> )

### 2.2.2 Simple and Complex Wholes

In the first paragraph after the introduction, Husserl claims that while **O** “can be related to one another as Wholes to Parts, they can also be related to one another as coordinated parts of a whole. These sorts of relations have an *a priori* foundation in the Idea of an object.” [id.: 4] An **O** can thus be a part (**O-P**) or it can be a whole (**O-W**). If an **O** has at least two disjunctive parts, it is a *complex whole* (**O-W-c**). If this is not the case, it is a *simple whole* (**O-W-s**). As part and whole are correlative terms, however, I find it questionable to speak about ‘wholes’ in the latter case, where no parts are involved. It would be more fitting to call **O-W-s** ‘atoms’, because they are not further dividable. In any case, Husserl gives an example for **O-W-s** and **O-W-c**, thereby drawing on the perceptual domain (which implies that this distinction counts for **MO**, i.e. **C**, as well). “In the unity of a sensory phenomenon we can perhaps discover a wholly determinate ‘moment’ of redness as well as the generic ‘moment’ of color. Color and determinate redness are not, however, disjoint ‘moments’. Redness, on the other hand, and the extension that it covers, are such disjointed moments, since they have no community of content. They have, we may say, a mutual association in the widest sense of the word; we have here a general relation of parts which is that of disjointed parts in a whole, an association of such parts.” [id.]

To illustrate this point, let's take an empty cup. This cup is red. The concrete redness of the cup and the universal idea, i.e. the species of redness, are not two disjunctive parts of the cup itself. The former is just the material instantiation of the latter. If we were only to consider the particular color, then a red cup is a **C-W-s**, what I suggest calling a ‘perceptible atom’. If we were only to consider the species ‘color’, then a red cup is a **O-W-s**, what I suggest calling an ‘objective atom’. But a cup is also a cup because of its shape. The concrete shape is something different than the concrete color, because they belong to different species. Only by

<sup>22</sup>Husserl does not use these abbreviations, but I would like to introduce them gradually for the sake of clarity and as auxiliary means. They should not be understood as syntactical elements of a logical language, but only as abbreviated technical terms. It does not make much sense to isolate any of these abbreviations from this chapter, as their meaning changes until their final transformation into plain words at the end of the conclusion in section 2.3.

<sup>23</sup>Cf. Schubert Kalsi [1978: 141–3] on the difference between ‘content’ and ‘object’ in general.

analyzing the species on the formal ontological level, can we clearly distinguish concrete color and concrete shape and conclude that a ‘mutual association’ of both species is necessary to account for the cup in question. The cup could also be green and would still be a cup. Thus the instantiation of the species ‘color’ could change, but not the species itself, because there is no shape without color. Just as it lies a priori in the species ‘shape’ that it needs the species ‘color’ – and vice versa –, it is an a posteriori law that every particular shape needs a particular color – and vice versa. Therefore in the case of the red cup, there are two disjointed parts in the sense of two disjointed instantiations of species: (red) color and (cup) shape. This makes the particular red cup a **C-W-c** and red cups in general **O-W-c**.

Concept	Formal Ontology ( <b>FO</b> ) → Species	Material Ontology ( <b>MO</b> ) → Particulars
Entity ( <b>E</b> )	Object ( <b>O</b> )	Content ( <b>C</b> )
-Part	<b>O-P</b>	<b>C-P</b>
-Whole	<b>O-W</b>	<b>C-W</b>
-simple	<b>O-W-s</b> (objective atom)	<b>C-W-s</b> (perceptible atom)
-complex	<b>O-W-c</b>	<b>C-W-c</b>

### 2.2.3 Dependent Moments and Independent Pieces

Moreover, as we just saw, the part ‘color’ and the part ‘shape’ rely on each other. A shape needs to have a color and a color needs to be shaped in order to exist as parts of the red cup. This makes these parts *dependent* on the cup as a whole, because in this whole, they find mutual completion. In addition, the particular red cup, as a **C**, could not exist without being red and without being shaped. Thus also the particular red cup, taken as a **C-W**, is dependent on its two dependent **C-P**s. A cup in general, as **O-W**, is not dependent on particular instances of colors and shapes, but it is, nonetheless, dependent on the species ‘color’ and ‘shape’, because these two species are greater wholes than cups in general are (there can be no cups without a color/shape, but objects other than cups can have a color/shape). By definition, “contents presented together on any occasion can fall into two main classes: independent and non-independent contents. We have independent contents wherever the elements of a presentational complex (complex of contents) by their very nature *permit their separated presentation*; we have dependent contents wherever this is not the case.” [id.: 6] The distinction between dependent and independent parts and wholes, which actually dates back to a similar distinction made by C. Stumpf for the domain of **MO**,<sup>24</sup> is valid in **FO** as well.<sup>25</sup> Thus we now have in **FO** independent parts of objects (**O-P-i**), dependent parts of objects (**O-P-d**), independent wholes of objects (**O-W-i**), dependent wholes of objects (**O-W-d**), as well as their correspondent terms in **MO** (**C-P-i**, **C-P-d**, **C-W-i**, **C-W-d**) to operate with.

<sup>24</sup>Here is an excerpt from the original passage in Stumpf [1873: 108–9]: “Wir scheiden die Inhalte bezüglich des Zusammenvorgestelltwerdens nach dem Gesichtspuncte ihrer Zusammengehörigkeit in zwei Hauptclassen: *selbständige Inhalte* und *Theilinhalte*, und bestimmen als Definition und Kriterium dieses Unterschiedes: *selbständige Inhalte sind da vorhanden, wo die Elemente eines Vorstellungscomplexes ihrer Natur nach auch getrennt vorgestellt werden können; Theilinhalte da wo dies nicht der Fall ist.*”

<sup>25</sup>“Our discussions so far have shown that there is always an *a priori* law governing what is non-independent, having its conceptual roots in what is universal in the whole and part in question.” [id.: 17]



Whereas Husserl calls **O-P-d**, **O-W-d**, **C-P-d** and **C-W-d** (if wholes are regarded as parts of more inclusive wholes, which is possible) *moments*, he calls **O-P-i**, **O-W-i**, **C-P-i** and **C-W-i** *pieces*.<sup>26</sup> As an example of a piece as an independent part, Husserl takes the head of a horse. We can imagine or think of this head without the other parts of the horse. It would remain the same head, with or without being attached to the other parts, independent of the background in front of which the horse's head appears. It "is unaffected by the elimination of any given arrangement of compresent contents whatsoever. This self-evidently entails: that the existence of this content, to the extent that it depends on itself and its essence, is not at all conditioned by the existence of other contents, that it could exist as it is, through an *a priori* necessity of essence, even if nothing were there outside of it, even if all around were altered at will, i.e. without principle." [id.: 9] We could also think of, for example, a piece of cloth *p* that can make part of a person *w* or hang in the closet *w'*, but can also lie loosely on the ground. In the case of pieces, there are only possible (**FO**) and actual (**MO**), but always contingent associations between the parts. Independent parts can be associated or separated or enter into a whole arbitrarily, without changes of their essence, without existential gain or loss for themselves. This leaves the question open whether or not this kind of whole is itself an additional entity, whether it enriches what may be called our 'ontological inventory'. As far as I can tell, Husserl does not explicitly ask or answer this question in the 3<sup>rd</sup> LI. Let us call an association of pieces (**O-W-i** and **C-W-i**) an 'agglomeration'. The only *a priori* (**FO**) and empirical (**MO**) necessity for an agglomeration is the self-sufficiency of the pieces. This is why a piece can be characterized as *concrete* or as a *concretum*.<sup>27</sup> Furthermore, as Sokolowski [2000: 23] explains, when pieces are separated from a whole, they can "become wholes in themselves and are no longer parts. Pieces, then, are parts that can become wholes."

This is different in the case of moments, where there is no necessary existence of one single moment, but a necessary law (*Wesensgesetz*) that is "given in our consciousness with *apodictic self-evidence*" [Husserl 2001: 12]. This law holds moments together in order to constitute a whole from which they receive their complement. Detached from the whole, a moment could not exist. It would just vanish into nothingness. "Moments are the kind of part that cannot become a whole." [Sokolowski 2000: 23] We cannot think of one dependent moment without necessarily thinking of other moments or a whole going along with it.<sup>28</sup> Within a whole **W'**, a

<sup>26</sup>In their article 'Truth-Makers', Mulligan et al. [1984] point out that dependent and independent objects in a formal-general as well as in a material-particular sense can be traced back to the Aristotelian categories of substantial-universal (here: **O** in **FO**), accidental-universal (**C** in **FO**), substantial-particular (**O** in **MO**), and accidental-particular (**C** in **MO**). They also show how from Aristotle on these distinctions played a role in the theories of Descartes, Locke, Hume, Brentano and Stumpf, whereas in "modern Anglo-Saxon philosophy commitment to entities of this kind is rarer" [Mulligan et al. 1984: 293]. I will come back to this latter point in my discussion of material composition and mereology in section 3.1. However, Winston et al. indicate that part-whole relations should not be confused with the attributions of accidents to substances. "While towers have height as one of their attributes, height is not part of a tower." [Winston et al. 1987: 429] On the influence of Brentano's part-whole psychology and metaphysics on Husserl, cf. Heinämaa [2009: 268–273].

<sup>27</sup>Cf. Husserl [2001: 29].

<sup>28</sup>"What we here express by the word 'present', could be better expressed by the word 'think'. An attribute, a form of association and the like, cannot be *thought of* as self-existent, as isolated from all else, as being all that exists: this only can happen with 'thinglike' contents. Wherever the word 'think' occurs in this peculiar sense, we detect one of those subjective slantings of an objective, nay of an *a priori* state of affairs, which we referred to above. Differences such as this, that one object – we again choose the wider term, which includes the contents of intuitive experience [in our terms: perception, M.S.] – can be 'in and for

moment **P** can indeed be a **W** for other parts. For example, the color  $p$  as a moment of the cup  $w'$  can be a whole  $w$  for the different shades  $p'$  as parts of the color  $p$ . But if we were to detach  $w/p$  from  $w'$ , then  $w/p$  would not continue to exist, it would not remain  $w$  for  $p'$  or  $p$  of  $w'$  without having another whole above it. Both as a species and as its instantiation, the color red could not exist in and for itself as a simple or complex whole. For this reason, Husserl also characterizes moments as being *abstract*: they are not concrete and self-sufficient, but point beyond themselves for completion to “some whole of which it is a non-independent part.” [Husserl 2001: 29] Or in the words of Casati et al. [1999: 107]: “Dependent parts are parasitic on the wholes to which they belong.”

This is the case in what Husserl calls ‘moments of unity’ (*Einheitsmomente*). A moment of unity is the whole **C-W-d** or **C-W-i** in which single moments find completion. Moments of unity, which Husserl up to his LI also calls ‘figural moments’,<sup>29</sup> “built on the elements that we primarily distinguish, by which such elements are similarly or dissimilarly *associated into sensuous intuitive wholes*.” [id.: 8] Here, Husserl refers to C. von Ehrenfels’ Gestalt-qualities that, as we will see in chapter 6, account for a perceptual whole such as a melody, which is constituted by distinguishable, but mutually dependent elements of tones. Husserl makes clear, however, that “one needs here a supplementary distinction between the *phenomenological* moments of unity, which give unity to the experiences or parts of experiences (the real phenomenological data), and the *objective* moments of unity, which belong to the *intentional objects and parts of objects, which in general* transcend the experiential sphere.” [id.: 8–9] In other words, Husserl again emphasizes the difference between **FO** and **MO**. Whereas descriptive psychology, represented by C. Stumpf and Ehrenfels, observed the role of **C-P-d** in contrast with **C-P-i** for the constitution of **C-W-d** and **C-W-i**, Husserl takes these empirical observations as a starting point and emphasizes from there the significance of **O-P-d** and **O-P-i** as well as **O-W-d** and **O-W-i**. This makes sense, because if we were to remain only on the level of **C**, we could never explain, for example, why a melody is independent of the concrete tones in which it is played (it can be played on this or that instrument, in this or that octave). If we take a perceived melody – not the one written on a manuscript paper – only as a particular content, it is always dependent on its necessarily particular parts, on the concrete tones in which it is played. In order to explain the independence of the melody, what Ehrenfels calls its ‘transposability’, we

---

itself’, while another can only have being in, or attached to some other object – are no mere contingencies of our subjective thinking. [...] What cannot be thought, cannot be, what cannot be, cannot be thought – this equivalence fixes the differences between the pregnant notion of thinking and the ordinary subjective sense of presentation and thought.” – This passage is crucial, because it underlines Hessen’s characterization of the deductive method of ontology that presupposes the *adaequatio* of a priori thinking and reality (cf. section 1.2).

<sup>29</sup>In his *Philosophy of Arithmetic*, Husserl describes ‘figural moments’ as “units in which the peculiarities of the contents or of their primary relations fuse with one another. I say ‘fuse’ [*verschmelzen*], and wish thereby to stress that the unitary Moments are precisely something other than mere sums. We grasp the quasi-qualitative character of the whole intuition as something simple, and not as a *collectivum* of contents and relations. But what is simple to our first apprehension turns out upon subsequent analysis to be something complex. We discover the intrinsic and the relational peculiarities appertaining to the respective quasi-quality; we clearly see (at least in the cases easier to analyze) that those peculiarities form its *parts*.” [Husserl 2003: 216] This passage is not only important for its description of ‘figural moments’ as such, but also because it stresses the interplay of simple and complex wholes, thereby giving a first impression of what I will identify as PWO in section 2.2.7. Cf. Poggi [2016: 141] on how the usage of the word ‘fusion’ (*Verschmelzung*) dates back to the psychology of J. F. Herbart, in which “‘fusions’ are also composite presentations, where two or more elements come together simultaneously.”

have to understand the melody in question as *a kind of O* that is dependent on its **O-P**, its ideal parts (e.g. its having tones in general), but not on its **C-P**, its particular parts.<sup>30</sup> We approach the notion of a Gestalt entity here with all the problems and open questions it entails. But let us continue the discussion of the 3<sup>rd</sup> LI first and then apply the Husserlian terminology to Gestalt thinking in subsequent sections with more conceptual equipment.

Concept	Formal Ontology ( <b>FO</b> ) → Species	Material Ontology ( <b>MO</b> ) → Particulars
Entity ( <b>E</b> )	Object ( <b>O</b> )	Content ( <b>C</b> )
- Part	<b>O-P</b>	<b>C-P</b>
- dependent	<b>O-P-d</b> (objective moment)	<b>C-P-d</b> (perceptible moment)
- independent	<b>O-P-i</b> (objective piece)	<b>C-P-i</b> (perceptible piece)
- Whole	<b>O-W</b>	<b>C-W</b>
- dependent	<b>O-W-d</b> (objective moment of unity)	<b>C-W-d</b> (perceptible moment of unity)
- independent	<b>O-W-i</b> (objective agglomeration)	<b>C-W-i</b> (perceptible agglomeration)
- simple	<b>O-W-s</b> (objective atom)	<b>C-W-s</b> (perceptible atom)
- complex	<b>O-W-c</b>	<b>C-W-c</b>

## 2.2.4 Relative and Absolute (In)Dependency

Three more distinctions Husserl makes are worth noting. The first distinction is the one between *relative (in)dependency* and *absolute (in)dependency*. Let us take the example of the red cup again. The red cup has as a part the color red. The color red is a moment. It can only find completion in the cup as a whole, because the cup, as a complex whole, has at least one more moment, namely the shape. The whole holds color and shape together and makes them existent only in this togetherness. Thus, the color depends on the cup. The color, however, is not dependent on absolutely everything. If we take the red color of the cup as a species (redness), it is independent relative to its particular shades, which are parts of the color as species. If the upper half of the cup is ruby and the lower half burgundy, or were it to be the other way round, then the cup would still display redness in general, as **O-W** of the shades. However, the particular red as the shades' **C-W** is dependent relative to the shades. This particular color would not be this particular color if the shades were not such and such, say ruby-burgundy-red.<sup>31</sup> The color of the cup is therefore not absolutely dependent, as it can be independent relative to its parts.

From this kind of perceptual example, Husserl derives a general principle: "A content *A* is non-independent relatively to a content *B*, if there is a law rooted in the Generic Essences *A*, *B*,

<sup>30</sup>Cf. also Husserl [1975: 6, 34].

<sup>31</sup>I ask the patient reader to let me refrain here from possible counter-examples of cups that change their color when a hot or cold beverage is added. Such counter-examples would entail some notion of temporality and would, for the moment, only over-complicate the already very tricky distinctions Husserl confronts us with. Temporality will come in time, however, because any characterization of PWO is incomplete without taking into consideration a temporal dimension.

which lays down *a priori* that a content of the pure Genus *A* can only exist in or associated with a content of the Genus *B*." [id.: 23] An absolutely (in)dependent part or whole would therefore be (in)dependent relative to all other parts or wholes it is related to. But this is, according to Husserl, just "a limiting case [*Grenzfall*] of the relative." [id.: 22] Furthermore, if the shades *m* of the color are dependent parts relative to the color *w*, then they are also dependent relative to the whole cup *w'*. It is not possible that the shades *m* become independent parts relative to a whole *w'* that is bigger than the whole *w* they are relatively dependent on and if *w'* includes *w*. "Whatever is independent or non-independent in relation to a *B*, also maintains this property in relation to every whole *B'* in relation to which *B* is independent or non-independent – a proposition, whose converse is of course invalid." [id.: 24] The converse is invalid, because a whole *B'* (the red cup as a particular or a species) can be dependent relative to a part *B* (its color red as species), but this does not automatically mean that it is dependent relative to the shades (as particular parts) of *B*. In order to determine relative and absolute (in)dependency, we always have to distinguish between **FO** and **MO**, i.e. between general objects (universals, species, genera) and empirical contents (individuals, instantiations, particulars).

With the distinctions particular/species, dependent/independent and relative/absolute, we can now formulate the following eight rules, which I carefully assume to be preliminarily correct regarding the 3<sup>rd</sup> LI as discussed so far. Please note that before we come to the conclusion of this chapter in section 2.3, I will revise some of these rules.

- (1) **O-P-d** is dependent relative to **O-W-d** and **O-W-i**, but independent relative to **C-W-d** and **C-W-i**.
- (2) **O-P-i** is absolutely independent.
- (3) **O-W-d** is dependent relative to **O-P-d** and **O-P-i**, but independent relative to **C-P-d** and **C-P-i**.
- (4) **O-W-i** is dependent relative to **O-P-i**, but independent relative to **O-P-d**, **C-P-i** and **C-P-d**.
- (5) **C-P-d** is absolutely dependent.
- (6) **C-P-i** is dependent relative to **O-W-d** and **O-W-i**, but independent relative to **C-W-d** and **C-W-i**.
- (7) **C-W-d** is absolutely dependent.
- (8) **C-W-i** is dependent relative to **O-P-d**, **O-P-i** and **C-P-i**, but independent relative to **C-P-d**.

This is how I suggest deciphering Husserl's 3<sup>rd</sup> LI with the distinctions made so far. Even if some of these rules should prove to be incorrect (and I invite the critical reader to find counter-examples), it is nonetheless unavoidable to formulate them plainly before we turn to the next distinction.

## 2.2.5 Founded and Founding I: Towards a Flat Ontology of Pieces

The second distinction is the one between *founded* **P** or **W** and *founding* **P** or **W**. We saw that in **FO** and in **MO**, a part **P** as well as a whole **W** can be either independent or dependent in relation to another **P'** or **W'**. **P** can be (in)dependent in relation to **P'** or **W**. **W** can be (in)dependent in relation to **P** or **W'**. We can say that the particular color of the cup *p* is both dependent on the particular shades *p'* and on the particular or general cup *w* itself. But what does dependency mean? It means that **P** is *founded* by **P'** or **W**, or in other words, it means that **P'** and **W** *found* **P**. Husserl defines this as follows: “If a law of essence means that an *A* cannot as such exist except in a more comprehensive unity which connects it with an *M*, we say that *A* as such requires foundation by an *M* or also that an *A* as such needs to be supplemented by an *M*. If accordingly *A*<sub>0</sub> and *M*<sub>0</sub> are determinate instances of the pure kinds *A* or *M*, actualized in a single whole, and standing in the relations mentioned, we say that *A*<sub>0</sub> is *founded upon* *M*<sub>0</sub>, and that it is *exclusively* founded on *M*<sub>0</sub> if *A*<sub>0</sub>'s need for supplementation is satisfied by *M*<sub>0</sub> alone.” [id.: 25]<sup>32</sup> As a **P** can also be dependent on a **W**<sup>33</sup>, not only on another part **P'**, it is also possible that **W** *found* **P**. Husserl goes further and defines, in a Spinozistic fashion, six analytic propositions or theorems that are supposed to follow from the formal possibility that **P** can be founded by **P'** or **W**.<sup>34</sup> For the purposes of my project, however, it is sufficient to know about the distinction between founded and founding **P** or **W** without going into analytic entanglements.

Already taken by itself, without analytical consequences, the distinction between founded and founding **P** or **W** is fairly suggestive. It seems to me that it is mainly in the context of this distinction that Simons' characterization of Husserl's 3<sup>rd</sup> LI “as being highly suggestive of possible fruitful developments” [1982: 113–4] proves true. In fact, the distinction between founded and founding can suggest both a vertical ontology and a flat ontology, i.e. an ontology with and without hierarchies. It suggests a flat ontology, because it suggests that if **P** and **P'** found each other, it is no longer necessary to stipulate a **W** as an additional entity. **P** and **P'** could just enter into a founding relation “without external assistance” [*ohne äußeren Sukkurs*] [id.: 34]. Thus if the particular color *p* of the cup and the particular shape *p'* enter into a

<sup>32</sup>Cf. also the definition of a moment in the light of ‘foundation’ by Mulligan et al. [1984: 294]: “Moments may accordingly be defined as follows: *a* is a moment iff *a* exists and *a* is *de re* necessarily such that either it does not exist or there exists at least one object *b*, which is *de re* possibly such that it does not exist and which is not a proper or improper part of *a*. In such a case, *b* is a fundament of *a*, and we say also that *b* founds *a* or *a* is founded on *b*. If *c* is any object containing a fundament of *a* as proper or improper part, but not containing *a* as proper or improper part, we say, following Husserl, that *a* is dependent on *c*. Moments are thus by definition dependent on their fundaments. Objects which are not moments we call *independent objects* or *substances*. There is nothing in this account which precludes fundamenta from themselves being moments, nor the mutual foundation of two or more moments on each other.” Cf. also Smith et al. [1983: 80] on immediate and mediate founding relations in Husserl's 3<sup>rd</sup> LI.

<sup>33</sup>“Non-independence in and relative to the whole *W* or to the total range of contents determined by *W*, characterizes each of *W*'s partial contents which can only exist as parts, and as parts of a sort of whole represented in this range. Every partial content regarding which this is not true, is called *independent in, and relative to, the whole W*.” [id.: 22]

<sup>34</sup>Cf. for example the third proposition: “If *W* is an independent part of (and so also relatively to) *F*, then every independent part *w* of *W* also is an independent part of *F*.” [id.: 26] In her [1929] article ‘Zur Husserlschen Lehre von den Ganzen und Teilen’, E. Ginsberg critically discusses and even visualizes these six propositions. She concludes that only two of them (the first and the fifth) are true. Simons [1982: 138] in turn objects to Ginsberg's article: “Ginsberg does not however distinguish between foundation and relative dependence, and so some of her attempts to show that Husserl's theorems are not all valid are vitiated.”



founding relation, they would not have to depend on a more inclusive whole  $w$ , the particular red cup, anymore (against rule 5). Instead of a  $w$  in itself, the red cup would be identical with the composition  $\widehat{pp}$  of its mutually founding parts  $p$  and  $p'$ . “By a Whole we understand a range of contents which are all covered *by a single foundation* without the help of further contents. The contents of such a range we call its parts. Talk of the *singleness of the foundation* implies that *every content is foundationally connected, whether directly or indirectly* [we will see what this means in a moment, M.S.], *with every content.*” [id.]

What Husserl spells out for **C** here, also counts for **O** in general. If the founding relation between two or more **P** is sufficient for them to form a unity ‘without external assistance’ of a more embracing whole, then this ‘unity’ is not a “‘real predicate’, a ‘positive’ ‘real’ content” [id.: 37], but it is a mere “*categorical predicate*” [id.] of the parts. This is a very crucial point and it leads us to a conception of parts and wholes that has been called ‘Composition as Identity’.<sup>35</sup> Indeed, not having to postulate an additional whole with properties genuinely belonging to the whole and not to any of its parts to account for the dependency of parts has two advantages. Firstly, it undermines any theory that would declare this additional whole as existent, which would, despite any other advantages such a theory might have, unnecessarily burden our ontological inventory, i.e. the entities we accept as existing. A **W** on which both **P** and **P'** depend, whether or not it is independent relative to **P** and **P'**, could count as an additionally existing entity. In contrast, the founding relation  $\widehat{PP}$  is not something additional to and above **P** and **P'** and therefore prevents any potential declaration of **W** as an additionally existing entity. Instead, it is a contingent aspect that does not affect their respective essences, but it follows from them as a possible consequence of the parts’ innate qualities.<sup>36</sup> In more recent terms, we could say that if a thus founded whole has qualities that the parts do not have, e.g. if the four lines  $||||$  enter into a founding relation such that they result in a square  $\square$ , then the square’s quality of being rectangular, which is not possessed as such by the lines, is only a predictable and non-emergent ‘resultant property’ that does not have any influence on the individual nature of each line.<sup>37</sup> Since resultant properties are not emergent entities or qualities, but are already contained in and, in principle, predictable through the realm of logical possibilities of founding relations, they do not augment the list of items composing our ontological inventory.

Whereas anxieties about so-called ontological inventories became very important for ontolo-

---

<sup>35</sup>Cf. section 3.1.

<sup>36</sup>Cf. on this difference between relations and wholes A. Angyal’s 1939 article ‘The Structure of Wholes’. Therein, he calls wholes ‘systems’ and states that in “*a system the members do not hang together among themselves but they hang together in the whole. The constituent parts of a system always point beyond themselves; they point toward a superordinate, more inclusive factor, the system in and by which they are connected.*” [Angyal 1939: 30] In the case of relationships, on the other hand, the “object enters into a relationship with another object, thanks to its immanent qualities. Most relationships are based upon identity, diversity, or similarity (partial identity with partial diversity) of the objects, that is, on immanent attributes. The members of a system, on the contrary, do not become constituents of the system by means of their immanent qualities, but by means of their distribution or arrangement within the system. The object does not participate in the system by an inherent quality but by its position in the system.” [id.: 28] Thus relations between entities do not necessitate additional wholes, while the arrangement of entities (and moments are always arranged entities, as we will see in subsection 2.2.6) requires the existence of further wholes.

<sup>37</sup>Cf. Bedau [2004: 201], Boi [2017: 190], Heil [2017: 45], and section 7.3 below for a characterization of ‘resultant properties’ and their counterpart ‘emergent properties’.

gies and part-whole theories after Husserl, he himself stressed the second advantage, namely the avoidance of an infinite regress the postulation of a **W** would entail. “If then  $U$  is the moment of unity of  $A$  and  $B$ , there must be a new ‘moment’ of unity  $U_1$ , for  $A$  and  $U$  (since these two are unified) and again a new  $U_2$ , for  $B$  and  $U$ ; and just so new ‘moments’  $U_1$  and  $U_2$ , for  $U$  and  $U_1$ , and for  $U$  and  $U_2$  respectively, and so on *in infinitum*. [...] Our conception avoids these endless regresses of parts which are always splitting into further series. Nothing *really* exists – in the sense of being a possible object of sense-perception – beyond the aggregate of a whole’s ‘pieces’, together with the sensuous forms of unity, which rest on these pieces conjointly. Unity is conferred on the ‘moments’ in the ‘pieces’, as also on the ‘moments’ of unity *and* the ‘pieces’, by the foundational relations in the sense of our definition.” [id.: 37] This passage is very instructive, because we learn from it that together with the existence of wholes, Husserl also denies the (co-)existence of founded parts, i.e. moments. It seems that only unfounded parts, i.e. pieces, can found moments by entering into founding relations. Moments do not found other moments or pieces or wholes, because they cannot exist from the outset if there is no whole in which they could find completion. This is a very strong cut into the conceptual apparatus Husserl offered us so far. For our red cup it would mean that neither the color, nor the shape can enter into a founding relation as and for which the red cup exists as a ‘sensuous form of unity’. If such a founding relation would form a whole with a proper content, then this whole could again be related to one of its moments, which would cause an infinite regress.<sup>38</sup> By contrast, it has to be the pieces of the cup that make up the cup, and the pieces are nothing but its material parts. Only pieces can enter into relations of foundation that are not themselves something additional on which the pieces depend. The moments ‘color’ and ‘shape’ are but abstract parts of the material, concrete pieces. Without the pieces, there could be no *unity of moments*, because “*all wholes*, with the sole exception of these which break up into ‘pieces’, lack binding forms of unity.” [id.: 35] We have to keep this point in mind, because it is on this kind of material composition on which theories claiming that the composition or unity of parts are ontologically identical with the sum of the parts themselves are based, even if they do not explicitly draw on Husserl.

In other words, we could say that if, according to this first suggestive reading of founding relations, only parts exist that are both unfounded in a downward direction (they do not depend on smaller parts) and unfounded in an upward direction (they do not need to find completion in more embracing wholes), Husserl basically flattens his ontology out. The only entity **E**, both as object **O** or as content **C**, that exists has nothing ‘under’ it on which it would depend, and nothing ‘above’ it on which it would also depend. If we accept only pieces and their contingent relations as being real, then everything that exists, exists alongside each other on a horizontal plane and can relate to another, but does not have to do so in order to exist. Of course, pieces cannot form unities in arbitrary ways. Like pieces of a puzzle, they have to be arranged somehow, according to some a posteriori laws for instantiated species (particulars) or a priori laws for species, in order to found an object.<sup>39</sup> But these are only horizontal

<sup>38</sup>According to Smith et al. [1982: 49], what Husserl suggests here is a ‘contentless relation of foundation’: “That is, all that is truly unifying are relations of foundation. Such a contentless foundation is necessary, since otherwise the classical infinite regress [...] is threatened. [...] Foundation relations put a stop to this regress, since only contents can have a foundation, not foundation relations themselves.”

<sup>39</sup>“We cannot at will make the same content at one time part of one sort of whole, at another time part of another sort. To be a part, and, more exactly, to be a part of some determinate sort (a metaphysical,

relations of co-existence. There is no hierarchy of parts in a puzzle, no necessary sequence of arrangements. Every piece is constitutive on the same plane and it does not matter for the composition if I start in the bottom left corner or in the middle or anywhere else. Moreover, if my red cup falls down and breaks into pieces, it is not the cup that is broken, because it never existed independently in the first place, but the founding relations of the pieces are broken and – theoretically – can be re-established. Ontologically, pieces exist irrespective of their contingent arrangements, disarrangements or separations. Husserl thus lays the groundwork for a *flat ontology* in which there are no ontologically charged hierarchies between parts and wholes. However, there is another suggestive reading of founding Husserl offers, and this reading prepares the groundwork for a *vertical ontology*. The flexibility of Husserl's formal ontology is that we can go in both dimensions. The problem is, however, that each dimension leads to a completely different notion of how a part-whole ontology should picture reality.

## 2.2.6 Founded and Founding II: Towards a Vertical Ontology of Moments

Now we come to the third distinction, which is the distinction between *nearer* and more *remote* parts of the whole. Let us wind back to the beginning of section 2.2.5, when I introduced Husserl's notion of founding and founded **P** or **W**. There we saw that **P** is *founded* by **P'** or **W**, if it is dependent relative to **P'** or **W**. In this case, **P'** or **W** *found* **P**. A piece, whether **O-P-i** or **C-P-i**, is absolutely or relatively independent and therefore, in itself, unfounded. It can enter into founding relations with other pieces, however, whereby this relation is the unity they compose. We can call this unity a whole, but we saw that it is debatable whether this whole could exist on its own without its pieces. If we imagine a triptych, a painting with three co-existing pieces *l* (left), *m* (middle) and *r* (right), then there is a unity relation if the pieces are arranged in the order  $\widehat{lmr}$ . However, the pieces do not vanish into nothingness, like moments would do, if we re-arrange them arbitrarily as, for example,  $\widehat{mlr}$ . What would vanish in this re-arrangement are the moments that depend on the pieces' unity, like the interplay of colors, the relations of brightness and hue, geometrical patterns, levels of depth, and, with this, the overall semantic layer of the artwork. We can say that in  $\widehat{lmr}$ , *l* and *m* are *immediate*, i.e. *nearer* pieces and *l* and *r* are *mediate*, i.e. *more remote* pieces. The distance between *l* and *r* in  $\widehat{lmr}$  is greater than that between *l* and *m*, but as the pieces would equally exist in  $\widehat{mlr}$ , distances do not matter for the existence of pieces themselves. Sokolowski gives a similar example: "A finger is a piece of the hand, which in turn is a piece of the body, but there is no necessity of mediating the distance between finger and body by the hand; I can consider a finger an immediate part of the body itself. Pieces are arbitrarily called 'near' or 'far' parts of their wholes. They have none of the necessary hierarchical structure of mediation found in moments." [Sokolowski 1968: 540]

Thus unlike pieces, moments are embedded into a hierarchical structure. This hierarchy is not only reducible to how we perceive particular moments, but it is an a priori law of the moments' species: "*The order of mediacy and immediacy is based by law on the pure Genera*

---

physical or logical part or whatever) is rooted in the pure generic nature of the contents in question, and is governed by laws which in our sense are *a priori* laws or 'laws of essence'. This is a fundamental insight whose meaning must be respected in all our treatments and formulations." [Husserl 2001: 39]

*involved.*" [Husserl 2001: 28] Whereas the distance of pieces is arbitrary, because it does not have an objective measure on which the individual existence of a piece is based,<sup>40</sup> a moment always necessitates a more embracing whole for its own completion. According to Sokolowski [2000: 24], "there can be several layers of founding: shade is founded upon hue, which in turn is founded upon color. In this case, shade is only mediately founded upon color (via hue), while hue is immediately founded upon color. Pitch and timbre, however, are both immediately founded upon sound." Such vertical, a priori (species) as well as a posteriori (particulars) layers of founding are missing in the case of pieces.

On the one hand, we can say that any combination of any distance of **O-P-i** is independent relative to any **O-W** it can found. By the same token, any combination of **C-P-i** is independent relative to any **C-W** it can found. It would even be misleading to classify such combinations as 'wholes', because this would imply an (existent or non-existent) additional entity. They are better labelled as 'aggregations' or 'unity relations', whereby the unity is the relational network of the pieces, without being an entity above and beyond them. On the other hand, any combination of **O-P-d** is dependent relative to any **O-W** in which it finds completion. By the same token, any combination of **C-P-d** is dependent relative to any **C-W** in which it finds completion. Both **O-P-d** and **C-P-d** have to be founded by a more embracing whole in order to exist. The important point here is the hierarchy of moment-layers in the second case. We *descend*, for example, from a melody to its tones, from the tones to their quality, from the quality to the intensity.<sup>41</sup> Likewise, we can *ascend* - with many intermediary levels - from a melody to the exposition of a musical composition (say a sonata), from there to the whole composition, to a concrete concert, which is part of an evening program that in turn is part of a week-long music festival. Every level is itself founded by its nearest higher level and thus also by every more remote higher level, because "if A is a non-independent part of B, and B a non-independent part of C, then A too is a non-independent part of C." [Husserl 2001: 26] If this festival were not to take place for any reason, then the melody would not come into existence, at least not as a particular moment of the particular instantiation of the sonata. The festival in general does not depend on the instantiation of the melody it founds. Although it would not be *exactly this* particular festival without the melody, it is still, as *a* festival, independent relative to the particular melody. Without *any* melody, or rather *any* concert, however, the festival would not be a festival, which is why ticket holders would probably claim their money back. But whether or not the festival is dependent on its parts, it is always something over and above its moments. It is a whole *in* which a sonata can be performed that in turn *contains* a melody. The notion of near and remote moments strongly suggests a vertical dimension in which every entity **E** of a higher position includes an entity **E'** of a lower position.

The challenge we have to deal with is that Husserl suggests substituting the ontological

---

<sup>40</sup>"But in themselves the remotest of these parts [pieces, M.S.] are no further from the whole than the nearest. The parts in any case also owe their serial order to the serial order of our divisions, and these latter have no objective foundation. In an extended [physical, M.S.] whole there is no division which is intrinsically primary, and no definitely delimited group of divisions forming the first grade in division; from a given division there is also no progress determined by the thing's nature to a new division or grade in division. We could *begin* with each division without violating an intrinsic prerogative. Each mediate part can, according to one's chosen mode of division, likewise count as an immediate part, each immediate part as a mediate one." [id.: 31]

<sup>41</sup>Cf. Husserl [2001: 31].

independence of wholes in relation to their parts not only in the case of pieces, but also in the case of moments. By entering into relations of foundation, pieces can create wholes as 'unity relations' or 'agglomerations'. In so doing, the pieces are not dependent on their agglomeration. I throw my red cup on the ground, it breaks, and I have no cup anymore, because the pieces are no longer arranged in a certain unity. The pieces continue to exist, however, whereas the shape of the cup and its color as well as the shades of the color, as moments, do not. Unfortunately, they depended on the cup as a whole, which existed as a particular whole before it fell down and broke. But if we follow Husserl and cancel the notion of wholes from the context of pieces and keep only **O-W-d** and **C-W-d**, then no moment could stick to a more embracing whole that is independent in relation to the moment. A moment could not be real at all anymore, because there would be no – relative to the moment in question – ontologically independent whole from which it receives its completion, i.e. its existence. Therefore, as we already saw, Husserl claims that nothing “*really* exists – in the sense of being a possible object of sense-perception – beyond the aggregate of a whole's 'pieces', together with the sensuous forms of unity, which rest on these pieces conjointly. Unity is conferred on the 'moments' in the 'pieces', as also on the 'moments' of unity *and* the 'pieces', by the foundational relations in the sense of our definition.” [id.: 37]

Yet we should inquire if there is not a problem in this kind of reasoning. On the one hand, a moment is, like a piece, not supposed to be founded by a more embracing whole that is, as a species, independent relative to the particular moment and in which this moment would find completion. On the other hand, a moment can still be a moment within a piece, and a piece is by definition unfounded. If we talk about moments, we would still have to postulate an independent whole from which the moment gains completion, only with the restriction that this whole, as a piece, is in itself an absolutely independent entity. However, one reason why this restriction seems problematic to me is that in many cases in which moments are involved, it is impossible for the whole in which they find completion to be a piece. A combination of tones, for example, can be a sequence of moments of a melody. The melody itself can be played in a different octave or with different instruments. It is thus, on a general level, independent relative to its particular moments. But the melody is not a piece. Pieces are decomposable without existential loss, but a melody of which only a tiny fragment is played would not be a melody anymore. Pieces do not need to postulate more embracing wholes, but in most cases, a melody is embedded into a musical composition and receives its identity from that. It would be very counter-intuitive to claim that melodies or musical compositions do not exist, because they wrongly presupposed ontologically independent wholes. The same holds true on the level of species and general categories. The species 'color', for example, cannot be subdivided like a piece into redness, blueness, greenness and other subspecies such that these sub-species are separable from the species. These subspecies always remain colors and thus only find completion in the species 'color'. Furthermore, this species includes, by definition, other moments such as light, a certain functionality of our eyes and brains, the nature and structure of surfaces on which these colors appear as well as the manifold cultural meanings we associate with a certain color. In the whole color, all of these moments come together and refer to another, which is why no moment such as 'redness' or other subspecies and sub-subspecies (e.g. shades of redness) can be isolated like a piece without losing its significance and vanishing into nothingness.

Another reason why this restriction is problematic is closely related to the first one. In



his need to make clear distinctions, Husserl draws the demarcation line between pieces and moments too strictly, as if one part either is a piece or a moment, but never both at the same time. Sokolowski [2000: 23–4] convincingly observes, however, that a “particular item can be a piece in one respect while being a moment in another. For example, an acorn can be separated from its tree, but as an object of perception it cannot be separated from a background; to be perceived, the acorn has to be seen against a background of some sort or other.” My red cup, to give another example, can be a piece of a collection of tableware I bought in a store. The cup does not depend on the collection in order to exist, it could also be sold as a single piece. In another respect, the same cup, filled with freshly brewed coffee, can be a moment of a perfect morning. Relative to the morning as a whole, the cup would not be conceivable without the coffee as another moment. Taken as a moment, the cup depends on the whole as well as, indirectly via the whole, on other moments. It can also be a moment of the aesthetic decoration of the breakfast table. But if the cup were to remain empty, if it were to remain in the cupboard, then it would not participate in, i.e. not exist as a part of the perfect morning. It would only exist as a physical piece inside the cupboard, but outside the whole which is the perfect morning. From the evidence of a descriptive point of view, we do not live in a world where there are dividable collections of tableware, but no perfect mornings. Again, the same holds true not only of particular contents (**MO**), but also of species and objects in general (**FO**). A tree, taken as a species, can be a piece, as it is separable into branches, trunks, leaves and roots. In this regard, a forest is just a dividable aggregation of pieces of tree and other biophysical entities whose division does not matter for the forest, taken as a piece itself. This is a possible as well as – sadly, one might say – an actual picture. But a tree, again taken as a species and as a general object independent of our perception, could not exist without other objects such as water, earth and sunlight, which are equally inseparable moments of a forest and of nature as a whole. If we want an ontology that describes reality in its most general aspects, we cannot simply reduce the definition of existence to pieces alone, since one and the same entity can be a piece and a moment at the same time, i.e. being a moment and being a piece can ‘coincide’.<sup>42</sup>

With his notion of foundation, Husserl unfolds a crossroads that shows a horizontal as well as a vertical direction, thereby providing the groundwork for both a flat and a hierarchical part-whole ontology. The difficulty is that, at least in the 3<sup>rd</sup> LI, he sometimes suggests taking only the horizontal road, by claiming that only pieces really exist, side by side, i.e. dividable or constructible without bringing other entities into or out of existence. In other passages, however, he claims that moments can exist under the condition that there are wholes in which they find completion. But wholes have to exist in order for moments to exist. This means that we can climb up and down on what could be metaphorically called ‘the ladder of being’. Sometimes, however, Husserl leaves this question explicitly open, like when he writes that

---

<sup>42</sup>Cf. the example of the head of a corporation given by Smith et al. [1982: 40–1]: “The head of a corporation *c*, for example, *qua* head of *c*, is not a mere *piece* (independent part), since of course should the remainder of the corporation cease to exist then he too (in his capacity as its head) will also pass out of existence. This is not to deny that the moment of *c* which is its head is not – in the relevant interval of time – coincident with the independent whole which is the corresponding human being. But coincidence is not identity, as the proponents of an exclusively extensionalist ontology – for whom all strata collapse onto a single stratum (the isolation of which is presumed to be somehow unproblematic) – would have us to believe.” Cf. [id.: 42] for more examples of this sort and [id.: 49] for the difference between coincidence and identity.

“[n]on-independent objects are objects belonging to such pure Species as are governed by a law of essence to the effect that they only exist (if at all) [!] as parts of more inclusive wholes of a certain appropriate species.” [Husserl 2001: 12] It is impossible to proceed from here without making up our minds autonomously.

On all accounts, it would be unwise to just ignore or argue against either the horizontal direction or the vertical one. Husserl's part-whole ontology itself, as well as many examples we can think of, indicate that both directions are indeed justified and should not be played off against each other. It is obvious that we will arrive at a richer ontology if we account for pieces with agglomerations as well as for moments with wholes, both on the level of contents and objects. To me it seems that such a rich ontology does a better job in describing reality than an ontology that reduces all entities to their material pieces alone just in order to avoid the postulation and proliferation of entities that may – as Quine once put it in another context – ‘overpopulate’<sup>43</sup> our ontological inventory. Husserl argues convincingly that in the case of pieces and their founding relations, it is not necessary to postulate additional wholes with ontological value. Thus, for pieces and their relations, we should not bloat the amount of entities we hold to exist, and therefore we should stop using the term ‘wholes’ in the context of pieces. Reality can be kept ‘flat’ as regards pieces. Only in the case of moments, would I suggest upholding the vertical line and allowing for wholes to exist dependent on as well as independent of and ‘above’ moments. In so doing, we would arrive at a formal and – consequently – material ontology that can be visualized in a simple Cartesian coordinate system:

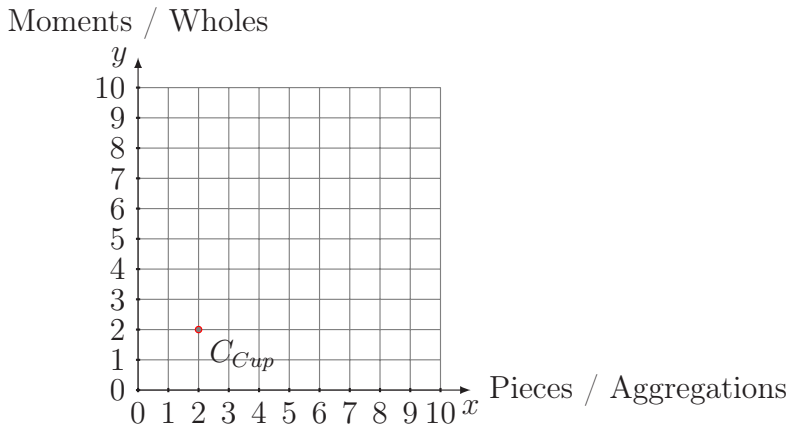


Figure 2-1: *Vertical and Horizontal*

We can locate any entity  $\mathbf{E}$  with part-whole structures within this coordinate system, consisting of a horizontal x-axis for pieces and a vertical y-axis for moments and wholes. Let's say that our *particular* red cup, as  $\mathbf{C}_{Cup}$ , consists of two material pieces: a pot and a handle. Thus it lies on the second position of the x-axis:  $x = 2$ . If it were to fall down and break into five pieces and we were still to decide to call it a cup (a ‘broken red cup’ maybe), we could locate it on the fifth position of the x-axis. The distances between the positions of the x-axis indicate how near or remote the pieces of  $\mathbf{E}$  are towards each other. But these distances do not determine any dependency relation. For every  $\mathbf{E}$  (thus for every content and for every object), every position on the x-axis could exist without any other position, just not in this or that unity relation: The

<sup>43</sup>Cf. Quine [1953: 4].

pot could exist without the handle and vice versa. To be more precise, we can say that the distance  $x = \overline{0,2}$  is the agglomerated unity relation of the distances  $x = \overline{0,1}$  (the pot) and  $x = \overline{1,2}$  (the handle). Every such distance is divisible again into smaller pieces, because the pot and the handle are breakable into, for example, half a pot, a third of a handle, etc. Now let us say that the red cup has two immediate moments: its concrete redness and its concrete shape. We therefore move to position  $\mathbf{C}_{\text{Cup}}(2,2)$ . Also the distances on the y-axis are subdivisible. But here, every sub-division is a smaller moment within a whole and therefore depends on the larger number. We can say that  $y = \overline{0,1}$  is the moment of redness and that every point between  $y > 0$  and  $y < 1$  is a shade of redness, which is itself a moment of the cup. Therefore, the shades are mediate moments of the cup.

Entities that are only considered as pieces can be located on the x-axis with  $y = 0$ , and entities that are only considered as moments without material dimension can be located on the y-axis with  $x = 0$ . But I think that these are only marginal cases. If an entity has the coordinates  $x > 0$  and  $y > 0$ , then we can take it as consisting both of pieces (as a unity relation) and of moments (as a whole). This is probably the case with most entities, both as species (objects) and as particulars (contents). Furthermore, we can integrate the eight rules given at the end of section 2.2.4 into this coordinate system. Of course, this system has to be adapted dynamically to every entity we want to determine with it. Let us adapt it to the red cup that we located at position  $\mathbf{C}_{\text{Cup}}(2,2)$ . We determined the red cup as a content, not as an object. Therefore, only rules (5)–(8) are applicable right now. Rule (5) stated that  $\mathbf{C-P-d}$  is absolutely dependent. If we take  $\mathbf{C}_{\text{Cup}}(2,2)$  as a perceptible moment (for example of a perfect breakfast), it is dependent on every other position of the coordinate system in an upwards direction.<sup>44</sup> Rule (6) stated that  $\mathbf{C-P-i}$  is dependent relative to  $\mathbf{O-W-d}$  and  $\mathbf{O-W-i}$ , but independent relative to  $\mathbf{C-W-d}$  and  $\mathbf{C-W-i}$ . If we take  $\mathbf{C}_{\text{Cup}}(2,2)$  as a piece (for example of a collection of tableware), it is only dependent on higher species (for example cups in general), but not on higher particulars, as these do not exist in the case of pieces. All particular pieces co-exist on the same line. Rule (7) stated that  $\mathbf{C-W-d}$  is absolutely dependent. If we take  $\mathbf{C}_{\text{Cup}}(2,2)$  as a whole (for example of redness and shape), it seems to be dependent on its moments. Therefore, it is dependent on every position in a downwards direction. Finally, rule (8) stated that  $\mathbf{C-W-i}$  is dependent relative to  $\mathbf{O-P-d}$ ,  $\mathbf{O-P-i}$  and  $\mathbf{C-P-i}$ , but independent relative to  $\mathbf{C-P-d}$ . If we take  $\mathbf{C}_{\text{Cup}}(2,2)$  as an agglomeration of pieces, i.e. as a unity relation, then it is dependent on every species ( $\mathbf{O}$ ) in an upwards and a downwards direction. A concrete red cup could neither exist without redness in general (downwards), nor without the category of drinking vessels (upwards). On the one hand, by being only a relation of pieces,  $\mathbf{C-W-i}$  seems to depend on the existence of the single pieces (the pot, the handle). On the other hand, being the agglomeration of pieces makes it itself a piece, which is made up of two smaller pieces. But pieces are by definition independent. If the cup falls down, breaks into five pieces and we glue it together and have the same cup again, then the cup was evidently not dependent on its two pieces ‘pot’ and ‘handle’. Therefore, the cup is independent on every position towards the left and independent relative to any further agglomeration of pieces towards the right as well as independent relative to any moments on the vertical axis. The agglomeration of pot and handle could exist even

<sup>44</sup>By being a piece on  $x = 2$ ,  $\mathbf{C}_{\text{Cup}}(2,2)$  does not depend on any other position towards the left or right. A part can only be founded by, i.e. dependent on a whole. But as I suggested that we stop talking of ‘wholes’ in the context of pieces, the dependency of moments only takes place on the y-axis.

if it were blue instead of red. Similar adaptations of the coordinate system can be made for objects instead of contents. However, it is not the development and perfect adaptation of the coordinate system itself that is the aim of this section. This coordinate system only helps us to understand, as a visual model *of* some aspects of Husserl's formal ontology, what the actual aim of this section, as a moment of this project in general, consists in. The coordinate system just outlined is thus a heuristic tool, i.e. a visual model *for* the determination of the ontological possibility of PWO on a conceptual level.

### 2.2.7 Continuity and Discontinuity: The Possibility of PWO

So far, Husserl's part-whole ontology has been valid both in a formal (**FO**) and in a material (**MO**) sense. Everything that can be said about particulars as contents has been just a specification of what counts in the case of species as objects. This basic correspondence of the a priori and the a posteriori lies at the heart of the whole 3<sup>rd</sup> LI, because on the one hand, it ensures that formal part-whole principles are not just hypothetical postulates but can be verified and exemplified in contents of empirical perception. On the other hand, this correspondence allows the empirical perception of parts and wholes to be traced back to formal principles in order to guarantee the objectivity and ontological necessity of what appears to be contingent and subjective in perception. This correspondence, however, is explicitly suspended in one case, namely in Husserl's description of what I think may be – next to his systematic terminology – one of the most fruitful aspects of his ontology beyond his own philosophy. It is the phenomenon that one and the same entity sometimes and somehow appears as a unified whole and sometimes and somehow as a diversity of moments, without being reducible to one side alone. This is what I would like to denote as 'PWO'. Husserl's short reflection on it in §§ 8 and 9 of his 3<sup>rd</sup> LI justifies once more the choice of taking his formal ontology as a starting point for the determination of the ontological nature and status of PWO. At the same time, however, Husserl's reluctance to include PWO as an a priori principle of **FO** will urge us to leave his formal system behind in order to approach the inductive method and the empirical realm, for which Husserl indeed admits – albeit not by this label – the occurrence of PWO.

How does Husserl describe PWO? When we look at the coordinate system that visualizes (and of course simplifies) Husserl's part-whole ontology, we can see two axes. The x-axis depicts pieces and their relations, while the y-axis depicts moments and wholes. We saw that the distances between two points of the same axis describe either a (agglomerated) piece on the x-axis, or a range of moments of a whole on the y-axis. But now we have to specify this picture with a distinction Husserl offers us: the distinction between *continuous* and *discontinuous* parts. Discontinuous parts are pieces, and their discontinuity consists in the fact that between each piece, there is a gap. Pieces can be separated from each other by the recognizable gap between them. Every point of the x-axis, i.e. every piece and agglomeration of pieces, is thus separated and separable from every preceding and subsequent point. The appropriate movement from one point on the x-axis to its neighboring point is a jump. "A content, accordingly, is intuitively separated in relation to other contents if it does not flow over into them without a point of difference: it can thus make itself count on its own, and stand forth independently." [id.: 14] This is different in the case of moments. Moments are continuous parts. They merge into each other, they penetrate each other. There are no gaps in the y-axis, but only gradual transitions.

Every point merges into the preceding and subsequent one, mediated by the whole they need to exist. “The intuitively unseparated content forms a whole with other coexistent contents, but is not cut off in this manner within the whole; it is not merely bound up with its associates, but blends with them.” [id.] As Husserl is here only talking about **MO**, he can rightly state that **C-P-d** ‘forms’ (i.e. *founds*) a whole, because, as we have defined in rule (7), **C-W-d** is dependent on **C-P-d**.

Now we are about to arrive at the core of the ontological possibility of PWO that is outlined in Husserl's 3<sup>rd</sup> LI. We saw that pieces are separable from the agglomerations or unity relations they may form. It is not necessary to think of or perceive the agglomeration in order to think of or perceive a single piece. For moments, on the other hand, it is necessary to think of or perceive a whole in order to think of or perceive a moment. One moment can never be there without another moment of the same whole due to the continuity the moments entail. Taken as such, the moments of a content are like arrows that shoot at each other continuously. We cannot grasp one of them without being immediately carried to another one and to another one and so forth. Nevertheless, it is possible to say that a whole includes this or that moment. It is possible to notice, for instance, that the cup is red (one moment) without any need to simultaneously notice that it is also shaped (another moment). To do so, we have to distinguish the otherwise continuous moments from the perspective of the whole in which and with which they are fused. “The non-independent moments of an intuition, are not mere parts, but in a certain (notionally immediate) manner they must also be regarded *as* parts: they cannot be separately noticed unless all the concrete contents, in which they are contained, have been stressed as wholes: this does not mean that they become *objects* in the pregnant sense of the word. A figure or colour cannot be separately noticed unless the whole object [content? M.S.], which *has* the figure or the colour, stands out in relief.” [id.: 13–4] Thus, unlike in the case of discontinuous parts, we cannot grasp a moment, i.e. we cannot say that a moment is indeed a part, unless we notice it as a part, which we paradoxically do by noticing the whole in which the moment exists. But at the same time, a whole is just a whole because it has parts, whether they are dependent or independent.

Wholes and parts are terminologically as well as ontologically correlative. Just as every moment points to a whole in order to be *distinguished as* a part and thus in order to *exist as* a part, every whole points to each of its moments in order to be *distinguished as* a whole and thus to *exist as* a whole. This happens when we try to unhinge, i.e. single out one moment of the continuity in which it is fused with the other moments and with the whole. Only then does it appear that this “fusion is not a fading into one another in the manner of the continuous, nor does it remove all separateness, but it is nonetheless a sort of peculiarly intimate mutual interconnection which must at a stroke set the whole complex of interpenetrating moments in relief, if only once a single discontinuous moment has provided the right conditions.” [id.: 16] In other words, when a whole stands out in relief (is a figure with its moments as ground), then – whether simultaneously or diachronically – the whole is backgrounded in order to foreground one or more or all of its moments, i.e. to set them into relief, only to give way again to the foregrounding of the whole etc. We should keep in mind this ongoing back-and-forth movement of foregrounding and backgrounding, because it is identifiable both in conceptual metonymy<sup>45</sup>

---

<sup>45</sup>Cf. chapter 5.



and in meaningful Gestalt perception.<sup>46</sup>

A whole is always a complex whole, because it is made up of moments. If the moments, however, were to be completely continuous and indistinguishable, then the whole would wrongly appear as simple, as an atom, as having no moments at all. A whole can only manifest its actual complexity by presenting its moments *as* moments, not or not only as an indistinguishable, unanalyzable fusion of moments. This, in turn, is only possible if at least one moment is singled out from the continuity at least temporarily, which is, however, only visible through the perspective of the whole. We go in circles here, we follow the *oscillation* back and forth. This imports that not only moments and moments, but also the whole and its moments interpenetrate each other, provided that the whole is dependent on its moments like the moments are dependent on their whole (rule 7 above). Husserl describes this interplay of part and whole already in his *Philosophy of Arithmetic*: “We grasp the quasi-qualitative character of the whole intuition as something simple, and not as a *collectivum* of contents and relations. But what is simple to our first apprehension turns out upon subsequent analysis to be something complex. [...] If we afterwards find that which originally seemed simple to be something that is in truth complex, we do not thereby apprehend it as a mere multiplicity. Complexity is not multiplicity pure and simple, but rather is a multiplicity of parts united into a whole in the narrowest sense of the word. There is therefore no disadvantage in the fact that we pick out the quasi-qualitative Moment [the whole, M.S.] in the manner of something simple, and that it nevertheless is subsequently to be analyzed into a multiplicity of parts noticeable in their own right.” [Husserl 2003: 216–7] In this regard, it may seem trivial that a content of perception can be one simple whole and a complex of moments at the same time (e.g. 1 cup = 1+n moments). However, this dynamic switching of parts and whole becomes remarkable and even wondrous when a simple whole displays different qualities than its moments, or when a complex whole is qualitatively different from itself as a simple whole. This would imply that one and the same entity comprehends different layers of qualities and meanings, sometimes even opposing ones, like when an arrangement of *round* dots forms the shape of an *angled* square and an oscillation between roundness and angularity takes place within or as one single entity. We will see many examples for this in the discussion of Gestalt theory in chapters 6 and 7.

The idea of PWO, at least as far as we can carve its primal delineations out from Husserl's formal part-whole ontology, requires a double focus. Firstly, PWO is only possible in the case of moments and wholes, not in the case of pieces and agglomerations. This is because PWO relies both on the continuity and on the discontinuity of parts. Only by mediation through a whole can parts be seen as continuous and discontinuous at the same time. Pieces, which we can also think of as material parts, do not create wholes in this sense and are not created by wholes. Ontologically, they are never continuous, but self-sufficient and independent. Even if a piece has a relation with another piece and thus establishes an aggregation, there is no oscillatory movement between the aggregation and the single pieces, because neither the aggregation, nor the single piece needs to refer to something else in order to exist. In a certain sense, aggregations of pieces are nothing but pieces in their own right. Every piece is dividable into ever smaller pieces (if it is not an atom) or aggregatable into ever bigger pieces and can therefore be considered as an aggregation as well as a piece, just as every number can be considered as a sum of smaller numbers and as a summand of bigger numbers. This act of

---

<sup>46</sup>Cf. chapter 7.

division or aggregation, however, needs to come from an external force (something breaks the cup; somebody divides the number or adds it up), whereas the fluctuation of moments and wholes is an internal process that conditions their correlation. Hence, we can state that the horizontal line of pieces involves stasis and stability, whereas what happens on the vertical line of moments and wholes should be regarded as dynamic and unstable (or, to anticipate a later characterization of PWO: multistable<sup>47</sup>) due to the fluctuation or oscillation between moments and whole. As every oscillation is, by definition, a movement, we have to focus on the y-axis, but without ignoring or neglecting the x-axis, as most or all entities we encounter in reality, depending on what we take to be real, are locatable in the ontological and perceptible area of  $x > 0$  and  $y > 0$ .

Secondly, Husserl denies that what I call PWO is an ontological category of **FO**. Instead, if we discern one moment from the perspective of the whole and therefore endow it with a perhaps instable and dynamic, but recognizable, discontinuity in order to see the whole *as* a (complex) whole and a moment *as* a moment, “we are dealing with differences of ‘subjective’, intuitive materials [*vage ‘subjektive’ Anschaulichkeit*, M.S.], which have their own remarkable peculiarities of essence, but which will not help us to grasp the universal, *ontological* difference between abstract and concrete contents, or, as we deliberately called them above, independent and non-independent contents. Our former distinction between contents separately singled out and confused background contents pivots on the facts of analysis and fusion; the contents thus separated off might as well be independent and non-independent.” [id.: 17] Thus for Husserl, it is impossible to ascribe both independence and non-independence, i.e. discontinuity and continuity, to moments if moments and, therefore, wholes are taken as **O** in **FO**. In the context of formal ontology, which is free from perception and psychological as well as phenomenological acts, moments are only continuous, just as pieces are only discontinuous. These are invariable, a priori categories that are, as ontological concepts, congruent with the fundamental structure of reality. We would confuse the formal-ontological nature of moments with their empirical nature if we were to take them to be discontinuous as well. This confusion is “done when attempts are made to base the essence of the ontological difference between *concrete* and *abstract* on phenomenological facts which concern the sphere of acts [...]. Our analyses show, however, that anything that holds water in *this* descriptive situation is mixed up with other quite alien matters, and is in any case unfitted to illuminate our ontological distinction.” [id.] For Husserl, the fact that we can discern moments from moments and in the same breath moments from the whole they rely on, thus the fact that continuity and discontinuity are given at the same time, is a contingent and empirical one. It does not lie in the ontological nature of objects to present themselves as one and many at the same time. We have to notice a perceptible whole in a certain way, with a certain intention or mindset and under variable empirical conditions, to be able to oscillate between the parts, i.e. moments, and the whole. Only as contents of perception, is PWO present,<sup>48</sup> but we are not allowed to transfer the empirical-perceptual

---

<sup>47</sup>Cf. section 7.4.

<sup>48</sup>In this regard, Husserl did not depart from his psychological stance in the *Philosophy of Arithmetic*: “We can speak of ‘multiplicity as unit’ in a yet wholly different sense, namely in the sense of ‘multiplicity as whole.’ Here the elements of the multiplicity (or the units in the number) are thought as partial representations in the psychical act which has the multiplicity for its intentional object. The interest rests upon the unifiedness [*Geeinigtsein*] of the elements or units in the representation of the multiplicity or number. But the unification comes about, as we have ascertained, only in the psychical act of interest and perception which picks out

occurrence of PWO to the realm of formal ontology and confuse it with the proper distinctions of this realm.

This second focus which the ontological determination of PWO in Husserl's 3<sup>rd</sup> LI requires is understandable if we refer back to the argument Husserl makes in suggesting what I delineated as the 'flatness' of his part-whole ontology. In this context, he claims that if for the existence of a part **P** we have to allow for the existence of a whole **W**, then we end up in an infinite proliferation of entities, as **P** and **W** need a **W'** and **W'** and **P** need a **W''** etc. in order to exist. Now if we enter, on a purely formal level, the oscillating circle of discerning moments via the whole and the whole via the moments, we would instantly fall prey to this proliferation of entities. As soon as we distinguish one moment from other moments, even if this distinction is not an isolation or separation but just the identification of this or that moment *as* a moment, we not only need to postulate a complex whole in which this identified moment stands out. We also need to postulate a simple whole (if there is one more moment) or complex whole (if there is more than one more moment) that forms the background against which the first moment stands out. If we single out another moment or other moments, we need to postulate different backgrounds, i.e. different wholes with slightly different arrangements of moments.

Furthermore, if we discern the whole in which all moments are parts, and if this whole is itself, as a complex whole, dependent on the moments it includes to be perceived as a whole with moments, then the moments themselves function as whole for the original whole that is then a part. This is because nothing can be founded except by a more embracing whole. The parts would not only have to be embraced by, but at the same time embrace the whole for it to be dependent on them. If the whole were to include its own completion from the outset, then how could it be dependent on something that it is or has in itself? Just as in a fractal, the whole would have to include moments that are, in a change of scope, a whole for it as a whole. This would not only imply an infinite proliferation of entities, but an ontological inconsistency, as moments would be wholes for the same whole in which they are moments, which is a priori unthinkable.<sup>49</sup> For every entity that switches between moments and the whole, the y-axis is constantly turned upside down and the ontological hierarchy that is typical of parts and whole constantly dissolves and re-emerges.

Thus, on a formal ontological level, the notion of PWO results in infinite regresses as well as in a fatal inconsistency. Having said that, there are no such regresses nor is there such an inconsistency on the level of perception. We can discern the red color of a cup or its shape and no second cup or any other additional entity suddenly pops up. Reality does not proliferate if we perceive an entity sometimes as complex, sometimes as simple or in any other specific way in which one or more moments stand out as moments. Furthermore, there is no inconsistency in the fact that this red cup would not be this red cup without this redness, and this redness would not be this redness without this red cup. Bot moments and moments and

---

and combines the particular contents, and also can only be perceived in reflexion upon that act. Objectively considered, every multiplicity possesses unity in this sense. It is a whole. But not always is a special interest directed upon it. It is not always thought *as* a whole. It therefore would be misleading to say: 'Every multiplicity is not merely a multiplicity, but rather a multiplicity thought as a unity [*Einheit*] . . . .' The two things must, instead, be kept clearly distinct." [Husserl 2003: 164]

<sup>49</sup>Cf. Sokolowski's [2000: 23] correspondent observation that "Moments are the kind of part that cannot become a whole." What is unthinkable in a formal sense, however, does not have to be imperceptible in an empirical sense, as the perceptual occurrence of PWO indicates.

moments and the whole are perceivable as interdependent and fused as well as distinguishable and discontinuous on the level of **MO**. Our perception of PWO is correct and consistent, whereas the formal conceptualization of PWO seems to be problematic. In the end, we may proliferate new meanings and aspects of perceptible contents, but in so doing, there simply are not *more being things* after the act of perception took place.

On the one hand, as **MO** is only a specification and instantiation of **FO** and as nothing in **MO** would be possible and actual if it were impossible in **FO**, we cannot just scratch PWO from our formal ontology, but simultaneously grant it for any material ontology. On the other hand, once we try to make sense of PWO in **FO**, we end up with infinite regresses and inconsistencies. Although it is impossible to conceptualize PWO as an a priori concept, it has to be ontologically possible and thinkable in order to be empirically possible. Like the Husserl of the *Arithmetic* writes, "No concept can be thought without foundation in a concrete intuition." [Husserl 2003: 83] For this reason, I suggest classifying PWO as *absent* in **FO**, but as *present* in **MO**. Absent does not mean impossible. It only means that we cannot conceptualize PWO; we cannot grasp it logically or formally, as this would disrupt the basic pillars of every formal ontology and every conceptual model, which are internal consistency and the avoidance of infinite regresses. We just have to *accept* and *assume* the ontological possibility of PWO as a condition for the empirical possibility and actuality of moments and wholes that are evidently both indistinguishable (continuous) and distinguishable (discontinuous). We have to *accept* and *assume* PWO as *conceptually not given*, as a logical and even ontological category that is only *present* as perceptible content, but *absent* as a conceptual, a priori object. There would be no reason for accepting and assuming PWO in **FO** if it were not evident in **MO**. But how can we perceive and experience something that is ontologically, i.e. on the level of universal forms and species, strictly impossible? Thus, there has to be a condition for the existence of PWO, as PWO does exist in perception. Whereas, as a hypothesis for now, the existence of PWO is present and given in the empirical realm such that it has a yet-to-be-determined ontological nature, the details of its existence condition are absent and cannot be conceptualized without logical fallacies. Perhaps this would require a formal part-whole *meontology*.

In any case, the absence of PWO in **FO** shows us that formal ontology, at least the Husserlian one that I decided to investigate and whose investigation has proved to be fruitful, cannot carry us any further for now. We arrived at a point where the method of conceptual analysis, the 'deductive' method as Hessen calls it, results in a formal model that points beyond itself. The development of this model has provided us with ontological categories and terminology that are indispensable for any philosophical reflection on the dynamic interplay of parts and whole. In so doing, the meta-ontological *quaestio facti* has been answered sufficiently and we have obtained a formal 'blueprint' for the further determination of PWO. However, if we are not to leave the model of **FO** behind us at this stage, the present project would have to be canceled, because a purely formal and conceptual determination of PWO disrupts the logical coherence of the model. The only alternative to the cancellation of this project is to classify PWO in **FO** as an unknown, as a process that cannot be further specified for the moment, but that seems to permit a remarkable manner in which perceptual contents are given to us. I think that Husserl is right in opposing **MO** and **FO** throughout the 3<sup>rd</sup> LI and in analyzing parts and wholes as well as their attributes on both the formal and the empirical level. In so doing, he is able to demonstrate the scope, the limits and the crossings of both realms. When we now turn to the

inductive method of ontology and proceed in a 'bottom-up' direction, it is important to keep in mind that the factual existence and appearance of PWO is in concordance with its ontological possibility. At the same time, as Husserl writes, 'it is mixed up with other quite alien matters' that have no place in an objective, formal ontology, because these matters presuppose a kind of fluctuation and a notion of absence that an ontology cannot comprise by the signification of its very name. This fluctuation *is not there* beyond what is empirically perceptible and more generally experienceable, and its conceptual presence, its a priori determinability, would make the ontological model incoherent and endow it with the sort of meaningful vagueness which we find and often benefit from, however, in subjective perception.

## 2.3 Formal-Ontological Absence Yet Perceptual Presence

Until the beginning of chapter 2, the idea of a dynamic oscillation between parts and whole within one and the same entity was only a vague notion, an initial idea in need of clarification. As a first methodological step towards clarification, I developed in the first chapter two meta-ontological criteria and tied them to two ontological methods. By applying the first method in the second chapter, we were able to unveil the first degree of vagueness the initial notion of PWO entailed. The aim of section 2.2 was to analyze the main concepts that are needed to determine the formal condition for the existence of PWO. Without a clear account of these concepts, the meta-ontological *quaestio facti* (the first criterion) would have to be left unanswered and we would not know what we are looking for if we tried to identify and justify PWO in the empirical realm. This conceptual determination of PWO therefore called for a formal, a priori ontology, which I decided to be Husserl's part-whole ontology that he prepares in his *Philosophy of Arithmetic* and elaborates in his 3<sup>rd</sup> LI. In following Simons' characterization of Husserl's 3<sup>rd</sup> LI "as being highly suggestive of possible fruitful developments" [Simons 1982: 114], I provided a reading of Husserl's text as an 'open source code' for purposes that lie outside of Husserl's own phenomenology, although the 3<sup>rd</sup> LI can be equally regarded as a formal foundation of the later LIs and Husserl's work in general.<sup>50</sup>

The main advantage of Husserl's part-whole ontology for my own project lies in the fact that Husserl's theory proves to be double-tracked instead of single-tracked. This means that instead of contenting himself with the universal level of a formal ontology, Husserl constantly opposes and compares his formal ontology with what he calls 'material ontology'. 'Material' does not mean physical here, but empirical, perceptual, psychological or even phenomenological (Husserl uses these terms interchangeably in the 3<sup>rd</sup> LI). While formal ontology is about species as universal *objects*, material ontology is about the particular instances of these species as *contents* of perception. Formal ontology consists of ontologically necessary, fundamental, but imperceptible laws, whereas the instances of material ontology are contingent, less precisely determinable, but perceptible. I take it that by developing his part-whole ontology as formal ontology and by constantly applying it to empirical instances, Husserl invites us to transfer the ontological categories he deduces from the concepts of 'part' and 'whole' to the realm of perception and to continue with the inductive method of ontology. After the transition in the next chapter, chapters 4-7 will gladly accept this invitation by turning to ordinary judgments

---

<sup>50</sup>Cf. Sokolowski [1968, 2000], Willard [1982, 2003] and Ströker [2009].



and empirical experiments concerning parts, wholes and PWO.

It would be counterproductive now to just repeat and summarize subsections 2.2.1–2.2.7 one by one, as the distinctions between parts and wholes as well as their attributes both in formal and material ontology turned out to be not only interrelated, but to be misleading as well. Instead, it is more productive to go through section 2.2 and adapt or correct the concepts we obtained in the light of this chapter as a whole and with the interpretative freedom Husserl's theory suggests. Further, I would like to get rid of the abbreviations I gradually introduced, because I think that they are stylistically and therefore heuristically disturbing for further discussions outside of the Husserlian framework. To conclude my discussion and interpretation of Husserl's 3<sup>rd</sup> LI, I rather prefer to introduce and characterize a range of technical terms in plain language with which I think Husserl's part-whole ontology can be productively continued.

To do so, let us begin with subsection 2.2.2. There we saw that in both formal and material ontology there can be simple and complex wholes and that simple wholes are atoms, while complex wholes are wholes that are divisible into parts. However, with subsection 2.2.7 in mind, it is important to distinguish between formal and material here. In formal ontology, a simple whole is indivisible into parts and therefore is an atom, which makes the term 'simple whole' contradictory (wholes are only wholes because they are correlated with their parts). We should rather speak of 'atoms' in this case. A 'complex whole' in a formal sense is – to avoid a tautology – just a whole, and – in order to avoid confusing it with a perceptual whole – I would like to neutrally call a formal whole a 'set'. In material ontology, a simple whole is not an atom, but rather a complex whole that appears as simple. A red cup is not an atom, because it has pieces and moments as parts, but it appears as one cup. We can perceive a content as a seemingly atomic unity or as a seemingly complex multiplicity of parts. There are no strict, absolute atoms or complexes (sets) in perception. Moreover, let us from now on use the term 'ontology' not only for formal ontology and the a priori domain, but also for material ontology and its empirical domain. As we saw in chapter 1, an ontological theory would be methodologically and therefore factually incomplete without reflections on the experienceability of the postulated or 'modeled' ontological concepts. Let me then outline the corrected table as follows:

		<b>Formal Ontology</b> (A Priori Reasoning)	<b>Material Ontology</b> (Empirical Perception)
<b>Entity</b>		Object	Content
<b>Part</b>		Objective Part	Perceptible Part
<b>Whole</b>	Simple	Atom	Unity
	Complex	Set	Diversity

It would also be misleading to connect the term 'whole' with the notion of independent parts and wholes, i.e. with pieces and agglomerations of pieces, as I did in subsection 2.2.3. We saw that a whole, as an additional entity, can only be thought of in the case of moments, because only moments need completion, whereas pieces neither create nor rely on such an additional entity. An agglomeration of pieces is therefore not a whole, as a whole is needed as the condition for existence for its parts (moments), while an agglomeration is not the existence condition for its parts (pieces). In a certain sense, an agglomeration of pieces is a piece itself. The material

parts of a chair are pieces, the agglomeration of these parts in a certain arrangement results in the chair, but the chair is also a piece in relation to, for example, a collection of furniture. It is as separable from this collection as its own pieces are separable from itself as a chair, which leaves open the question whether the entity 'chair' actually exists alongside and in addition to its pieces or not. Consequently, if pieces are the material parts of an entity, then moments must be the immaterial parts of it. Let us say that an entity's pieces are described by 'primary qualities' (its qualities related to its extension in space and time, such as its weight, size and duration) and moments by 'secondary qualities' (its qualities related to its being perceptible, such as its color, sound, smell, taste) as well as 'tertiary qualities' (e.g. feelings, moods, atmospheres, values, qualia). Perceptible moments, however, only cover secondary qualities, because the experience of tertiary qualities transcends purely sensory information.

		<b>Formal Ontology</b> (A Priori Reasoning)	<b>Material Ontology</b> (Empirical Perception)
<b>Entity</b>		Object	Content
<b>Part</b>	Prim. Quality	Objective Piece	Perceptible Piece
	Sec. Quality	Objective Moment	Perceptible Moment
<b>Whole</b>	of Pieces	Objective Agglomeration	Perceptible Agglomeration
	of Moments	Objective Whole	Perceptible Whole
	Simple	Atom	Unity
	Complex	Set	Diversity

In subsection 2.2.4, I talked about the Husserlian notions of relative (in)dependency and absolute (in)dependency. This means that most entities, whether ontological or perceptible, are dependent relative to some entities, while they are independent relative to other entities. Only very few entities are absolutely dependent or independent. In general, we can say that every entity in the column 'Material Ontology', i.e. every content, is dependent on every entity in the column 'Formal Ontology', i.e. on every object, but not vice versa. Contents of perception are just the instantiation of their ontological species, they are the concrete actualization of their general possibility. Without the species, the content could not exist. We can say that the formal column *supervenies* on the material column, which, in return, empirically validates what is stated as a concept in the formal column. Then we saw that pieces do not depend on their agglomerations, whereas moments do depend on their wholes. This is valid both in a priori reasoning and in empirical perception.

The question concerning relative and absolute (in)dependence is more difficult in the case of agglomerations and wholes. Everything that can be said in this case is (1) a tentative interpretation of the 3<sup>rd</sup> LI, because Husserl does not give a clear account there of whether or not and how (which) wholes are dependent on (which) parts, and (2) highly debatable. To me it seems plausible at this juncture and in the light of what has been discussed so far, that together with the unidirectional dependency relation of objects and contents, wholes are dependent on moments, while agglomerations are not dependent on pieces. Wholes are dependent on moments, because they correlate with moments. A whole without moments is either an atom and therefore not a whole, or it is a unity and therefore a *potentially complex* whole that only appears as simple in a certain perceptual perspective. This leaves the question

open whether a whole can remain identical with itself, i.e. persist, when its moments change. I will discuss this question in chapters 6 and 7 in the context of perception and transposition. An aggregation is independent relative to its pieces, because we saw that an aggregation of pieces is a piece in its own right and pieces are by definition independent. This leaves the question open whether aggregations are ontological entities that exist in addition to their pieces. However, this question does not concern me in this project, because the possibility of PWO rather points to the direction of moments and wholes.

The argumentation of subsections 2.2.5 and 2.2.6 embedded Husserl's part-whole ontology in a Cartesian coordinate system with a horizontal (flat) and a vertical (hierarchical) dimension. Pieces and aggregations belong to the horizontal axis, whereas moments and wholes belong to the vertical axis. We also saw that most entities, whether ontological or perceptible, can be located in the positive area of both axes and therefore consist of primary as well as secondary qualities. Subsection 2.2.7, however, demonstrated that the y-axis differs in the cases of formal and material ontology. In formal ontology, there are necessary, a priori laws that allocate a fixed place with immediate neighbors to every moment of an object on the y-axis in order to avoid infinite regresses and logical inconsistencies. In perception, however, we can perceive one moment  $m$  sometimes as a moment of a whole  $w$ , and the same moment  $m$  as a whole  $w'$  for the whole  $w$  that then turns into a moment  $m'$  of  $w'$ . This happens when we single out a moment in perception, which is ontologically inexplicable, because moments are a priori fused with other moments and with their whole, which makes them indistinguishable. Ontologically, moments and wholes are exclusively continuous and pieces and agglomerations are exclusively discontinuous. In perception, however, moments and wholes appear as *both* continuous *and* discontinuous. On second thoughts we could equally state that perceptible pieces and perceptible aggregations appear as *both* discontinuous *and* continuous.<sup>51</sup>

The dynamic process I am seeking to determine in this project, PWO, displays exactly this interplay of moments and whole. One and the same entity sometimes emphasizes its whole-character while at other times the individual moments that compose the whole can be glimpsed. Husserl assures us that this dynamic process is only subjective and therefore 'vague'. It has no place in a formal ontology whose laws are eternally fixed and it should not be confused with the valid difference between discernible or separable pieces and indiscernible or fused moments. But as a complete (i.e. formal *and* material) ontology would be incomplete (and therefore not universal) if it could not account for some perceptible instances like PWO, we have to assume that PWO is formal-ontologically possible without being formal-ontologically determinable. Therefore, I suggest classifying it as formal-ontologically, and in this sense logically, *absent*, while it is material-ontologically, i.e. perceptually, *present*. To be more precise, PWO happens on the vertical axis of a complete part-whole ontology, because despite the constant rotation of this axis it involves, it still relies on the interdependency and therefore on an intermittent hierarchy

---

<sup>51</sup>Aggregations can appear to us as continuous when we cannot single out the ontologically separated pieces in perception. If, ontologically, a cup has two immediate pieces (say its bowl and its handle), we often cannot tell in perception where the handle ends and the bowl begins. The pieces appear to us as fused, as continuous for empirical reasons. Therefore, we can say that like the discontinuation of perceptible moments, the continuation of perceptible pieces is ontologically not given, although somehow the fusion of pieces in perception must be ontologically *possible*, otherwise we could not have such perceptions or our perception and its content would be *impossible*, which is disproved by the undeniability of the very perception we *actually* have in this case.

of parts and wholes. This interdependency is not given in the case of pieces and agglomerations and therefore not in formal ontology, only in a material ontology of perception. By keeping this difference in mind, we can provide a first positive determination of PWO's ontological nature as it is yielded by the deductive method of a priori reasoning:

PWO<sub>ded</sub> A part-whole oscillation (PWO) is the dynamic interplay of moments and whole within the same entity. It occurs when, during the fusion (continuation) of moments and whole, both moments and whole become distinguishable (discontinuous) as well. During their continuation, moments and whole stand out alternately and the entity in question displays both the qualities of the moments and the potentially different or even contradictory qualities of the whole.

The next step for the present project is to turn to empirical cases where PWO is present in order to make any positive statements about it – if this is at all possible, of course, because until now, not only the concepts in the ontology column, but also the ones in the perception column have been just that: concepts. Simply by making the claim that the contents of some concepts are perceptible while the objects of others are not and by taking examples like a cup, a chair or a melody, it would be overly hasty to expect that we already went beyond the conceptual model. Reflecting about reality and postulating ontological concepts about its formal and material categories is not the same as directly looking at reality to justify the conceptually postulated categories and back them up via inductive reasoning. We saw that PWO is ontologically possible, but not further determinable in a formal sense. The next step is to proceed where PWO until now has only been *assumed* to be present and perceptible: to the *concrete* and *actual*, not only ontological and a priori *possible* field of perceptible moments and perceptible wholes. This indeed implies some kind of fieldwork for the philosopher, or rather – in the case of the present project – looking over the shoulders of philosophizing linguists (chapters 4 and 5) and philosophizing psychologists (chapter 6 and 7) who carried out the empirical fieldwork. What we can do is evaluate the data they obtained in their studies and accentuate their ontological significance.

Before that, however, let us complete the model with the concepts developed thus far and delineate them in the final table of this chapter, which also includes the results of the first chapter. The horizontal axis I symbolize with the arrow  $\leftrightarrow$ , which points in both directions, as the horizontal order does not existentially matter for pieces.<sup>52</sup> The vertical axis is symbolized by  $\uparrow$  (dependent on a more inclusive whole),  $\downarrow$  (dependent on moments) and  $\circlearrowleft$  (vertically oscillating). The table below summarizes the status quo of the present project as it attempts to determine the ontological nature of PWO. For now we can conclude that PWO *is formal-ontologically absent yet possible, because it is (assumed to be) empirically present*. Thus the reason for the ontological possibility of PWO is its assumed presence in perception. With ontological categories alone, at least with the ones I found in Husserl's 3<sup>rd</sup> LI, we would not arrive at a consistent notion of PWO. The ontological presence of PWO, and, with it, the positive characteristics of its ontological nature, however, has not been proven yet. This means that even the ontological possibility of PWO is built on sand as long as the ontological nature of PWO is not determined. We saw that the ontological nature of PWO is not determinable via a priori reasoning, but only by studying empirical perception. This is why we have to

---

<sup>52</sup>Cf. subsection 2.2.5 above.

turn to perception and see what we can achieve with the inductive method. In doing so, the most important point to keep in mind is that PWO consists of an interplay between perceptible parts and perceptible wholes, which are *interdependent*. Part-whole interdependency is thus a condition for the dynamic process we seek. Consequently, we have to consider empirical theories on parts and the whole, be it in ordinary language or direct perception, which deal with and ideally confirm this interdependency. This would be a promising continuation of the line of argumentation towards PWO's ontological nature. In the next chapter, however, we will see that such a continuation is not taken for granted if we consider approaches that either operate on the level of pieces and agglomerations (section 3.1) or on the level of an applied formal ontology (3.2).

		<b>Formal Ontology</b> (A Priori Reasoning)	<b>Material Ontology</b> (Empirical Perception)
	<b>Method</b>	Deductive ( <i>quaestio facti</i> )	Inductive ( <i>quaestio iuris</i> )
	<b>Entity</b>	Object	Content
<b>Part</b>	Primary Quality ( $\leftrightarrow$ )	Objective Piece	Perceptible Piece
	Secondary Quality ( $\uparrow$ )	Objective Moment	Perceptible Moment
<b>Whole</b>	of Pieces ( $\leftrightarrow$ )	Objective Agglomeration	Perceptible Agglomeration
	of Moments ( $\downarrow$ )	Objective Whole	Perceptible Whole
	Simple	Atom	Unity
	Complex	Set	Diversity
<b>PWO</b>	Moment-Whole ( $\odot$ )	absent	present