

# The Power of Husserl's *Third Logical Investigation*: Formal and Applied Mereology in *Zur Lehre von den Ganzen und Teilen*<sup>1</sup>

Alexis Delamare

*Université de Rouen / ERIAC, Universität Heidelberg*

---

**Abstract:** The peculiar legacy of Husserl's mereology, chiefly studied by analytic philosophers interested in ontology, has led to a partial understanding of the III. *LU*, which is too often reduced to a chapter of "formal ontology". Yet, the *power* of this *Investigation* goes far beyond: it enabled Husserl to deal, in the framework of a unified theory, with a vast range of particular problems. The paper focuses on one of these issues, namely *abstraction*, so as to expose how Husserl *instrumentalizes* his formal tools in order to tackle material issues. The existence of an *up and down pattern* is uncovered: Husserl first reinterprets the psychological problem of abstraction in ontological terms ("bottom-up"), before coming back to the original problem with new insights ("top-down"). The second, correlative aim of the paper is to emphasize the key role played by Friedrich Schumann, a forgotten yet crucial character for Husserl's conception of abstraction.

**Keywords:** Husserl, *Logical Investigations*, mereology, abstraction, formal ontology.

*Introduction. The legacy of the Third Investigation*

The *Third Investigation*, entitled "On the theory of wholes and parts" ("Zur Lehre von den Ganzen und Teilen"), seems to occupy a very specific place in

<sup>1</sup> The author thanks Achille Varzi for sparking his interest in contemporary mereology, Natalie Depraz, Thomas Fuchs, Mathilde Salvador for their support and help, the participants of Heidelberg online meetings for their insightful questions and remarks, as well as the two anonymous reviewers for their very helpful comments on the first draft of this work.

the organization of Husserl's *Logische Untersuchungen*<sup>2</sup> (Smith, D.W. 2003a: 25), universally acknowledged as the birth record of phenomenology. Indeed, as Husserl himself recognizes, the III. *LU*, because of its "ontological themes", cannot be regarded as "purely phenomenological" (VI. *LU*: 236 [II: 343]).

This particularity accounts for the originality of its legacy. While issues pertaining to parts and wholes seem to have entirely vanished in the phenomenological tradition<sup>3</sup>, they have been abundantly tackled by analytic philosophers<sup>4</sup>. In this framework, the *Third Investigation* is widely recognized as a pioneer work in *mereology*, which anticipates the first mathematical<sup>5</sup> accounts given in Leśniewski (1927)<sup>6</sup> and Leonard and Goodman (1940). This situation has led to a specific interpretation of this *Investigation*, since its readers were chiefly interested in the *ontological* significance of Husserl's concepts. Accordingly, they accurately emphasized the inclusion of mereology within formal ontology (Crosson 1962; Simons 1982: 115; Poli 1993; Albertazzi 1996; Smith, B. 2000, 297–298; Smith, D. W. 2003b; Varzi 2019). Yet, such reading may be too restrictive if it does not stress, at the same time, the decisiveness of Husserl's theory of wholes and parts for a great variety of *regional* or *material* issues.

The aim of this paper is thus twofold.

First, I want to emphasize the *broad spectrum* of issues tackled by Husserl in the III. *LU*. Mereology is, so to speak, a *Swiss knife* for Husserl: a *single* tool addressing a *wide range* of topics. We can even go so far as to say, with Sussbauer (1995: 30) and Drummond (2008: 120), that the III. *LU* is a requirement for the understanding of the whole Husserlian project<sup>7</sup>. Explicit or

<sup>2</sup> Thereafter *LU*. References to the *Investigations* will be displayed as follows: the number of the *Investigation* (in Roman numerals) followed by the page number of the second edition (Husserl 1913a; Husserl 1913b; Husserl 1921), with the corresponding volume and page of the English translation by Findlay (Husserl 2001) in bracket. The English translations provided will be Findlay's, except when explicitly stated.

<sup>3</sup> See for instance the works of Scheler, Heidegger, Sartre, Merleau-Ponty or Ricœur. Handbooks on phenomenology also tend to neglect Husserl's mereological inquiries (Zahavi 2018).

<sup>4</sup> In particular, the references to the III. *LU* pervade the works of the "Manchester School" of B. Smith, P. Simons and K. Mulligan. See for instance Mulligan et al. 1984.

<sup>5</sup> To avoid any ambiguity, I will reserve the term "formal" for the Husserlian notion of "formal ontology," and will not use it to depict an axiomatic theory that complies with contemporary standards of rigor. That Husserl's mereology is not formal in this latter sense is straightforward (Ginsberg 1929; Simons 1982: 114; Fine 1995: 465). This situation has led many scholars to try and mathematize the III. *LU*. See e.g. Simons 1982; Blecksmith and Null 1990; Fine 1995; Casari 2007.

<sup>6</sup> Leśniewski knew about Husserl via Twardowski, who supervised his PhD thesis (Smith, B. 1982: 182).

<sup>7</sup> Another anecdote reveals the significance of this *Investigation*. When asked in 1928 how a novice in phenomenology should enter into his work, Husserl replied that *Zur Lehre von dem Ganzen und den Teilen* was "the best starting point" (Spiegelberg 1971: 78, n. 25).

implicit references to its analyses indeed pervade his materials throughout his career: they are to be found in texts engaging with *pure grammar* (especially in the IV. *LU*)<sup>8</sup>, *ethics* (Husserl 1988: 77, 322), *theory of judgment* (Husserl 2000, XXXI: 48, 95), and, of course, *phenomenology*, as the V. *LU* suffices to show (Sokolowski 1968)<sup>9</sup>. In this paper, I will focus on one particular application, namely *abstraction*. Even though this theme has received attention in the literature (Rollinger 1993), it is too often regarded only as the *historical origin* of Husserl's formal-ontological concepts<sup>10</sup>. The fact that Husserl suggested positive, material solutions to this issue *thanks to his mereological tools* is almost always overlooked<sup>11</sup>.

The second aim of the paper is to expose the *up and down movement* that is here noticeable. The situation is actually similar to what occurred in the history of algebra: it was only thanks to the introduction of formal tools (later called *group theory*) that Galois was able to tackle the specific problem of the solvability by radicals of equations of degree 5 and more. Husserl adopts the same perspective. It is an *up and down pattern*—first, formalization, then material application—that accounts for the *power* of this *Third Investigation*, that is, the capacity of mereological concepts to sustain original viewpoints on one of the most heated debates that animated the philosophical circles at the turn of the 20<sup>th</sup> century.

Accordingly, the paper is structured in two parts. I first reconsider the inclusion of the *Third Logical Investigation* within formal ontology and thus its *intrinsic* value as an *important piece of knowledge in itself*. My aim is in particular to determine the status of mereology among other formal-ontological disciplines—a task that has not been undertaken yet in Husserlian scholarship. In the second part, I show how these formal tools obtain a new, *instrumental value* as they help Husserl to address the aforementioned issue of abstraction. On this topic, emphasis will be placed on the polemical dimensions of Husserl's positions, and more particularly on its debate with the experimental psychologist Friedrich Schumann. In the conclusion, I will briefly show to what extent the very same *up and down movement* is also manifest regarding Husserl's doctrine on *Gestalt* qualities.

<sup>8</sup> See Bar-Hillel 1957; Benoist 1997; Benoist 2002; Bundgaard 2004; Casari 2007; Drummond 2007; Byrne 2017.

<sup>9</sup> As Smith and Mulligan put it, “the project of Husserlian phenomenology can itself be described as being that of uncovering [...] the various families of dependence structures involving consciousness” (Mulligan and Smith 1988: 154). See Van Eynde 1999 on mereology applied to genetic phenomenology, and Husserl 1966: 27, 84; Huang 2020 on mereology applied to time-consciousness.

<sup>10</sup> See e.g. Fine 1995: 463; Casari 2007: 68.

<sup>11</sup> A notable exception is Mulligan and Smith 1988: 148.

## 1. *Mereology and formal ontology*

### 1.1. The historical context of the *Third Investigation* central concepts: *Selbständigkeit* and *Fundierung*

Husserl's mereology cannot be understood apart from its historical context. The latter is in fact *threefold*: Husserl rearranges issues and concepts developed by Brentano, by Stumpf, and by Meinong.

Let's start by recalling the definition of a *part* proposed by Husserl:

We may call anything a part that can be distinguished “in” an object, or, objectively phrased, that is “present” in it. A part is everything that an object “has” in a “real” (or, better, “reel”—*reellen*) sense, in the sense of something actually making it up. (III. *LU*: 228 [II: 5, trans. modified])

As Husserl himself emphasizes, “the term part is not used so widely in ordinary discourse” (III. *LU*: 228 [II: 5]). According to Husserl's concept, the red moment and the spherical form of a red ball must indeed be regarded as parts of the latter, while it is not the case in everyday language, which considers only *pieces*—like a piece of cake or a player in a team—to be actual parts of objects. Husserl's extension of the concept of part was influenced by Brentano and Stumpf.

Brentano was the first to pave the way for this generalized notion of part<sup>12</sup>. In his Würzburger metaphysics lectures of 1867, he distinguished between the *physical* and the *metaphysical* parts<sup>13</sup> of an object, the latter being in fact the determinations of the thing, such as its height or its color, that cannot be separated from the thing itself (Baumgartner and Simons 1994: 61). Husserl learnt about this distinction via Stumpf who had copies of these lectures (Münch 1997: 74), and pervasively appeals to it in his early writings<sup>14</sup>, especially in his *Habilitationschrift* (Husserl 1970: 292, 293, 324, 300, 330–334), in the *Philosophy of Arithmetic* (thereafter, *PA*) (Husserl 1970: 19, 56, 68, 71, 72, 82, 100, 152, 159, 195), and in his crucial *Psychologische Studien zur elementaren Logik* (Husserl 1979: 96–97). Yet, in the III. *LU*, it is Carl Stumpf, to whom the *Investigations* are dedicated, that is explicitly mentioned as Husserl's main source of inspiration.

As Husserl acknowledges (III. *LU*: 225 [II: 3]), it is indeed Stumpf that forged the notion of *selbständige* (“independent”) contents in his *Über den*

<sup>12</sup> Brentano's psychology, in particular his *Deskriptive Psychologie*, also applied mereological distinctions, that I cannot study in detail here due to the lack of space. See Brentano 1982: 13–15; Smith, B. 1988; Smith, B. 1992; Dewalque 2013; Fréchette 2015; Vieira 2016.

<sup>13</sup> He added to this classification a third notion of part, namely the *logical* parts: the genus is a part of the species. See Baumgartner and Simons 1994: 62.

<sup>14</sup> For other mentions, see Rollinger 1999: 150–162 and Husserl 1984a: 837–843.

*psychologischen Ursprung der Raumvorstellung* (Stumpf 1873: 109)<sup>15</sup>. Dealing with the perception of space, Stumpf emphasizes that color and extension cannot exist independently from each other, that they are, in his terminology, only “*Theilinhalte*” (“partial contents”)<sup>16</sup> and not “*selbständige Inhalte*” (“independent contents”) (Stumpf 1873: 109).

It is this Stumpfian background that enabled Husserl to build his extended notion of part, first<sup>17</sup> in 1894 (Husserl 1979: 92–100), and then in the *Third Investigation*. Here, the couple of extension and color becomes the paradigm of “non-independent” (*unselbständige*) parts, or what Husserl also calls “abstract parts” or “moments”<sup>18</sup>, as opposed to those parts (called independent [*selbständige*] parts or pieces [*Stücke*]) that can exist on their own. Following Stumpf (1873: 111; see Kaiser El-Safti 1994: 108), Husserl emphasizes that the inseparability of two non-independent contents does not rest on a subjective association and is thus to be understood, in Husserlian terms, as a (synthetic) *a priori* law, which draws solely on the ideal Species to which the particular objects belong (e. g., Color or Extension). These laws of dependence are ensured by appealing to a self-evident ideation which grasps their *ideal necessity*:

Non-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. (III. *LU*: 240 [II: 12])

However, this explicit Stumpfian background is not sufficient to fully understand the concepts used by in the III. *LU*. It must indeed be noted that the essential notion of *fundierte Inhalte* (founded contents) is not employed by Stumpf. The latter actually originates in Meinong's 1891 essay *Zur Psychologie der Komplexionen und Relationen* (Meinong 1891), where Meinong engages with von Ehrenfels' seminal paper *Über Gestaltqualitäten* (von Ehrenfels 1890). Von Ehrenfels employed the term *Grundlage* (von Ehrenfels 1890: 236) to depict the sensible elements at the base of the *Gestalt* (such as the notes of a melody). Meinong modified von Ehrenfels' terminology and decided to call this *Grundlage* “founding content” and the *Gestalt* itself “founded content”, the former being “*selbständig*”, while the latter is regarded as “*unselbständig*” (Meinong 1891: 253). As early as 1894, Husserl mentions Meinong's essay and concept (Husserl 1979: 95). However, in these *Psychologische Studien*,

<sup>15</sup> Stumpf nevertheless explicitly acknowledges his debt towards Brentano's teachings on this matter in his *Erinnerungen an Franz Brentano* Kraus 1919: 144.

<sup>16</sup> Stumpf also appeals to the term of “*psychologischen Theilen*” (Stumpf 1873: 9), by contrast with Brentano's “physical parts,” which are the independent ones.

<sup>17</sup> A first, very schematic, account of dependence is dated from 1892–1893 (Husserl 1983: 276).

<sup>18</sup> This term has a Stumpfian origin as well (Stumpf 1891: 485); (III. *LU*: 230, n. 2 [II: 349]).

Husserl focuses on Stumpf's distinction between *selbständige* contents and *Theilinhalt* while the one between "founded" and "founding" contents does not play a key role—the concept of *Fundierung* as such is not even mentioned. It is thus only in 1900–1901, after the publication of Meinong's *Beiträge zur Theorie der psychischen Analyse* in which the term *Fundierung* emerges (Meinong 1894: 380), that Husserl fully grasps the significance of this concept for his part/whole theory.

Here is Husserl's definition of foundation in the *LU*:

If a law of essence means that an A cannot as such exist except in a more comprehensive unity which associates it with an M, we say that an A as such requires foundation by an M or also that an A as such needs to be supplemented by an M. (III. *LU*: 261 [II: 25])

Importantly, such foundation may be reciprocal or one-sided<sup>19</sup>. The paradigmatic couple of color and extension exemplifies reciprocal foundation, while the foundation of a judgment or an affective act upon its underlying *Vorstellung* is a case of one-sided foundation<sup>20</sup>.

The introduction of this Meinongian concept of *Fundierung* finally allows Husserl to reformulate the concept of independence: an object *A* will be said *non-independent* if it requires a foundation, and *independent* otherwise.

## 1.2. Husserl's formalization of the concept of part

As a result of this historical inquiry, it appears that Husserl's main definitions and theses about (*in*)dependence and *foundation*, on which the entire *Investigation* is based (e.g. the definition of a *whole* (III. *LU*: 275–276 [II: 34])) essentially come from a rearrangement of Brentanian, Stumpfian, and Meinongian insights. Husserl's originality thus does not lie in the invention of the concepts at stake but, rather, on the *conversion of meaning* he achieves. We saw that Brentano and Stumpf already *generalized* the usual concept of part: they have expanded its extension, since the color of the chair or the intensity of a sound are now considered a part of these objects. Yet Husserl's operation is not a mere generalization, but must be seen, rather, as an authentic *formalization*. The §13 of the *Ideen I* emphasizes the crucial difference between *Generalisierung* and *Formalisierung* (Husserl 1982: 26). To generalize (a law, a statement, or a concept) means to successfully apply it to an extended sphere of objects. Mathematical examples are illustrative. For instance, the passage from definite integral to improper integral is a *generalization* of the latter concept to infinite

<sup>19</sup> The only mention of Brentano in the III. *LU* concerns this distinction. See Brentano 1889: 57; Brentano 1982: 12; Mulligan and Smith 1988: 148.

<sup>20</sup> This example comes from Brentano's psychology (Brentano 1973: 120).

intervals (Cauchy 1823: 93–94). The initial concept is successfully applied to new objects: its extension is wider than originally.

The operation of formalization is entirely different. A law or a concept is formalized if it is applied, not to a greater sphere of objects, but to *objects in general, to mere "somethings"*. In other terms, a concept is formalized if it is transformed into a *formal-ontological category*. Formal ontology<sup>21</sup> is indeed defined by Husserl as the science that deals with objects *qua* objects, with objects as such (*Prolegomena*: 244 [I: 153]; Husserl 1982: 20–23). This science only appeals to basic concepts whose extension is universal and not restricted to a particular region of being. The concepts of "Object", "Unity", "Number", or "Relation" are usual examples of formal categories (*Prolegomena*: 244 [I: 153]). The purpose of formal ontology is to determine, thanks to a small number of "axioms" (III. *LU*: 252 [II: 19]), the relationships between these formal concepts, and, in so doing, to depict the analytic *a priori* laws between objects as such.

It is now clear why Husserl's renewal of the mereological concepts is not a mere generalization. Husserl does not only subsume new instances under these notions, as Brentano and Stumpf did; on the contrary, he radically transforms their ontological significance. Part, whole, dependence, foundation, are not concepts that are restrained to a specific sphere of objects. It must be recalled at this point that this idea was far from being self-evident in the Brentanian school. Höfler (1890: 22), Meinong (1889: 202), and Twardowski (1894: 51) all asserted that mereological concepts were limited to *contents of presentation*. On the contrary, as soon as his 1894 initial essay, Husserl emphasizes that the concepts of parts and wholes do not primarily apply to *Vorstellungen* but to *objects* (Husserl 1979: 99)<sup>22</sup>, and are thus not limited to the material sphere of psychological acts. This is why, in the III. *LU*, mereological concepts are included in the list of formal categories: "Something, One, Object, Quality, Relation, Association, Plurality, Number, Order, Ordinal Number, *Whole, Part, Magnitude*" (III. *LU*: 252 [II: 19] – emphasis mine).

### 1.3. The intrinsic value of mereology

This inclusion of mereology within formal ontology immediately calls for a question. It seems plain that some formal categories are *posterior* to others: for instance, *number* is derived from *plurality*. This leads to the idea of a *hierarchy* between those concepts. Since Husserl agrees with Bolzano that

<sup>21</sup> The term "ontology" is scarcely used in the first edition of the *LU* (see Husserl 1929: 75; Husserl 1939: 320; Husserl 1950: 28, for Husserl's explanations), but is abundant in the second one (see e.g. III. *LU*: 225 [II, 3] and the entire §11–12). For Husserl, this is actually a means to draw a sharper line between his project of a formal ontology and Meinong's *Gegenstandstheorie*, which are too often confused (Husserl 1975: 44; Husserl 1984a: 835).

<sup>22</sup> This idea is repeated in the 1897 self-review of this text (Husserl 1979: 133, n.1). See Husserl 1984a: XLII; Willard 2003: 170.



the exposition of a theory must rest on the objective, systematic connections between the things themselves (*Prolegomena*: 15, 231–232 [I: 18, 144–145]), we are right in asking which are the highest formal categories, and which are the derived ones. Such requirement applies to mereological concepts. What is their position within formal ontology? Is mereology one of the first chapters, or only a remote, secondary section? As far as I know, this issue, despite its significance, has not been addressed in the literature.

I would like to show that mereology has actually a *fundamental status*. Such hypothesis finds its justification in the 1906/07 Logic lectures, where Husserl asserts that there is “*a natural ordering of theories and disciplines*” within pure logic (Husserl 1984b: 68–69; Husserl 2008: 66). In these lectures, Husserl appeals to a *criterion of universality* so as to uncover such ordering. Even though his only explicit use pertains to the priority of apophantic disciplines (governing the sphere of propositions) over ontological ones<sup>23</sup> (Husserl 1984b: 69; Husserl 2008: 67), it is actually possible to apply the very same criterion directly to the latter. In this perspective, the concepts of *quantity* and *number* appear to rest on the concept of *whole*, the former being based on “wholes of the same type”, and the latter on wholes which are “divisible into equal parts” (Husserl 1984b: 77–78; Husserl 2008: 75)<sup>24</sup>. As a result, the universality criterion thus leads to a hierarchy of the corresponding disciplines: mereology encompasses theory of quantity, which in turn includes arithmetic. In addition, the theory of series (and therefore ordinal theory) is also depicted by Husserl as an application of mereology (Husserl 1984b: 77; Husserl 2008: 75).

It thus appears that most areas of mathematics (geometry excepted)<sup>25</sup> are based on mereology. This relationship reveals the significance of mereology within the field of formal ontology: it is undoubtedly one of its most prominent sub-theories. In this perspective—let’s recall that formal ontology is one of the most important branches of knowledge (*Prolegomena*: 223–224 [I: 141])—mereology appears to possess an *intrinsic scientific value*.

#### 1.4. The illustrative value of mereology

Besides, mereology also contributes to *exemplify* what formal ontology is. As the *Prolegomena* acknowledge, pure logic may seem to be “an insignificant field of more or less trivial statements” (*Prolegomena*: 223–224 [I: 141]). In order to remove this “prejudice”, and to provide a more precise idea of the nature of this discipline, it is necessary to undertake “particular concrete (*sachhaltigen*) developments” (*Prolegomena*: 223 [I: 141; trans. modified]). The III. *LU* plays a key role to address this task, since the theory of parts and

<sup>23</sup> Here lies the distinction between formal ontology and pure logic (*Prolegomena*: 244 [I: 153]; Husserl 1929: 63–77). See Crosson 1962; Smith, B. 2000; Smith, D. W. 2003b.

<sup>24</sup> Such hierarchy was already defended in *PA* (Husserl 1970: 21).

<sup>25</sup> For Husserl, as for Frege (1884: 21, 101–102), geometrical axioms are “synthetic”.



wholes appears to be the most advanced of those special investigations in 1900–1901. As a result, mereology also displays an *illustrative value*, since it is, so to speak, the *cutting edge of pure logic* in the *LU*.

This illustrative value is particularly manifest regarding the *methodology* of formal ontology. The latter methodology rests upon the *intuitive presentation* of the concepts involved. As Husserl explains in the *Prolegomena*, we must accomplish an “insight into the essence” (*Prolegomena*: 244 [I: 154]) of those concepts in order to escape ambiguity and confusion, and to depict the *a priori* laws that govern them. Such methodology, famously recalled in the Introduction to the second volume—“we must go back to the ‘things themselves’” (6 [I: 168])—is precisely the procedure used in the III. *LU*. For example, the necessity for dependent parts to be supplemented by other contents “comes, by its very nature, to donation in consciousness of apodictic self-evidence” (III. *LU*: 239 [II: 12, trans. mod.]).

## 2. The application of mereological categories to the problem of abstraction

### 2.1. Introductory precisions

Yet Husserl's concepts of part and whole do not owe their worth only to their intrinsic and illustrative value. A third dimension is indeed at stake, that I would call the *instrumental* or *applied* value of mereology. In what follows, I will focus on its application pertaining to the issue of *abstraction*.

The problem of abstraction was a notable theme of research in Brentano's school, especially after Meinong's publication of his *Hume-studien* (Meinong 1877; Meinong 1882). In the *Second Investigation*, Husserl proposes a series of historical and critical comments mostly directed against nominalism. My aim is to show that Husserl's criticisms are fundamentally rooted in the formal-ontological concepts he developed in the III. *LU*.

To establish this point, I will concentrate on the dispute engaged by Husserl with Friedrich Schumann<sup>26</sup>, and especially with his paper entitled “Zur Psychologie der Zeitanschauung” (Schumann 1898)<sup>27</sup>, which played a crucial

<sup>26</sup> Schumann was the assistant of G. E. Müller—an experimental psychologist who studied with Fechner and directed Göttingen psychological laboratory—from 1888 to 1894 before becoming Stumpf's assistant at Berlin (Boring 1935). He was then one of the founders of the “Society for Experimental Psychology” (Ash 1995: 26). Among his achievements, he built a tachistoscope, a device that permits the exposition of an image during a specific duration, that was then used by Wertheimer (Ash 1995: 127).

<sup>27</sup> This paper is composed of four parts. The first, according to Schumann, is based on the notes of a conference by G. E. Müller. The last three deepen various aspects of G. E. Müller ideas. I will not distinguish here between Schumann's and Müller's contributions to this paper.

role in Meinong's elaboration of objects of higher order<sup>28</sup>. Husserl's debate with Schumann sheds light on the originality of his arguments against nominalism.

For the sake of precision and clarity, a brief remark is in order here. Husserl explores three different notions of *abstracta* in the II. *LU* (II. *LU*: 129–131 [I: 252–253]). First, one must firmly distinguish between *individual real moments* (contemporary *tropes*) with *general ideal Species* (II. *LU*: 157, 217 [I: 270, 309]; Rollinger 1993: 122). Yet individual moments are themselves of two kinds: on the one hand, the objective *abstracta*, e.g. the red color of the thing; on the other hand, the subjective, lived content whose apprehension constitutes the objectual red color. Both of these moments are real, but only the latter is *reell*, that is, immanent to consciousness, while the former is only intentional (II. *LU*: 129, 198 [I: 252, 297]). For our present concerns, one may discard the first two meanings (*Species* and objective *abstracta*), that is, one may focus only on “immanent determinations” (II. *LU*: 200 [I: 298]), and leave aside any consideration of their intentional apprehension.

## 2.2. Schumann's account of the *distinctio rationis*

Let's turn to Schumann. His paper starts by adopting a conception of abstraction that is very intimately inspired by Hume. For Hume, the distinction, in the concrete idea of a globe of white marble, between the form and the color, is only a “distinction of reason”. We do not have a genuine idea of the form or the color alone: they are “undistinguishable”. Yet, “observing afterwards a globe of black marble and a cube of white, and comparing them with our former object, we find two separate resemblances” (Hume 1960, 25). The alleged abstract idea of “white” (resp., “spherical”) is thus nothing more than the *group of resemblance* that is evoked, by association, once a white object (resp., a spherical object) is presented.

In his paper, Schumann embraces this conception of the “*distinctio rationis*” (Schumann 1898: 107):

In the simple qualities of colors, sounds, etc., various so-called modifications are distinguished in linguistic expression, such as, for example, in a sound its depth, its weakness and its softness, in a red and white shade its redness and its whiteness, and so on, although these modifications are actually nothing that can be perceived separately from those simple qualities and nothing that can be separated from each other *realiter*, and have therefore not inappropriately been described as features (*Besonderheiten*) of those qualities that exist only for a *distinctio rationis*. (Schumann 1898: 107)

<sup>28</sup> See Meinong 1899, which is explicitly presented as being a reply to Schumann's viewpoints.

Husserl cannot accept Schumann's conception of abstraction. His objections are twofold.

### 2.3. Husserl's first objection: a phenomenological mistake

The first, well-known objection is nothing but a refinement of the one he addresses to Hume. Like Hume, Schumann "substitutes" another content to the original one (II. *LU*: 197 [I: 297]): it is a *phenomenological mistake* (Smith, A. D. 2008: 96) to replace the evident content of a perception (the moment of red) with another, missing one (alleged relations of resemblance) (Rollinger 1993: 117). Yet Schumann forces Husserl to go one step further. While debating with Meumann (1893; 1894), who states that abstract parts, such as intensity, can appear in a "relative separation" (*relative Absonderung*) from the sound (Meumann 1893: 504), Schumann gives a new solution to the problem of the *distinctio rationis*. He indeed rejects Meumann's account, asserting that this would transform *abstracta* into "actual parts", "*wirkliche Theile*" (Schumann 1898: 142). Yet Meumann, according to Schumann, is not entirely wrong in observing the relative separation of the partial contents. Even though the contents themselves are not intrinsically separated, they are brought into separation by an act of *judgement*:

"To bring to consciousness in relative separation" means at first only: to judge relatively separately. If, for example, we make a judgment once only about the intensity relation, the second time only about the quality relation, the third time only about the time relation of two sensations, the content of the sensation can be exactly the same in all cases, only different judgments are evoked. (Schumann 1898: 143)

Hence, it is only in the *post hoc* act of judging that the contents, which are not "actual (*wirkliche*) partial contents" (Schumann 1898: 144) in the original phenomenon, are apparently isolated.

In the *LU*, Husserl rejects Schumann's "hypercritical" objections (II. *LU*: 200–201 [I: 298–299]). The distinction between the judgment and the experience does not preclude the former from being *true*, and this is in particular the case when it is *evident*. An evident judgement depicts the authentic state of affairs: if I judge with evidence that moments like colors or intensities do belong to my presentation—and this is the case—then I must admit that these partial contents are *actual abstract parts* of the original experience. The existence of a *post hoc* judgement thus does not modify Husserl's argument: on the contrary, the *phenomenological evidence* of the existence of immanent abstract parts is reaffirmed with more clarity.

#### 2.4. Husserl's second objection: mereological nihilism and the ruin of psychology

Let's now turn to Husserl's second objection, which is even more interesting in our perspective, and is regularly overlooked in the literature<sup>29</sup>. Husserl asserts that the radical Humean conception endorsed by Schumann "would render all psychologies impossible" (II. *LU*: 205 [301]). Why is so? Because Schumann's position actually leads to mereological "skepticism" (II. *LU*: 205 [301]), or, to put it in contemporary terms, to *mereological nihilism* (Varzi 2019): in the psychological sphere—let's recall that I here consider only the immanent, *reellen*, contents—there would be no part of any sort and consciousness would therefore be mereologically atomic. In turn, such nihilism ruins the epistemological basis of psychology, since a science of lived experiences deprived of its mereological tools is an impossible task, as the V. *LU* shows<sup>30</sup>. This consequence is obviously unacceptable: hence, Husserl's argument works as a *reductio ad absurdum* which reveals the flaws of Schumann's account.

Let's study in detail this accusation of mereological nihilism, which is thus at the core of Husserl's argument. This is assuredly not Schumann's explicit position. Even though the latter rejects the existence of *abstracta* as authentic "partial contents" (Schumann 1898: 144), he also acknowledges the existence of "actual parts" ("*wirkliche Theile*") (Schumann 1898: 130–131). Yet, Husserl emphasizes that the arguments used by Schumann to deny the existence of abstract parts *necessarily lead as well to the rejection of concrete ones*. Why is so?

#### 2.5. Schumann's principle of salience and its consequences

Schumann's main objection against the existence of *abstracta* is based on an assumption that I would call the *principle of salience*. This principle states that *being a part* means *appearing as a part in an intuitive fashion*. For Schumann, this principle originates in his faithfulness to the testimony of "internal perception" (Schumann 1898: 144): in case such salience is not found, speaking of parts is *arbitrary*.

The first application of this principle is precisely to deny the existence of *wirkliche Theilinhalt*. Indeed, the white moment of a square, for instance, is interwoven with the other contents (in particular, extension). As a result, for Schumann, if one wants to remain faithful to internal perception, what appears is uniquely the *whole phenomenon*: the abstract parts are not phenomenologically salient, since the white square is an "inseparable (*untrennbare*)" or "complete

<sup>29</sup> For instance in Smith, A. D. 2008.

<sup>30</sup> In a forthcoming paper, I demonstrate this idea at length, by showing that all the major issues raised in this latter Investigation (like the inclusion of the intentional object within the act, or the Husserlian reinterpretation of Brentano's *Vorstellungsgrundlage*) are to be understood from a mereological perspective ("The Rationalization of Consciousness", to appear in the *Bulletin d'Analyse Phénoménologique*).

(*vollständige*) unity" (Schumann 1898: 112, 130). Since *abstracta* are not salient, they should not be regarded as authentic contents at all. As we saw, for Schumann, it is only in *post hoc* judgements that these moments are relatively separated. As a result, *abstracta* are mere *fictions*, but nothing *realiter*.

Yet, the principle of salience has far-reaching consequences for concrete parts as well, and, to begin with, for intuitively undetached parts, that is, concrete parts that are fused<sup>31</sup> with others. This is for instance the case for the right part of a square which is uniformly colored. For Husserl, such part is obviously an independent one (a *concretum*) (III. *LU*: 244 [II: 14]), even though it is not separated in the phenomenon. Yet, Schumann, appealing again to the salience principle, asserts that *those undetached parts are as fictitious as are abstract ones*:

I would like to point out that an arbitrarily shaped surface of completely uniform coloration, e.g. a square one, is first of all a complete unit according to the statement of inner perception. The parts, into which one can think such a unity broken up, are fictitious (*fingierte*) parts. (Schumann 1898: 130)<sup>32</sup>

His reasoning runs entirely parallel in both cases: the undetached right part of a white square is not isolated in the original phenomenon. It is plain that I can focus my attention on this part, so it now appears as if it were isolated. Yet, Schumann understands this operation as a *modification* of the original state of affairs, which produces a new experience. On the contrary, in the primitive content, the right part is not manifest, and, in compliance with the salience principle, cannot be considered as a *wirklicher Theil* of the whole square—hence its status of fiction, of mere subjective creation.

Until now, Husserl has only followed Schumann's assertions. Yet, in the second part of §38, he goes one step further and claims that Schumann, if he remains consistent with his line of thought, should also reject the existence, "at first unassailed" (II. *LU*: 203 [I: 300]), of the detached parts. It is usually assumed that, say, a white square, is salient. Yet, is not this salience the product of some subjective activity? What really appears is the *whole visual field*: within the latter, the white square is only isolated through the subjective means of eye focus and attention. Again, the original phenomenon is transformed into a new, distinct experience. The fact that the white square is separated in this derived phenomenon does not prove that it was a *wirklicher Theil* in the first place. On the contrary, the primitive, authentic, experience was a complete, unseparated, unity. As Husserl puts it:

If we hold more strictly to the contents, then in each case the privileged content is only as surrounded by an unclear, completely chaotic mass, which is

<sup>31</sup> The concept of fusion (*Verschmelzung*) originates in Stumpf (1890: 64–65, 126–130; see Ierna 2009). It is studied by Husserl in *PA* (Husserl 1970: 206; Husserl 2003: 218) and in the §§8-9 of the III. *LU*.

<sup>32</sup> Husserl refers explicitly to this passage (II. *LU*: 203 [I: 300]).

not separated from it, but interwoven with it [*so ist jeweils der bevorzugte Inhalt nur wie mit einer von ihm nicht abgetrennten, sondern mit ihm verwobenen, unklaren, völlig chaotischen Masse umgeben*], a fringe, a “halo,” or whatever one may now call the unnameable. (II. *LU*: 204 [I: 300-301, trans. modified])<sup>33</sup>

Hence, in virtue of the salience principle adopted by Schumann, it must be concluded that even intuitively detached parts are actually *fictitious*. The very same reasoning which showed that abstract as well as undetached parts were mere fictions reveals that even the alleged isolated parts are actually fused with the total content of consciousness, and are separated only in virtue of a special subjective emphasis.

Husserl is thus entitled to complete his demonstration. Schumann’s viewpoint necessarily leads to mereological “skepticism”:

If we persist in the skeptical direction, we shall have to doubt whether there are parts of any sort; and in consequence whether there is even a plurality of concrete contents, since ultimately (if we may still presume to judge the matter) the contents which appear in co-existence and succession are always in a manner unified. (II. *LU*: 205 [I: 301])<sup>34</sup>

## 2.6. Formal ontology as the basis of Husserl’s rejection of the principle of salience

Husserl’s careful reconstruction of Schumann’s argument helps to identify the flaw in his reasoning. It is obviously the *principle of salience*, which guided his objections against both abstract and undetached parts, that is in question.

Yet, as we saw, Schumann’s defense of this principle was rooted in his will to remain faithful to internal perception and to escape arbitrariness in the partition of psychological phenomena. In this respect, *how is it possible to build a concept of parthood that avoids, at the same time, the principle of salience and arbitrariness?*

It is precisely the formal-ontological instruments of the III. *LU* that help Husserl to tackle such aporia. The major step he accomplishes here is to, so to speak, *unphenomenologize* mereological issues: to be a part is not a matter of *subjective discernability*; on the contrary, it depends only on the *objects* at stake. In particular, the phenomenological concepts of detached and undetached, fused and separated contents, and the like, must be firmly distinguished from the purely ontological notions of concrete and abstract contents (III. *LU*: 248–249 [II: 16–17]). The independence of a content does not depend in

<sup>33</sup> Findlay’s English text is here greatly misleading. Contrary to his translation, the term *nur* is not applied to the “mass,” but to the “is”: the content is (= exists) only (*nur*) as (*wie*) surrounded by the mass, by contrast with an isolated existence.

<sup>34</sup> Schumann is named as being Husserl’s target here (II. *LU*: 205, n. 1 [I: 323, n. 9]).

any way on the manner it is presented to consciousness, as isolated or fused. It is only in virtue of its nature that such-and-such object is independent or not. An object does not become non-independent because it is intuitively given as entangled with others, nor does it become independent because it is intuited separately. As a result, Husserl's mereological concepts are indifferent to "phenomenological facts" (III. *LU*: 248 [II: 17]). It is the "intrinsic nature" of the contents, but not "the manner in which they are given" (II. *LU*: 220 [I: 311]) that accounts for the difference between abstract and concrete:

No reference back to consciousness is therefore needed, no reference to differences in the "mode of presentation," to determine the difference between "abstract" and "concrete" which is here in question. All determinations which make use of such a relation, either represent an incorrect, misguided confusion with other notions of "abstract," or are merely subjectively slanted expressions of a purely objective, ideal state of affairs. (III. *LU*: 236–237 [II: 10])

Yet this ontologization of mereology, which is accompanied by its correlative formalization, as we saw in the first part, does not prevent Husserl from addressing material issues. In fact, the exact opposite is true. The formal-ontological concepts of abstract and concrete objects can be applied to immanent contents. The latter are indeed nothing more than a *special region of objects*. It is true that the region of lived experiences (*Erlebnisse*) is opposed to the region of things (*Dinge*), that psychological contents and physical bodies belong to two distinct spheres of being. Yet an "object" (*Gegenstand*) does not have to be a "thing": an immanent color or form is a genuine object, even though this may sound "disturbing" (II. *LU*: 219 [I: 310]). Husserl could not have said it more clearly: "immanent contents are only a special class of objects" (II. *LU*: 218 [I: 309]). In this respect, they are subject to the laws and concepts of formal ontology, in particular the abstract vs concrete distinction.

It is only at this stage that Husserl is able to reject Schumann's principle of salience without falling into the trap of arbitrariness. That *A* is a part of *B*, or that *A* is abstract or concrete, is only an ontological or objective matter. This still holds (since *A* and *B* can be *any* object, in virtue of the formal character of these predicates) for immanent contents, as a *materialization* of mereological concepts. There is thus no arbitrariness in the existence of mental parts, or in the abstract or concrete character of psychical contents.

As a conclusion, Husserl's debate with Schumann perfectly illustrates what I called in the introduction of the paper an *up and down movement*. The basis of the problem of abstraction is psychological; yet Husserl, in order to defend his position against empiricist objections, needs first to elevate the concepts at stake to a formal level, before coming back to the primitive issue with new, original insights. The relationship between the II. and the III. *LU* is thus now greatly clarified: the *Second Investigation* is not only the basis of the



formalization that the *Third* operates (III. *LU*: 225 [II: 3]); it actually *requires*, in its own critical perspective, its main concepts and results.

### 3. Conclusion: the up and down movement applied to Gestalt qualities

To conclude this paper, I would like to show that the *up and down movement* that was unveiled in connection with Husserl's treatment of abstraction is also reproduced in connection with another very important issue at stake in the III. *LU* that has not been mentioned yet, namely the one of *Gestalt* qualities<sup>35</sup>. In fact, Husserl's replicates, vis-à-vis the issue of *synthesis*, the very process of *unsubjectivization* that we studied for *analysis*.

His main discussion on this subject is with Meinong. We saw that Husserl takes up Meinong's vocabulary of founded and founding contents. Yet, this fact must not conceal the essential differences between their accounts. It is well known that von Ehrenfels, in his seminal paper on *Gestaltqualitäten*, depicted such quality (e.g., a melody) as being a "positive element of presentation" (von Ehrenfels 1890: 262) irreducible to the mere sum of the sensations at its base (von Ehrenfels 1890: 250). Yet he remained ambiguous (Fisette and Fréchette 2007: 90) on one of the most problematic issues, that later led to the division between the Graz and the Berlin schools: is the Gestalt quality *given* in the presentation, as a sensed quality, or is it the result of an intellectual *production*?

For Meinong, as is well known, the latter option must be embraced. The form is not "given with" its basis, but is the "product" of a specific "generation" (*Hervorbringung*) (Meinong 1891: 247). He reasserts this position in 1894, stating that an "psychical act of synthesis" is required to obtain the presentation of a plurality (Meinong 1894: 366; Fisette and Fréchette 2007: 104).

Husserl, even though he acknowledges—in fact independently from von Ehrenfels<sup>36</sup>—the existence of *Gestalt* qualities (that he labels "figural moments" in *PA*) (Husserl 1970: 203; Husserl 2003: 215), cannot agree with Meinong's account. Contrary to mere collections, which are purely "categorical forms", wholes like melodies are "sensuous" (III. *LU*: 282 [II: 38]). This implies, for Husserl, that they are not produced by specific acts of the understanding—as opposed to the categorial apprehension of aggregates—but are immediately sensed like qualities. Yet, in this context, if not an intellectual synthesis, what does account for the unity of these wholes? What is the difference between the isolated, separated existence of people (a mere *sum*) and their unification into *one* crowd?

<sup>35</sup> It must indeed be noted that Schumann's paper, even though it is officially presented as a study of time consciousness, is first and foremost directed against von Ehrenfels' concept of *Gestaltqualitäten* (Schumann 1898: 114).

<sup>36</sup> According to Husserl, it is the common influence of Mach (1886) that explains the proximity of their investigations (Husserl 1970: 210–211; Zimmer 2001; Ierna 2009).

Here the mereological concepts of the III. *LU* enter the scene: for independent parts (people, for instance) to be gathered into a whole, a specific “moment of unity” is required in addition to the primary constituents (III. *LU*: 234 [II: 8]). This moment is itself an actual part of the whole. Yet it is precisely a *non-independent one*: the moment of unity is *founded* on the basic contents as their “combinatory form” (III. *LU*: 278 [II, 35]). Hence Husserl’s formal definition of a whole—“a range of contents which are all covered by a unitary foundation without the help of further contents” (III. *LU*: 275-276 [II, 34, trans. modified])—is fulfilled (Vassiliou 2010: 423), and this suffices is enough to account for the whole-ness of the crowd, the melody, and the like, without appealing to Meinong’s production theory<sup>37</sup>.

It thus appears that the issues of abstraction and *Gestalt* qualities are treated in a parallel manner by Husserl. In both cases, we observe an *unsubjectivization* of the fundamental concepts and theses, then followed by a reintroduction of these newly formed ontological notions into the original, psychological field. Regarding abstraction, this unsubjectivization was achieved through the rejection of Schumann’s salience principle and his distinction between actual and fictitious parts; regarding *Gestalt* qualities, through the denial of Meinong’s production theory. In the first case, it is the existence and the nature of *parts* that no longer refer to psychological contingencies; in the second case, it is the existence and the nature of *wholes* that no longer depend on subjective activities. It is only in virtue of such formal-ontological reassessment that Husserl is able, in a second moment, to address the initial psychological issues at stake.

As a result, Husserl’s mereology owes a significant part of its value to its applications. It is not only a substantial piece of knowledge in itself, or a concrete illustration of what formal ontology should be. It is also an essential, operational instrument to propose fresh interpretations on traditional issues, in particular in the field of psychology. The existence of this *up and down movement* of formalization and materialization is thus not paradoxical: rather, the ascent to formality and the descent to materiality go hand by hand.

**Alexis Delamare**

Université de Rouen-Normandie  
Département de Philosophie,  
UFR Lettres et Sciences Humaines  
1 Rue Lavoisier  
76130 Mont-Saint-Aignan  
France  
alexis.delamare5@univ-rouen.fr

<sup>37</sup> It must also be noted that, in so doing, Husserl avoids Twardowski’s “queer” (III. *LU*: 280 [II: 37]) mereological infinite regression (Twardowski 1977: 56; Rosiak 1998): there is indeed no further connection needed between the moment of unity and the independent parts. This moment is founded on the latter, and such foundation suffices to account for the global unity.

**Works cited:**

- Prolegomena* = Husserl, Edmund. 1913a. *Logische Untersuchungen. I: Prolegomena zur reinen Logik* (2nd ed.). Halle: Max Niemeyer.
- LU = Husserl, Edmund. 1913b. *Logische Untersuchungen. II.1: Untersuchungen zur Phänomenologie und Theorie der Erkenntnis*. 2nd ed. Halle: Verlag von Max Niemeyer; Husserl, Edmund. 1921. *Logische Untersuchungen. II.2: Elemente einer Phänomenologischen Aufklärung der Erkenntnis* (2nd ed.). Halle: Max Niemeyer. [English transl.: Husserl, Edmund. 2001. *Logical Investigations*. (2nd ed.) 2 vols., tr. J. N. Findlay. London, New York: Routledge].
- PA = Husserl, Edmund. 1970. *Philosophie der Arithmetik* (Hua 12), ed. Lothar Eley. Den Haag: Martinus Nijhoff. [English transl.: Husserl, Edmund. 2003. *Philosophy of Arithmetic. Psychological and Logical Investigations with Supplementary Texts from 1887–1901*. Dordrecht: Springer.]
- Albertazzi, Liliana. 1996. Formal and material ontology. In *Formal Ontology*, ed. Roberto Poli, Peter Simons, 199–232. Dordrecht: Springer.
- Ash, Mitchell G. 1995. *Gestalt psychology in German culture, 1890–1967: Holism and the quest for objectivity*. Cambridge: Cambridge University Press.
- Bar-Hillel, Yehoshua. 1957. Husserl's conception of a purely logical grammar. *Philosophy and Phenomenological Research* 17: 362–369.
- Baumgartner, Wilhelm & Simons, Peter. 1994. Brentano's mereology. *Axiomathes* 5: 55–76.
- Benoist, Jocelyn. 1997. *Phénoménologie, sémantique, ontologie*. Paris: Presses universitaires de France.
- Benoist, Jocelyn. 2002. The Question of Grammar in Logical Investigations, with Special Reference to Brentano, Marty, Bolzano and Later Developments in Logic. In *Phenomenology World-Wide: Foundations — Expanding Dynamics — Life-Engagements. A Guide for Research and Study*, ed. A. Ales Bello et al., 94–97. Dordrecht: Springer.
- Blecksmith, Richard, and Gilbert Null. 1990. Matrix Representation of Husserl's Part-Whole-Foundation Theory. *Notre Dame Journal of Formal Logic* 32: 87–111.
- Boring, Edwin G. 1935. Georg Elias Müller: 1850-1934. *The American Journal of Psychology* 47: 344–348.
- Brentano, Franz. 1889. *Vom Ursprung Stittlicher Erkenntnis*. Leipzig: Duncker & Humblot.
- Brentano, Franz. 1973. *Psychologie vom empirischen Standpunkt*, ed. Oskar Kraus. Vol. I. Hamburg: Meiner.
- Brentano, Franz. 1982. *Deskriptive Psychologie*. Hamburg: Felix Meiner Verlag.
- Bundgaard, Peer F. 2004. Configuration sémantique et combinaison syntaxique dans la IVe Recherche logique de Husserl. *Recherches husserliennes* 21: 1–33.
- Byrne, Thomas. 2017. The Dawn of Husserl's Pure Logical Grammar: Husserl's Study of Inauthentic Judgments from "On The Logic Of Signs" as the Germ of the "Fourth Logical Investigation." *Studia Phaenomenologica* 17: 285–308.

- Casari, Ettore. 2007. On the Relationship Between Parts and Wholes in Husserl's Phenomenology. In *Rediscovering Phenomenology. Phenomenological Essays on Mathematical Beings, Physical Reality, Perception and Consciousness*, ed. L. Boi, P. Kerszberg, and F. Patras, 67–102. Berlin: Springer.
- Cauchy, Augustin-Louis. 1823. *Résumé des leçons données à l'École royale polytechnique sur le calcul infinitésimal*. Paris: Gauthier-Villars.
- Crosson, Frederick James. 1962. Formal logic and formal ontology in Husserl's phenomenology. *Notre Dame Journal of Formal Logic* 3: 259–269.
- Dewalque, Arnaud. 2013. Brentano and the parts of the mental: a mereological approach to phenomenal intentionality. *Phenomenology and the cognitive sciences* 12: 447–464.
- Drummond, John J. 2007. Pure logical grammar: Identity amidst linguistic differences. In *Husserl's Logical Investigations in the new century: Western and Chinese perspectives*, ed. John J. Drummond, 53–66. Springer.
- Drummond, John J. 2008. Wholes, Parts, and Phenomenological Methodology (III. Logische Untersuchung). In *Edmund Husserl. Logische Untersuchungen.*, ed. Verena Mayer, 105–122. Berlin: Akademie Verlag.
- von Ehrenfels, Christian. 1890. Über Gestaltqualitäten. *Vierteljahrsschrift für wissenschaftliche Philosophie* 14: 249–292.
- Fine, Kit. 1995. Part-whole. In *The Cambridge Companion to Husserl*, ed. Barry Smith and David Woodruff Smith, 463–486. Cambridge: Cambridge University Press.
- Fisette, Denis, and Guillaume Fréchette. 2007. Le legs de Brentano. In *À l'école de Brentano. De Würzburg à Vienne*, ed. Denis Fisette and Guillaume Fréchette 13–160. Paris: Vrin.
- Fréchette, Guillaume. 2015. Stumpf on abstraction. In *Philosophy from an empirical standpoint: Essays on Carl Stumpf*, ed. Denis Fisette and Riccardo Martinelli, 263–292. Brill Rodopi.
- Fréchette, Guillaume. 2015. Stumpf on abstraction. In *Philosophy from an empirical standpoint: Essays on Carl Stumpf*, 263–292. Brill Rodopi.
- Frege, Gottlob. 1884. *Die Grundlagen der Arithmetik: eine logisch mathematische Untersuchung über den Begriff der Zahl*. Breslau: W. Koebner.
- Ginsberg, Eugenia. 1929. Zur Husserlschen Lehre von Ganzen und Teilen. *Archiv für systematische Philosophie und Soziologie* 32: 108–120.
- Höfler, Alois. 1890. *Philosophische Propädeutik., I. Theil: Logik*. Wien: F. Tempsky.
- Huang, Di. 2020. A Mereological Perspective on Husserl's Account of Time-Consciousness. *Husserl Studies* 36: 141–158.
- Hume, David. 1960. *A Treatise of Human Nature*, ed. L. A. Selby-Bigge. Oxford: Clarendon Press.
- Husserl, Edmund. 1929. *Formale Und Transzendente Logik. Versuch einer Kritik der logischen Vernunft*. Halle: Max Niemeyer.
- Husserl, Edmund. 1939. Entwurf einer "Vorrede" zu den "Logischen Untersuchungen" (1913) (II), ed. Eugen Fink. *Tijdschrift voor Philosophie* 1: 319–339.
- Husserl, Edmund. 1950. *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie. Erstes Buch: allgemeine Einführung in die reine Phänomenologie* (Hua 3), ed. Walter Biemel. Den Haag: Martinus Nijhoff.

- Husserl, Edmund. 1966. *Zur Phänomenologie des inneren Zeitbewusstseins (1893–1917)* (Hua 10). ed. Rudolf Boehm. Den Haag: Martinus Nijhoff.
- Husserl, Edmund. 1975. *Introduction to the Logical Investigations: A draft of a preface to the logical investigations (1913)*. The Hague: Martinus Nijhoff.
- Husserl, Edmund. 1979. *Aufsätze und Rezensionen (1890–1910)* (Hua 22). The Hague: Martinus Nijhoff.
- Husserl, Edmund. 1982. *Ideas pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*, tr. F. Kersten. The Hague: Martinus Nijhoff.
- Husserl, Edmund. 1983. *Studien zur Arithmetik und Geometrie (1886–1901)* (Hua 21), ed. Ingeborg Strohmeier. The Hague: Martinus Nijhoff.
- Husserl, Edmund. 1984a. *Logische Untersuchungen. Zweiter Band. Untersuchungen zur Phänomenologie und Theorie der Erkenntnis* (Hua 19). 2 vols, ed. Ursula Panzer. The Hague: Martinus Nijhoff.
- Husserl, Edmund. 1984b. *Einleitung in die Logik und Erkenntnistheorie. Vorlesungen 1906–1907* (Hua 24), ed. Ullrich Melle. Dordrecht: Martinus Nijhoff/Kluwer.
- Husserl, Edmund. 1988. *Vorlesungen über Ethik und Wertlehre (1908–1914)* (Hua 28), ed. Ullrich Melle. Dordrecht: Kluwer Academic Publishers.
- Husserl, Edmund. 2000. *Aktive Synthesen: Aus der Vorlesung “Transzendente Logik” 1920/21* (Hua 31). Dordrecht: Springer.
- Husserl, Edmund. 2008. *Introduction to Logic and Theory of Knowledge: Lectures 1906/07*, tr. Claire Ortiz Hill. Springer.
- Ierna, Carlo. 2009. Husserl et Stumpf sur la Gestalt et la fusion. *Philosophiques* 36. Société de philosophie du Québec: 489–510.
- Kaiser El-Safti, Margret. 1994. Carl Stumpfs Lehre vom Ganzen und den Teilen. *Axiomathes* 5. Springer: 87–122.
- Kraus, Oskar. 1919. *Franz Brentano: zur Kenntnis seines Lebens und seiner Lehre*. Beck.
- Leonard, Henry S., and Nelson Goodman. 1940. The calculus of individuals and its uses. *The Journal of Symbolic Logic* 5: 45–55.
- Leśniewski, Stanisław. 1927. O podstawach matematyki. *Przegląd Filozoficzny* 30: 164–206.
- Locke, John. 1975. *An Essay Concerning Human Understanding*, ed. Peter Harold Nidditch. Clarendon Press.
- Mach, Ernst. 1886. *Beiträge zur Analyse der Empfindungen*. Jena: G. Fischer.
- Meinong, Alexius. 1877. *Hume-Studien I. Zur Geschichte und Kritik des modernen Nominalismus*. Vol. 1. Wien: Karl Gerold's Sohn.
- Meinong, Alexius. 1882. *Hume-Studien II: Zur Relationstheorie*. Karl Gerold's Sohn.
- Meinong, Alexius. 1889. Phantasievorstellung und Phantasie. *Zeitschrift für Philosophie und philosophische Kritik* 95: 161–244.
- Meinong, Alexius. 1891. Zur Psychologie der Komplexionen und Relationen. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane* 2. L. Voss: 245–265.
- Meinong, Alexius. 1894. Beiträge zur Theorie der psychischen Analyse. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane* 6: 340–385; 417–455.
- Meinong, Alexius. 1899. Über Gegenstände höherer Ordnung und deren Verhältnis zur inneren Wahrnehmung. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane* 21: 182–320.

- Meumann, Ernst. 1893. Beiträge zur Psychologie des Zeitsinns. *Philosophische Studien* 8: 431–509.
- Meumann, Ernst. 1894. Beiträge zur Psychologie des Zeitsinns. *Philosophische Studien* 9: 264–306.
- Mulligan, Kevin, Peter Simons, and Barry Smith. 1984. Truth-makers. *Philosophy and phenomenological research* 44. JSTOR: 287–321.
- Mulligan, Kevin, and Barry Smith. 1988. Mach and Ehrenfels: the Foundations of Gestalt Theory. In *Foundations of Gestalt theory*, ed. Barry Smith, 124–157. München; Wien: Philosophia Verlag.
- Münch, Dieter. 1997. Franz Brentano and phenomenology. In *Encyclopedia of Phenomenology*, 71–75. Dordrecht: Kluwer.
- Poli, Roberto. 1993. Husserl's conception of formal ontology. *History and Philosophy of Logic* 14: 1–14.
- Rollinger, Robin D. 1993. *Meinong and Husserl on abstraction and universals: From Hume studies I to Logical Investigations II*. Amsterdam: Rodopi.
- Rollinger, Robin D. 1999. *Husserl's Position in the School of Brentano*. Vol. 150. Dordrecht: Springer.
- Rosiak, Marek. 1998. Twardowski and Husserl on Wholes and Parts. In *The Lvov-Warsaw School and Contemporary Philosophy*, ed. Katarzyna Kijania-Placek and Jan Woleński, 85–100. Dordrecht: Springer.
- Schumann, Friedrich. 1898. Zur Psychologie der Zeitanschauung. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane* 17: 106–148.
- Simons, Peter. 1982. The Formalisation of Husserl's Theory of Wholes and Parts. In *Parts and moments. Studies in Logic and Formal Ontology*, ed. Barry Smith, 113–159. München, Wien: Philosophia Verlag.
- Smith, Arthur David. 2008. The Critique of Empiricist Accounts of Abstraction (II. Logische Untersuchung, §§ 13–42). In *Edmund Husserl. Logische Untersuchungen*, ed. Verena Mayer, 93–104. Berlin: Akademie Verlag.
- Smith, Barry, ed. 1982. *Parts and moments*. München, Wien: Philosophia Verlag.
- Smith, Barry. 1988. The Soul and Its Parts I: A Study in Aristotle and Brentano. *Brentano Studien* 1: 75–88.
- Smith, Barry. 1992. The Soul and Its Parts II: Varieties of Inexistence. *Brentano Studien* 4: 35–51.
- Smith, Barry. 2000. Logic and formal ontology. *Manuscrito: Revista Internacional de Filosofia* 23: 275–324.
- Smith, David Woodruff. 2003a. The Unity of Husserl's Logical Investigations: Then and Now. In *Husserl's Logical Investigations Reconsidered*, ed. Denis Fisette, 21–34. Dordrecht: Springer.
- Smith, David Woodruff. 2003b. "Pure" Logic, Ontology, and Phenomenology. *Revue internationale de philosophie* 224: 21–44.
- Sokolowski, Robert. 1968. The logic of parts and wholes in Husserl's investigations. *Philosophy and Phenomenological Research* 28: 537–553.
- Spiegelberg, Herbert. 1971. From Husserl to Heidegger: Excerpts from a 1928 Freiburg Diary by W.R. Boyce Gibson. *Journal of the British Society for Phenomenology* 2: 58–83.



- Stumpf, Carl. 1873. *Ueber den psychologischen Ursprung der Raumvorstellung*. Leipzig: S. Hirzel.
- Stumpf, Carl. 1890. *Tönpsychologie*. Vol. 2. Leipzig: Hirzel.
- Stumpf, Carl. 1891. Psychologie und Erkenntnistheorie. In *Abhandlungen der Königlich Bayerischen Akademie der Wissenschaften* 19(2): 465–516.
- Sussbauer, Alfons. 1995. *Intentionalität, Sachverhalt, Noema: Eine Studie zu Edmund Husserl*. München: Alber.
- Twardowski, Kasimir. 1894. *Zur Lehre vom Inhalt und Gegenstand der Vorstellungen: eine psychologische Untersuchung*. Wien: Hölder.
- Twardowski, Kasimir. 1977. *On the Content and Object of Presentations: a Psychological Investigation*. Dordrecht: Springer.
- Van Eynde, Laurent. 1999. Husserl et la reprise génétique de la méréologie. *Tijdschrift voor Filosofie* 61(4): 697–727.
- Varzi, Achille. 2019. Mereology. In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Spring 2019. Metaphysics Research Lab, Stanford University.
- Vassiliou, Fotini. 2010. The Content and Meaning of the Transition from the Theory of Relations in Philosophy of Arithmetic to the Mereology of the Third Logical Investigation. *Research in phenomenology* 40: 408–429.
- Vieira, Flávio Curvello. 2016. Franz Brentano's mereology and the principles of descriptive psychology. *Dialogue and Universalism* 26 (3): 109–123.
- Willard, Dallas. 2003. The Theory of Wholes and Parts and Husserl's Explication of the Possibility of Knowledge in the *Logical Investigations*. In *Husserl's Logical Investigations Reconsidered*, ed. Denis Fisette, 163–181. Dordrecht: Springer.
- Zahavi, Dan. 2018. *The Oxford Handbook of the History of Phenomenology*. Oxford: Oxford University Press.
- Zimmer, Alfred. 2001. Christian von Ehrenfels (1859–1932). In *The School of Alexius Meinong*, ed. Roberto Poli, Liliana Albertazzi, and Dale Jacquette, 135–143. Aldershot: Ashgate.