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Frege on Multiple Analyses and the Essential Articulatedness of Thought

Silver Bronzo

Frege appears to hold both (a) that thoughts are internally articulated, in a way that mirrors the semantic articulation of the sentences that express them, and (b) that the same thought can be analyzed in different ways, none of which has to be more fundamental than the others. Commentators have often taken these theses to be mutually incompatible and have tended to polarize into two camps, each of which attributes to Frege one of the theses, but maintains that he is only *apparently* committed to the other. This paper argues (i) that there are good exegetical and philosophical reasons for reconciling the two theses; (ii) that this reconciliation can be achieved by rejecting an assumption shared by the two opposite camps of the exegetical debate, i.e., the assumption that essential articulatedness implies unique articulation; and finally (iii), that this crucial assumption can be resisted by appreciating Frege's anti-atomistic and 'organic' conception of the internal complexity of thoughts.

Frege on Multiple Analyses and the Essential Articulatedness of Thought

Silver Bronzo

1. The Problem

On the face of it, Frege is committed to two theses about thoughts and sentences. The first thesis, which I shall call the *Articulation Thesis*, states that thoughts are articulated into parts that correspond, by and large, to the grammatical parts of the sentences that express them. As Frege puts it,

We can regard a sentence as a mapping of a thought: corresponding to the whole-part relation of a thought and its parts we have, by and large, the same relation for the sentence and its parts. (Frege 1919, 275, translation 255; see also 1914a, 224, 243, 262, translation 207–08, 225, 243; 1914b, 127–28, translation 320; 1918b, 148, translation 351; 1923, 36, translation 390; 2004, 87)

For Frege, a meaningful sentence is generally a logically complex sign: it is composed of parts (words or phrases) that have senses (and possibly references) of their own. The senses expressed by the parts of the sentence are *parts* of the sense expressed by the whole sentence, which for Frege is a *thought*. In this way, the part/whole structure of a sentence mirrors in general the part/whole structure of the corresponding thought.

The second thesis, which I shall call the *Multiple Analyses Thesis*, states that the same thought can be ‘split up’ or ‘analyzed’ or ‘decomposed’ or ‘carved up’ in many ways, none of which has to be more fundamental than the others.¹ In Frege’s words,

¹The verbs that Frege uses in this connection are *zerfallen* and *zerlegen*, which are variously translated as ‘splitting up’, ‘analyzing’, or ‘decomposing’, and *zerspalten*, which is generally translated as ‘carving up’.

We must notice . . . that one and the same thought can be split up in different ways and so can be seen as put together out of parts in different ways. (Frege 1906, 218, translation 201–02; see also 1892b, 199, translation 188)

The same thought can result from the combination of different thought-constituents, i.e., different sub-sentential senses. The analysis of a thought into its parts is not unique: the same thought can be analyzed into different sets of sub-sentential senses. We can also say: sentences with different semantic structures can express the same thought, where two sentences have different semantic structures if they are not composed of expressions with the same senses put together in the same way. The idea that no way of analyzing a thought needs to have a privileged status over the others is not explicitly stated in the quotation I gave or in other similar passages, but it can be seen to follow from some of Frege’s examples (which will be examined in detail in the [next section](#)).

These formulations of the two theses are framed in terms of Frege’s mature semantic view, which is informed by the sense/reference distinction. According to Frege’s earlier view, complete sentences express ‘judgeable contents’, and their fundamental parts denote ‘objects’ and ‘concepts’. Within this earlier framework, the first thesis would be recast as the claim that a judgeable content is composed of parts (i.e., concepts and objects) that correspond, by and large, to the parts of the sentence that expresses it, and the second thesis as the claim that the same judgeable content can be split up in many ways, none of which has to be more fundamental than the others. There are indeed passages in Frege’s early writings that appear to express quite explicitly this latter formulation of the Multiple Analyses Thesis. For example, he states:

I do not believe that for any judgeable content there is only one way in which it can be decomposed, or that one of these possible

ways can always claim objective preeminence. (Frege 1882, 164, translation 81)²

Early Frege does not state as explicitly that a judgeable content is composed of objects and concepts in a manner that mirrors the composition of the corresponding sentence, but such a view can be plausibly seen to follow from some of the ways in which he characterizes judgeable contents. In §2 of 1879, for example, Frege describes a judgeable content as a ‘complex of ideas’, where the term ‘idea’, in this very early work, denotes the content of a sub-sentential expression, i.e., an object or a concept. The natural implication is that judgeable contents have objects and concepts as their constituent parts. Moreover, in 1880–81 (17, translation 16), Frege argues that a content of possible judgment can be ‘split into a constant and a variable part’, i.e. (in the simplest case) into an object and a concept. This suggests that he treats concepts and objects as *parts* of judgeable contents, and it is clear from his procedure that he takes the segmentation of a judgeable content to mirror the logical segmentation of the corresponding sentence.

Many of Frege’s most distinguished commentators have thought that the two theses, taken as they stand, are mutually incompatible. Accordingly, it has seemed that a sympathetic interpretation should show that Frege is not *really* committed to both theses. The debate, then, has tended to polarize into two camps. Each camp argues that Frege subscribes only to one of the theses, and merely *appears* to subscribe to the other. The two camps differ because they implement this exegetical schema in opposite ways. I shall refer to one of these camps as the *Dummettian Camp*, because it has been most forcefully championed

²See also Frege (1879, §9, translation 66–69); (1884, §64, translation 75). Further evidence that early Frege does not think that there must be a unique *ultimate* analysis of each judgeable content, having absolute priority over all the others, is provided by some of the examples that he discusses, which will be examined in the [next section](#).

by Michael Dummett; the opposite camp I shall simply call the *Anti-Dummettian Camp*, because it has tended to develop as a reaction against Dummett’s interpretation. The two camps may be characterized as follows:

The Dummettian Camp. Frege endorses the Articulation Thesis, but is not really committed to the Multiple Analyses Thesis. Thoughts are articulated into parts, in a way that mirrors the internal articulation of the sentences that express them; but each thought is articulated in a *unique* way. Sentences with different semantic structures cannot express the same thought.

The Anti-Dummettian Camp. Frege endorses the Multiple Analyses Thesis, but is not really committed to the Articulation Thesis. Thoughts can be analyzed in many ways, because they are in themselves *inarticulate*. Thoughts, as unstructured wholes, cannot mirror the semantic structure of the sentences that express them.

In this paper, I will examine Dummett’s position as well as two different proposals that belong to the opposite camp—namely the interpretations advanced by Hans Sluga and David Bell. I will also discuss the interpretation proposed by Peter Geach, arguing that it oscillates unstably between the Dummettian and Anti-Dummettian camp. This exercise has two aims. First, it aims to show that there are good exegetical and philosophical reasons for reconciling the two theses. I will criticize attempts on each side of the debate to explain away or downplay the textual evidence that Frege is committed to both theses. Moreover, I will show that each side of the debate has provided good philosophical reasons for upholding each thesis. Dummett has offered powerful arguments in support of the Articulation Thesis, hinging on considerations about what it is to speak a *language* and to express a *thought* (in the full sense of each term), and about what it is to *express* a thought (as opposed to merely *encoding*

or *referring* to it). Commentators of the opposite camp, on the other hand, have pointed out that only philosophical prejudice can lead one to deny the Multiple Analyses Thesis, because the thesis amounts to the truism that we can, indeed, *say the same thing in different ways*. A reconciliation of the two theses, therefore, would not only enable us to make best sense of Frege's texts as they stand, but would also amount to a philosophical achievement in its own right.

The second aim of the following examination of the debate between Dummett and his opponents is to show that it has been informed by a crucial but unexamined assumption:

The Underlying Assumption. If internal articulation is essential to thoughts, then there must be *one* articulation which is the single and unique articulation of each thought. Conversely, if each thought can be articulated in more than one way (none of which has to be more fundamental than the others), then it must be intrinsically *inarticulate*.

It is the allegiance to this assumption that forces each camp of the debate to believe that the two theses are mutually incompatible. But the assumption, I will argue, can be resisted. It is compulsory if one conceives of thoughts as aggregates of atomistically independent components. But this is not the only option. One can also conceive of thoughts as *organic unities* that are indeed articulated into parts, but by parts that are individuated by the *function* that they perform within the whole. I will argue that when the relationship between a thought and its parts is construed on this model, the Underlying Assumption ceases to be compulsory and one becomes entitled to the simultaneous assertion of the two theses. I will also give independent reasons for thinking that Frege does in fact conceive of thoughts as organic unities. My suggestion, therefore, will be that by construing thoughts as organic unities, Frege can coherently accept both

theses and vindicate in this way the philosophical insights that animate the two opposite camps of the exegetical debate.³

2. Frege on Multiple Analyses: Five Kinds of Candidate Cases

Frege's works contain discussions of several different kinds of examples that may be taken to illustrate his commitment to the Multiple Analyses Thesis. Before we turn to the two camps of the debate, it will help to have a systematic overview of these examples and to distinguish them from cases that are clearly *not* exemplifications of the phenomenon of multiple analyses.

It is uncontroversial that, for Frege, 'different sentences may express the same thought' (1892b, 199, translation 188): he insists on this point all over the place (Frege 1879–91, 6, translation 6; 1892b, 196, translation 184, note G; 1897, 154, translation 143; 1924–25, 288, translation 269). But statements of this form, taken in isolation, do not suffice to show that Frege is committed to the possibility of multiple analyses. Within Frege's framework, there is room for at least three kinds of cases in which the same thought is expressed by different sentences, but is not split up in different ways. First, there can be sentences that are composed of words with identical meanings and psychological associations, put together in exactly the same way (such as, possibly, 'John is American' and 'John ist Amerikanisch'). Secondly, there can be sentences that have the same semantic structure, but differ in

³In addition to the writings of Dummett, Sluga, Bell, and Geach that I will discuss below, there is a vast literature on Frege's view of multiple analyses, which I will not be able to address in detail in this paper. This literature includes Hodes (1982), Currie (1985), Garavaso (1991), Bermúdez (2001), Levine (2002), Penco (2003), Textor (2009), Kemmerling (2010), Heck and May (2011), Travis (2012), and Garavaso (2013). Some of this literature seeks to reconcile Frege's apparently incompatible commitments. However, none of these attempted reconciliations coincides with the one that I defend in this paper, or shares my sense of what blocks a proper understanding of Frege's position.

psychological associations (such as, for Frege, ‘The dog is barking’ and ‘The cur is barking’; see Frege 1897, 152, translation 140). And finally, there can be sentences that have different surface-syntactical forms, but the same underlying logical form (such as, for Frege, ‘Everybody loves somebody’ and ‘ $\forall x \exists y (x \text{ loves } y)$ ’).

If one wants to argue that Frege is committed to the Multiple Analysis Thesis, one must look at his treatment of different sorts of cases. I will distinguish five kinds of relevant cases. As we shall see, there are various similarities and differences between the individual examples that Frege discusses. I do not claim, therefore, that what follows is the only sensible way of classifying them. The classification given below is meant to facilitate the discussion of the secondary literature in a way that I hope will become evident in the following sections.

First kind of candidate case. Frege maintains that given a meaningful sentence, of either natural language or Begriffsschrift, there are many ways of segmenting it into a functional expression and argument expressions. Each of these segmentations is achieved by regarding one or more parts of the sentence as variable, and the remaining part of the sentence as constant. The constant part will be a functional expression; more specifically, a concept-expression. The variable parts will be proper names, if the constant part is a first-level concept-expression, or concept-expressions of first or higher level, if the constant part is a concept-expression of second or higher level. In §9 of *Begriffsschrift*, for example, Frege indicates three different ways of ‘splitting up’ the sentence ‘Cato killed Cato’. We may regard the first occurrence of ‘Cato’ as variable and the rest as constant: in this case, we will regard the sentence as composed of the proper name ‘Cato’ and the concept-expressions ‘ ξ killed Cato’ (where the Greek letter indicates the empty place that needs to be filled by a proper name). If we regard the *second* occurrence of the word ‘Cato’ as variable and the rest as constant, then we will regard the sentence as composed of the proper name ‘Cato’

and the concept-expression ‘Cato killed ξ ’. Finally, if we regard both occurrences of the word ‘Cato’ as variable, but in such a way that they may only be replaced by two occurrences of the same proper name, then we will regard the sentence as composed of the proper name ‘Cato’ and the concept-expression ‘ ξ killed ξ ’. It seems to follow from Frege’s view that these are only three out of *many* possible ways of splitting up the sentence. For example, if we regard the concept-expression ‘ ξ killed ξ ’ as variable and the rest as constant, then we will segment the sentence into a first-level concept-expression and a second-level concept-expression, the Cato-quantifier ‘ $Cx(\phi x)$ ’ (where the Greek letter indicates the empty place that needs to be filled, in the early Frege, by a first-level one-place concept-expression, and in the mature Frege, by any first-level one-place function-expression). In fact, some commentators have argued that, by ascending the hierarchy of levels, we can split up any logically articulated sentence in infinitely many ways (see Hodges 1982, 167–68). In the following table, I provide a synopsis of the alternative ways of segmenting the sentence ‘Cato killed Cato’ that we have explicitly considered. Following Frege’s practice, I associate each alternative method of analysis with an ordinary language paraphrase of the original sentence; the dots on the bottom line indicate that the list is not meant to be exhaustive:

<u>Sentence</u>	<u>Alternative Analyses</u>	<u>Ordinary Language Paraphrases</u>
Cato killed Cato.	Cato + ξ killed Cato	Cato killed Cato.
	Cato + Cato killed ξ	Cato was killed by Cato.
	Cato + ξ killed ξ	Cato killed himself.
	ξ killed ξ + $Cx(\phi x)$	Having killed oneself is a property of Cato.
...

Table 1

Frege discusses many analogous examples in his writings (see 1979, §9, translation 66; 1880–81, 17–18, translation 16–17; 1882,

translation 81). These cases may be taken to be illustrations of the Multiple Analyses Thesis for the following reason. The alternative segmentations of each sentence produce different sets of *logical* or *semantic* units; they display, accordingly, different ways of splitting up the *content* expressed by the sentence. But Frege insists that these different analyses need not affect the ‘conceptual content’ expressed by the sentence, but only ‘our way of grasping it’ (1879, §9). Thus it seems that the *same* propositional content (‘judgeable content’ for early Frege, ‘thought’ for mature Frege) may be expressed by sentences with different semantic structures. On the other hand, as we shall see in the next section, one may argue that these cases do *not* actually illustrate the Multiple Analyses Thesis, because they are compatible with the idea that each sentence and thought has a unique *fundamental* structure, which accounts for all the possible alternative analyses.

Second kind of candidate case. Frege holds that by applying what is now known as the Principle of Abstraction, we can ‘carve up’ the same propositional content in a different way. Three cases that he discusses explicitly are presented in Table 2.⁴ We have here three propositional contents, each of which is analyzed in

⁴In the table, the Latin capital letters ‘F’ and ‘G’ (or more accurately, those letters together with their argument places, i.e., ‘Fξ’ and ‘Gξ’) are used as schematic first-level one-place concept-expressions—what we would call schematic predicate letters. This accords with standard logical notation. By contrast, the Greek capital letters ‘Φ’ and ‘Ψ’ (or more accurately, ‘Φξ’ and ‘Ψξ’) are used more widely as schematic first-level one-place function-expressions, which may be conceptual (e.g., ‘ξ is wise’) or non-conceptual (e.g., ‘ξ²’). This follows Frege’s mature notational conventions (Frege 1893, §3, translation 7–8). One of the formulae to appear below, ‘ $\forall x(\Phi x = \Psi x)$ ’ is not well-formed in standard logical notation if the capital Greek letters are interpreted as concept-expressions (the correct formula would be ‘ $\forall x(Fx \leftrightarrow Gx)$ ’), but it is well-formed in Frege’s mature system, where concepts are treated as special cases of functions. The capital Greek letters discussed here should not be confused with the lower-case Greek letters ‘φ’ and ‘ψ’, which I use elsewhere in this paper (following Frege 1893, §21, translation 37) to indicate the argument places of second-level function-expressions.

<u>Recarvings of the same content by application of the Abstraction Principle</u>	<u>Transcriptions in logical notation</u>
<i>a</i> is parallel to <i>b</i> . The direction of <i>a</i> is identical to the direction of <i>b</i> .	$a // b$ $D(a) = D(b)$
There is a one-to-one correlation between the <i>F</i> s and the <i>G</i> s.	$\exists R\{\forall x(Fx \rightarrow \exists y(Gy \ \& \ xRy)) \ \& \ \forall y(Gy \rightarrow \exists x(Fx \ \& \ xRy)) \ \& \ \forall x\forall y\forall z[\{(xRy \ \& \ zRy) \rightarrow (Fx \rightarrow (Fz \rightarrow (Gy \rightarrow x = z)))\} \ \& \ \{(xRy \ \& \ xRz) \rightarrow (Fx \rightarrow (Gy \rightarrow (Gz \rightarrow y = z)))\}]\}$
The number of <i>F</i> s is identical to the number of <i>G</i> s.	$Nx(Fx) = Nx(Gx)$
The functions $\Phi(\xi)$ and $\Psi(\xi)$ have always the same value for the same argument.	$\forall x(\Phi x = \Psi x)$
The functions $\Phi(\xi)$ and $\Psi(\xi)$ have the same value-range.	$\dot{\varepsilon} \Phi \varepsilon = \dot{\varepsilon} \Psi \varepsilon$

Table 2

two alternative ways. Concerning the first case, Frege writes in *Grundlagen* that ‘we carve up the content in a way different from the original way, and this yields us a new concept’, namely the concept of direction (§64; other analogous examples are discussed in §§64–65). Clearly, this consideration is meant to apply also to the second case, since the discussion of directions serves in *Grundlagen* as an analogy for Frege’s treatment of numbers (§63). In ‘Function and Concept’, Frege discusses an instance of the third case and writes that the two sentences express ‘the same sense, but in a different way’: one ‘presents the sense as an equality holding generally’, whereas the other ‘is simply an equation’, stating that two objects are identical (1891, 11, translation 136). Since the essay was written in light of

the sense/reference distinction, this remark asserts that the two sentences agree not only in truth-value, but also in the thought they express.⁵ So in each of these three cases, sentences that by Frege's own standards have different semantic structures are said to express the same thought or judgeable content.

There are some notable differences between these cases and the former ones. Cases of the first kind are characterized by the fact that the different analyses of the same thought are obtained *from a single sentence*, by regarding each time different parts of the sentence as variable and constant. Cases of the second kind, on the other hand, are characterized by the fact that we start from the very beginning with different sentences, which are thought to exhibit different semantic structures. Moreover, cases of the former kind display a method for generating an indefinite (or perhaps an infinite) number of different analyses of *any* thought that is initially expressed in an articulate way, whereas the 'recarving process' applies only to thoughts of a certain form (namely those involving an equivalence relation) and generates only *two* alternative analyses.

Third kind of candidate case. Further evidence for Frege's commitment to the possibility of multiple analyses is provided by his discussion of sentences involving truth-functional connectives. Here are some of the cases that Frege discusses:

Alternative expressions of the same thought by means of sentences involving truth-functional connectives

$p \ \& \ q$
 $q \ \& \ p$

$p \ \& \ p$
 p

p
 $\neg\neg p$

$p \rightarrow q$
 $\neg q \rightarrow \neg p$

Table 3

Concerning the first two pairs of sentences, Frege writes that these are cases 'where two linguistically different expressions correspond to the same sense', i.e., the same thought (1923, 9, translation 393). And yet, at least in the second case, it seems that the two sentences, by Frege's standards, must exhibit different semantic structures. For Frege, the sign for conjunction is a concept-expression in its own right: it refers to a concept and expresses a certain sense, which will be *part* of the thought expressed by the sentence in which it occurs. Thus, the thought expressed by ' $p \ \& \ p$ ' will contain a part that is not contained in the thought expressed by ' p '. Similar considerations apply to the last two pairs of sentences. About double negation, Frege writes that "'not (not B)" has the same sense as "B"' (1923, 44, translation 399);⁶ and about contraposition, he asserts that '[t]he sense is scarcely affected by it' (1897–98, 166, translation 154).

⁶See also Frege (1879, viii, translation 51), where Frege introduces an axiom stating that $\neg\neg p$ and p have the same conceptual content (for a helpful discussion of this passage, see Kremer 2010, 238). However, Frege does not

⁵Frege regards the possibility of 'transforming' sentences of the form ' $\forall x(\Phi x = \Psi x)$ ' into sentences of the form ' $\hat{\epsilon} \Phi \epsilon = \hat{\epsilon} \Psi \epsilon$ ' and vice versa as a fundamental law of logic and includes it among the axioms of his formal system. This is the infamous Basic Law V (Frege 1893, §§3, 9, 20). In the passage from 'Function and Concept' that I have mentioned, Frege says *explicitly*, of a particular pair of sentences of that form, that they express the same sense (i.e., the same thought), and even though the remark is made in connection with a particular example, it is clearly meant to have general significance. However, whether Frege held the same view in *Grundgesetze* is a debated issue. Some commentators argue that Basic Law V incorporates identity of sense as well as identity of truth-value (see e.g., Michael Beaney's editorial notes in Frege 1997, 136, note 4, 213, note 26); others argue that it expresses only identity of truth-value (see e.g., Dummett 1981a, 336).

Fourth kind of candidate case. In ‘On Concept and Object’, Frege states that the two sentences, ‘There is at least one square root of four’ and ‘The concept *square root of four* is realized’, express the same thought (1892b, 199, translation 187–88). Frege argues that in the former sentence the expression ‘square root of four’ is a concept-expression, designating a first-level concept, whereas in the latter sentence, the expression ‘The concept *square root of four*’ is a proper name, designating an object. For Frege, therefore, the two sentences have different logical structures: the former represents a first-level concept falling within a second-level concept (namely the existential quantifier), whereas the latter represents an object falling under a first-level concept. And yet, they are said to express the same thought. Similar considerations apply to other examples discussed in the same essay, such as the pair of sentences ‘Jesus is a man’ and ‘Jesus falls under the concept *man*’, and the pair of sentences ‘2 is a prime number’ and ‘2 falls under the concept *prime number*’ (1892b, 197 and 205 respectively, translation 185 and 193; see also Frege 2004, 66). One may wonder what are, for Frege, the objects designated by expressions of the form ‘The concept *F*’. There is evidence that, at least in ‘On Concept and Object’, Frege takes these expressions to designate *extensions of concepts*. He writes that they stand for objects that ‘go proxy’ for concepts (1892b, 197, translation 185), and then maintains that any expression of the form ‘The extension of the concept *F*’ may be replaced with an expression of the form ‘The concept *F*’ (1892b, 199, translation 187; for an extensive discussion of this issue, see Burge 2005, chap. 7). We can therefore represent the different semantic structures of the

appear to be completely consistent in his writings about the fact that a sentence and its double negation express the same thought. At the end of 1918b (157, translation 361), Frege writes that ‘of the two thoughts, *A* and the negation of the negation of *A*, either both are true or neither is’: here it would seem that there are *two* different thoughts which necessarily agree in truth-value.

sentences considered above by means of Frege’s notation for value-ranges, of which extensions of concepts are special cases:⁷

Alternative analyses of the same thought, by means of sentences involving extensions of concepts	Transcriptions in logical notation
There is at least one square root of four.	$\exists x(x = \sqrt{4})$
The concept <i>square root of four</i> is realized.	$R(\hat{\varepsilon}(\varepsilon = \sqrt{4}))$
Jesus is a man.	Mj
Jesus falls under the concept <i>man</i> .	$U(j, \hat{\varepsilon} M\varepsilon)$; or: $j \in \hat{\varepsilon} M\varepsilon$
2 is a prime number.	$P(2)$
2 falls under the concept <i>prime number</i> .	$U(2, \hat{\varepsilon} P\varepsilon)$; or: $2 \in \hat{\varepsilon} P\varepsilon$

Table 4

Fifth kind of candidate case. There is some reason to believe that the use of the truth predicate generates for Frege another class of cases of multiple analyses. Consider pairs of sentences of the following form:

Different expressions of the same thought,
by means of sentences involving the truth predicate

p
It is true that p .

Table 5

⁷Some commentators have maintained that, for Frege, the members of each of these pairs of sentences differ merely in surface-grammatical structure and correspond, accordingly, to a single formula of a proper logical notation (see, for instance, van Heijenoort 1977). However, I don’t see any reason for thinking that this is Frege’s view in 1892b. At most, one may argue that this is the view that Frege *should* have endorsed in that essay, given his other commitments, or given the nature of the matter.

Frege consistently maintains that sentences of the form ‘ p ’ and ‘It is true that p ’ express the same thought or judgeable content.⁸ Moreover, at least on some occasions, he seems to regard the truth predicate as a genuine concept-expression. To the extent that he does so, he is committed to the idea that the same thought may be expressed by sentences with different semantic structures.⁹

This concludes my overview of the kinds of cases discussed by Frege that may be taken to express his commitment to the

⁸See Frege (1897, 153, translation 141); (1915, 271, translation 251–52); (1918a, 61, translation 328); see also §3 of *Begriffsschrift*, where Frege assumes that sentences of the form ‘ p ’ and ‘It is a fact that p ’ express the same judgeable content.

⁹The claim that Frege’s conception of truth shows that he is committed to the multiple analyzability of thoughts is made in Bermúdez (2001) and, more incidentally, in Burge (2005, 292, note 16). However, Frege’s view of the nature of truth (and of the role of the truth predicate) is a very delicate issue. At some points, Frege argues that the predicate ‘is true’ should be regarded as a concept-expression, even though a *sui generis* one: ‘All one can say is: the word “true” has a sense that contributes nothing to the sense of the whole sentence in which it occurs as a predicate’ (1915, 271, translation 251–52). But it is only with great reluctance that Frege talks of truth as a property. After an inquiry into the peculiar logical features of the truth predicate, Frege concludes: ‘The *Bedeutung* of the word “true” seems to be altogether *sui generis*. May we not be dealing here with something which cannot be called a property in the ordinary sense at all? In spite of this doubt I will begin by expressing myself in accordance with ordinary usage, as if truth were a property, until some more appropriate way of speaking is found’ (1918a, 61–62, translation 328–29). This reluctance on Frege’s part, as well as other aspects of his conception of truth (such as the idea that ‘the meaning of the word “true” is spelled out in the laws of logic’ (1918a, 59, translation 326) and the claim that ‘the word “true” seems to make the impossible possible: it allows what corresponds to the assertoric force to assume the form of a contribution to the thought’ (1915, 272, translation 252)), can be taken to show that Frege is not really committed to regarding truth as a property *at all* (see Ricketts 1996). If that is the case, then there are grounds for attributing to Frege the view that pairs of sentences of the form ‘ p ’ and ‘It is true that p ’ express the same thought, but do not exhibit different semantic structures: the difference would merely lie in their surface-grammatical form. Consequently, Frege’s discussion of pairs of sentences of the form ‘ p ’ and ‘It is true that p ’ could not be taken to illustrate his commitment to the doctrine of multiple analyses.

Multiple Analysis Thesis. It is worth acknowledging that many of these cases pose special problems. Frege himself held different views about some of these cases at different points of his career. Thus one might argue, as Frege did in his late writings, that given the inconsistency of Basic Law V, expressions of the form ‘the extension of the concept F ’ or ‘ $\hat{\epsilon} F\epsilon$ ’ should *not* be treated as genuine proper names (see Frege 1924–25, 288, translation 269).¹⁰ Consequently, some of the cases of the second type, and all of the cases of the fourth type, would not count as instances of multiple analyzability. Similarly, concerning cases of the fifth type, one might argue that the truth predicate should not be treated as a genuine concept-expression, and there is at least a strand in Frege’s writings that appears to pursue this line of reasoning.¹¹ And again, concerning cases of the third kind, one could argue, following Wittgenstein’s *Tractatus*, that logical connectives should not be treated as concept-expressions with a sense and reference of their own.¹² But none of these considerations shows that there is something objectionable in the very idea that the same thought can be analyzed in many alternative ways, none of which can claim absolute priority over the others. Nor the fact that Frege, at some point of his career, subscribed to considerations of this sort shows that he was willing to question his commitment to the Multiple Analyses Thesis. The aforementioned considerations do not invoke any general reason for rejecting the possibility of multiple analyses.

¹⁰For an account of the evolution of Frege’s view about extensions of concepts, see Burge (2005, chap. 7).

¹¹See note 9 above.

¹²The *Tractatus* summarizes this view at 4.0312: ‘My fundamental thought is that the “logical constants” do not represent’. For the *Tractatus*, ‘logical constants’ (i.e., logical connectives) do not characterize the sense of propositions, but express *operations* on the senses of propositions. In a perspicuous notation, truth-functionally equivalent propositions are expressed by means of a *single* sign: for instance, the propositions ‘ $p \rightarrow q$ ’, ‘ $\neg q \rightarrow \neg p$ ’, and ‘ $\neg(p \ \& \ \neg q)$ ’ are *all* expressed in the compact truth-table notation described in 4.442 as: ‘ $(p, q)(TFTT)$ ’.

The question, rather, is always whether the *particular case at hand* should be taken as an instance of multiple analyzability, given the specific issues that it raises. In principle, one could raise specific objections against each of the five kinds of cases mentioned above, and yet admit the possibility of multiple analyses, which may still be exemplified by other cases.

In the following sections, we will look at the two opposite sides of the debate that I described in Section 1, beginning with Michael Dummett's attempt to *explain away* Frege's apparent recognition of the possibility of multiple analyses.

3. Dummett on the 'Essential Structure' of Thoughts

According to Dummett, Frege (or anyway Frege at his best) held the view that each thought has a *unique* identifying structure, which corresponds to the unique semantic structure of the sentences that express it. For Dummett's Frege, each unambiguous sentence is constructed in stages from a set of ultimate constituents. The senses of the constituents, together with their mode of combination, determine the sense of the whole sentence, i.e., the thought it expresses. More specifically, the senses of the parts of the sentence are *parts* of the thought it expresses. The identity of each thought—and this is the crucial claim—is given by the parts of which it is composed and by the way they are put together. Consequently, sentences with different semantic structures cannot express the same thought.¹³

Dummett is of course well aware of the fact that he needs to account for what Frege says about the different kinds of cases that we considered in the previous section, since Frege's statements on the matter seem to show that he held precisely the opposite view. Dummett addresses different cases with different strate-

¹³The reconstruction of Dummett's interpretation that I provide in this section is based especially on Dummett (1981a, chaps. 15–17), (1981b, 27–33) and (1991, 192–95, 289–314).

gies. I will begin with his attempt to deal with the first kind of case by distinguishing between 'analysis' and 'decomposition'.

Dummett argues that in order to understand what Frege writes about the alternative ways of analyzing a sentence such as 'Cato killed Cato', we need to introduce a fundamental distinction (not explicitly drawn by Frege) between the *analysis* and the *decomposition* of a sentence, and a correlative distinction between the *constituents* and the *components* of a sentence. The process of analysis shows how the sentence has been built, in stages, from its ultimate constituents. For each unambiguous sentence there is only one analysis, which specifies a unique set of ultimate constituents and a unique sequence of construction steps. For example, the constituents of 'Cato killed Cato' are (presumably) 'Cato', 'Cato', and '... killed ...', and the sentence is constructed by filling the argument places of the first-level concept-expression with two occurrences of the proper name. Once we have a sentence and understand its sense as determined by its constituents and their manner of combination, we can *then* decompose the sentence (and the thought it expresses) in a variety of different ways, obtaining in each case a different set of components. The process of decomposition consists in taking a complete sentence and omitting from it one or more of its significant expressions, on one or more of their occurrences. The part that is left over is, for Dummett, a component but not a constituent of the sentence. Dummett calls it a *complex predicate* (of first or higher level), in contrast with the *simple predicates* that are revealed by analysis. A complex predicate has empty spaces that need to be filled with expressions of the same logical type as the expressions that have been omitted; moreover, all the empty places that have been created by omitting more occurrences of the same expression must be filled with occurrences of the same expression. Dummett indicates the empty places of complex predicates by means of Greek letters (in accordance with Frege's general notation for concept-expressions), and signals the ar-

gument places of simple predicates by means of dots (as I did above with the putative simple predicate ‘... killed...’). Thus, once we have the sentence ‘Cato killed Cato’, we can decompose it in various ways by omitting each time different significant parts of the sentence: we can decompose it into ‘Cato’ and ‘Cato killed ξ ’, or into ‘Cato’ and ‘ ξ killed ξ ’, and so on. In each case, we obtain a different set of components. Decomposition does not give us the building blocks out of which the sentence has been constructed, but patterns that the sentence may share with other sentences. For each sentence (and for each corresponding thought), there is only one analysis, which reveals its essential structure, but many possible decompositions.

Dummett emphasizes that the distinction between analysis and decomposition should not be confused with the distinction between complete and partial analysis. The components obtained by decomposition do not have to figure at *any* stage of the process of analysis. For example, the concept-expression ‘Cato killed ξ ’ does not figure at any intermediate step of the analysis of ‘Cato killed Cato’: this is, by Dummett’s standards, an atomic sentence, and its analysis takes place in a single step. We do not reach the constituent ‘... killed...’ by *first* decomposing the sentence into ‘Cato’ and ‘Cato killed ξ ’. Analysis and decomposition, as Dummett puts it, are two different *kinds* of process (1991, 193, 301–02).

Dummett explains that these two processes fulfill different functions. The aim of analysis is ‘to reveal the manner in which the sense of a sentence depends upon the senses of its parts’ (1981a, 271). In this way, analysis shows how we understand a sentence given our understanding of its ultimate constituents and their manner of combination. Decomposition, on the other hand, serves at least two functions. In the first place, it generates complex predicates that can appear as (non-ultimate) constituents of quantified sentences and definite descriptions (1981a, 276). From ‘Cato killed Cato’ we can extract by decompo-

sition the complex predicate ‘Cato killed ξ ’; we can then attach to this expression a quantifier and obtain, say, ‘ $\exists x(\text{Cato killed } x)$ ’. The complex predicate, which was only a component of the sentence from which it was extracted, is now a genuine constituent of the quantified sentence, since it figures at one stage of the analysis of the sentence. However, since the complex predicate does not figure at the *last* stage of the analysis of the quantified sentence, it is not one of its *ultimate* constituents.

A second function of decomposition, according to Dummett, is to ‘explain the validity of an inference in which the given sentence figures, or to exhibit such an inference as exemplifying some general pattern’ (1981a, 273). One way to explain the validity of an inference is to show that it exemplifies some valid general pattern. In order to explain by this method different inferential relations of the same sentence, we may have to decompose the sentence in different ways. Consider for instance these two inferences:

Cato killed Cato.	Cato killed Cato.
∴ Cato killed somebody.	∴ Somebody killed Cato.

The two inferences exemplify the same general pattern, namely the introduction rule for the existential quantifier:

$$\begin{array}{l} Fa \\ \therefore \exists x(Fx) \end{array}$$

But in order to show that the two inferences exemplify this very same pattern, we need to decompose ‘Cato killed Cato’ in different ways: in the first case, we regard it as composed of ‘Cato’ and ‘Cato killed ξ ’, whereas in the second case we regard it as composed of ‘Cato’ and ‘ ξ killed Cato’. In many cases, moreover, the same inference may be naturally taken to exemplify more than one general pattern. The choice of one particular pattern will then dictate different decompositions of the relevant sentences. Take the following inference:

If anybody killed Cato, he is an honorable man.
 Cato killed Cato.
 \therefore Cato is an honorable man.

If we see in this inference the following pattern,

$\forall x(Fx \rightarrow Gx)$
 Fa
 $\therefore Ga$

we need to regard the concept-expressions ‘ ξ killed Cato’ and ‘ ξ is an honorable man’ as components of the first premise—components that fill the empty places of the second-level, two-place concept-expression ‘ $\forall x(\phi x \rightarrow \psi x)$ ’. But we can also see the same inference as carried out in two steps, each of which exemplifies a different pattern: we first derive ‘Cato killed Cato’ from the first premise by Universal Instantiation, and then reach the conclusion by *modus ponens*:

	<i>Pattern:</i>
If anybody killed Cato, he is an honorable man.	$\forall x(Fx)$
\therefore If Cato killed Cato, Cato is an honorable man.	$\therefore Fa$

	<i>Pattern:</i>
If Cato killed Cato, Cato is an honorable man.	$p \rightarrow q$
Cato killed Cato.	p
\therefore Cato is an honorable man.	$\therefore q$

If we choose to explain the validity of the inference in this way, we do not need to see the concept-expressions ‘ ξ killed Cato’ and ‘ ξ is an honorable man’ as components of the quantified premise; we only need to decompose it into the second-level, one-place concept-expression ‘ $\forall x(\phi x)$ ’ and the first-level concept-expression ‘If ξ killed Cato, then ξ is an honorable man’.

We do not need to enter any further into the details of Dummett’s distinction between ‘analysis’ and ‘decomposition’.¹⁴

¹⁴For a more comprehensive discussion, see Sullivan (2010).

(From this point, I will put these terms and cognate expressions in scare quotes whenever I use them in Dummett’s technical sense; all other occurrences of the expressions should not be taken to carry those connotations.) The presentation I offered should suffice to show how the distinction is supposed to accommodate what Frege has to say about the first kind of case in Dummett’s interpretation. To repeat, a thought admits of many alternative ‘decompositions’, but only one ‘analysis’, which reveals its unique essential structure.

Even though this aspect of Dummett’s reading has not met the consensus of commentators, it has considerable advantages.¹⁵ In the first place, it does justice to the intuitive idea that the various ways of splitting up a sentence (and the corresponding thought) into its logical parts do not all stand on the same level. It seems obvious that the analysis of a sentence of the form ‘ aRb ’ into ‘ a ’ and ‘ ξRb ’ is *less fundamental* than the analysis of the sentence into ‘ a ’, ‘ $\dots R \dots$ ’, and ‘ b ’. After all, the concept-expression ‘ ξRb ’ contains the simpler concept-expression ‘ $\dots R \dots$ ’ and the proper name ‘ b ’! The former analysis strikes us as merely *partial*. Dummett’s distinction can explain the different status of these alternative analyses of the sentence, as well as another contrast that cannot be captured in terms of the distinction between complete and partial analyses. It seems that the analysis of a sentence of the form ‘ Fa ’ into the ‘ $F \dots$ ’ and ‘ a ’ is *more fundamental* than the analysis of the sentence into ‘ $F \dots$ ’ and the second-level concept-expression ‘ ϕa ’, even though the latter is in no obvious sense ‘more partial’ than the former. Dummett gives us the resources for vindicating this intuition. According to his account, the higher-level analysis of the sentence is obtained by regarding one of its significant parts as variable and

¹⁵For a critique of the claim that Frege is implicitly operating with Dummett’s distinction between ‘analysis’ and ‘decomposition’, see Levine (2002). For a critique of the attribution to Frege of the correlative distinction between simple and complex predicates, see Sluga (1975, 480); Geach (1975, 147ff.), (1976a).

the rest as constant; but in order to do so, we need to know *which* significant expressions occur in the sentence, and this is revealed by the lower-level analysis. So the higher-level analysis is less fundamental than the other because it *presupposes* it.

Dummett's attribution to Frege of an implicit commitment to the distinction between 'analysis' and 'decomposition' is also supported by at least two pieces of textual evidence (both of which are extensively discussed by Dummett). First, in *Begriffsschrift*, Frege claims that the different ways of splitting up a judgeable content into function and argument are all on the same level as long as function and argument are 'fully determinate', but if the argument 'becomes indeterminate' (i.e., if the argument becomes a variable governed by a quantifier), then 'the whole splits up into *function* and *argument* according to its content and not merely according to our way of grasping it' (Frege 1879, §9). This last remark fits well with Dummett's claim that complex predicates can only be *components* of non-quantified sentences, but may be (non-ultimate) *constituents* of quantified sentences.¹⁶ Secondly, in another early writing, after stressing that he arrives at a concept by splitting up a complete judgeable content, Frege remarks that '[o]f course, if the expression of the content of possible judgment is to be analyzable in this way, it must already be itself articulated'. From this, Frege continues, 'we may infer that . . . at least the properties and relations that are not further analyzable must have their own simple designations' (Frege 1880–81, 18–19, translation 17). The idea that the various ways of splitting up a judgeable content (and the sentence that expresses it) presuppose a pre-existing articulation, as well as the explicit contrast between simple and complex concept-expressions, can be plausibly taken to support Dummett's reading.

However successful is Dummett's invocation of the 'analysis'/'decomposition' distinction in connection with the first kind

¹⁶For a critique of Dummett's appropriation of this passage and an alternative (but not very convincing) interpretation, see Currie (1985, 288–90).

of case distinguished above, he is well aware that he cannot deal in the same manner with the second kind of case. The different recarvings of the same content that Frege discusses in *Grundlagen* and elsewhere are not obtained through Dummettian 'decomposition'. There is no *single* sentence from which we can obtain, by applying different methods of 'decomposition', both '*a//b*' and '*D(a) = D(b)*'. Dummettian 'analysis', when applied to the two sentences, yields different sets of ultimate constituents. The two sentences, therefore, have different semantic structures. And yet, Frege says that pairs of sentences of that form express the same content or sense. Dummett concedes that Frege's remarks here are incompatible with the idea that each thought has a unique identifying structure, but holds that they should be dismissed as local aberrations (1981a, 332–36; 1991, 292–96). He claims that they are 'too strong' (1991, 293) and 'embod[y] an exaggerated claim' (1981a, 335), and suggests that Frege was misled by a 'false analogy' with cases in which a single sentence (and the thought it expresses) is 'decomposed' in different ways (1991, 295). By the time he wrote *Grundgesetze*, according to Dummett, Frege abandoned his early, incorrect view and got rid of any claim that is incompatible with the idea that each thought has a unique structure (1991, 293).¹⁷

Dummett addresses also some of the cases of the third kind. Here he adopts a new strategy. He introduces a distinction, not explicitly drawn by Frege, between *essential structure* and *form of representation* (1981a, 328–32). The essential structure of a sentence is what accounts for the way in which its sense depends upon the senses of its ultimate constituents. The form of representation is the particular grammatical construction that we adopt in order to represent a certain essential structure. The idea is that different sentences can have the same essential structure, even though they represent it in different ways. This is what

¹⁷Dummett rejects, accordingly, the view that Basic Law V in *Grundgesetze* expresses identity of sense as well as identity of *Bedeutung* (see note 5 above).

happens, according to Dummett, when we express a material conditional in Frege's notation, in contemporary logical notation, and in Polish notation (1981a, 328–29):

$$\begin{array}{l} \text{— } q \\ \text{— } p \end{array} \quad p \rightarrow q \quad \rightarrow pq$$

For Dummett, these formulas have the same essential structure and express the same thought; what changes is merely the form of representation. Dummett uses this model to account for the relationship between sentences of natural language and their translations in logical notation (1981a, 329–30), and then argues that we can explain in the same way Frege's remarks about the first two cases listed in Table 3 (1981a, 330–32). For Dummett, Frege says that '*p & q*' and '*q & p*' express the same thought because he holds that the two sentences represent in different ways the same essential structure. Frege holds the same view, according to Dummett, about '*p*' and '*p & p*'. The fact that, in these cases, the same thought is expressed by different sentences of Frege's notation is a sign of its imperfection. In an *ideal* logical notation, each thought would be expressed by a single sentence. Dummett suggests that an adequate notation, with respect to the two cases under consideration, would be one in which 'each conjoint is written on top of one another, as in a monogram, but each only half as bold as their unconjoined counterparts' (1981a, 332).

Dummett's ambition, here, is to show that Frege's remarks about conjunction are fully compatible with the view that each thought has a single structure. In this respect, his treatment of these cases is similar to his discussion of the first kind of case, and unlike his dismissive response to the second kind of case. But Dummett's attempted accommodation of cases involving conjunction is not as developed and compelling as his account of the first kind of case. Dummett does cite textual evidence in support of his reading. Concerning the pairs '*p & q*' and '*q & p*', and '*p*' and '*p & p*', Frege says that the 'divergence of

expressive symbol and expressed thought is an inevitable consequence of the difference between spatio-temporal phenomena and the world of thoughts' (Frege 1923, 39, translation 393). This suggests, as Dummett maintains, that in an ideal notation each pair of sentences would be replaced by a single formula. But it is not clear that this is consistent with Frege's other commitments. Frege lumps together the two pairs of sentences, but even if his view worked for the former pair, it would not automatically carry over to the latter pair. As we saw in Section 2, for Frege logical connectives are functional expressions with senses and references of their own, and their senses are part of the thoughts expressed by the sentences in which they occur. Given these assumptions, '*p & p*' contains a semantic component not contained in '*p*,' and the thought expressed by the former contains a sense not contained in the thought expressed by the latter. So, from the perspective of Frege's official account of the logical connectives, a notation in which the two sentences were replaced by a single formula, far from being logically ideal, would obscure a genuine difference in semantic structure. The same considerations apply to double negation and contraposition (the last two cases in Table 3), which Dummett does not discuss.

Let's take stock. Dummett offers a compelling accommodation of the first kind of case, but he is forced to dismiss the second kind of case. His attempted accommodation of the third kind of case might work for the pair '*p & q*' and '*q & p*', but applies to the three remaining pairs only if one ignores Frege's official account of the logical connectives. To my knowledge, Dummett does not address at all the fourth and fifth kind of case. These are clearly beyond the reach of the 'analysis'/'decomposition' distinction, and it seems that Dummett would be forced to choose between two options: either dismiss as local mistakes Frege's claims to the effect that the relevant pairs of sentences express the same thought, or maintain that for Frege those sentences differ in form of representation but not in semantic structure, thereby dismissing the textual evidence reviewed in the previ-

ous section. (Notice that whether or not it would actually be *correct* to regard those sentences as having the same semantic structure is beside the point: the question under discussion is whether Frege was committed to the possibility of multiple analyses, not whether he was right in claiming that those particular pairs of sentences illustrate of phenomenon.) I conclude that, when we look beyond the first kind of case, the claim that each thought has for Frege a unique structure appears as a requirement that Dummett *imposes* on the texts—as a commitment that Frege *must* accept—rather than as a view that Dummett *gathers* from the texts as they stand.

The need for an interpretation that takes seriously Frege's statements about the possibility of multiple analyses is one of the main motivations of the anti-Dummettian camp of the debate. Unfortunately, as we will begin to see in the next section, this camp assumes that in order to allow for multiple analyses of the same thought, Frege *must* regard thoughts as intrinsically unstructured wholes.

4. Sluga on the Priority of Complete Thoughts

The first representative of the anti-Dummettian camp that I shall consider is the interpretation developed by Hans Sluga in explicit opposition to Dummett's.¹⁸

Sluga argues that a central feature of Frege's philosophy is his opposition to the traditional approach to logic, which starts with 'concepts' (here generically understood as sub-propositional contents), construes judgments as combinations of concepts, and finally gets to inferences as combinations of judgments. According to this tradition, which supposedly spans from Aristotle to Boole, concepts are given prior to and independently of the complete thoughts in which they may occur. Similarly, at the linguis-

¹⁸The following account of Sluga's interpretation is based on Sluga (1975), (1977), (1980, especially 90–95, 134–36), and (1987).

tic level, sub-sentential expressions are taken to have meanings prior to and independently of their occurrences in meaningful sentences. As Sluga nicely puts it, the Aristotle-Boole tradition 'treats concepts as if they were initially independent of judgments and entered them only incidentally' (1980, 91). The fact that concepts appear in thoughts or contents of judgments, as well as the fact that words are used in sentences, is treated as a merely accidental feature of concepts and words respectively.

Frege, according to Sluga, replaces this traditional atomistic approach with a form of holism that inherits the Kantian doctrine of the priority of judgments over concepts, of which Frege's Context Principle ('It is only in the context of a proposition that words have any meaning', Frege 1884, §62) is a 'logical consequence' or 'linguistic version' (Sluga 1987, 86). Frege's contextualism, for Sluga, *reverses* the direction of priority between the thought and its parts, as well as the correlative direction of priority between sentence-meaning and word-meaning. The traditional logician takes thoughts to arise from the combination of antecedently given thought-components; Frege, by contrast, takes thought-components to arise from the segmentation of antecedently given thoughts. As Sluga puts it, Frege 'reversed [the] order [of traditional logic] and began his logic with the treatment of propositions . . . as unanalyzed wholes whose initially significant feature is their truth or falsity' (1975, 482). Frege begins with complete thoughts, which can be judged to be true or false; and a thought, according to Sluga's interpretation, is an 'unanalyzed whole' or 'unity' (1975, 483)—where a 'unity' is something intrinsically 'simple' (1975, 484) and unstructured: a *sense-monolith*, we might say. Similarly, on the linguistic level, 'sentence meanings precede word meanings' (1987, 86).¹⁹ The meanings of sentences are first grasped as unarticulated wholes:

¹⁹See also Sluga (1977, 239): 'I wish to maintain that for Frege the recognition of the sense of a sentence is primary and that of the senses of the parts of the sentence secondary'.

for Sluga, Frege considers ‘sentences as primarily simple’ (1975, 480). According to this account, it would seem, the manifest grammatical articulation of sentences plays no role in the initial apprehension of their sense.

According to Sluga’s interpretation, once the content expressed by a sentence has been grasped, we may proceed to analyze it into components, which may (but need not) correspond to the grammatical parts of the sentence. The necessity of this process of analysis rests on our need of ‘making and explaining inference-relations’ (1975, 480):

In logic we must first speak of a judgment in which a whole thought is grasped. When we account for the logical relations that hold between judgments or the thoughts expressed by them, we may be forced to conceive of the judgment as falling apart into constituents. In a particular case, the logical constituents we have to distinguish in a judgment may closely correspond to the words out of which the grammarian sees the sentence composed. (Sluga 1975, 483)

We can grasp the content of each sentence as an unarticulated whole. But in order to recognize and explain the inferential relations between these contents, we need to break them down into logical components, so as to present valid inferences as the exemplification of general patterns. Sluga does not explain *why* this is the case—why the validity of inference is accessible to us only through its formal character. But given Sluga’s commitments, it seems that this can only be a consequence of the limitations and parochialism of our cognitive capacities. Presumably, the thoughts expressed by our sentences stand *already* in definite logical relations with one another before we articulate them into logical parts.

This leads, finally, to the introduction of the idea of multiple analyses. According to Sluga, Frege believes that in order to bring out different sets of inferential relations of a given thought, we may need to analyze it in different ways. As Sluga puts it, we might have to ‘assign’ a different ‘logical structure’ to the thought and to the sentence that expresses it:

... logical structure is not an absolute property of a sentence, but a relational one involving a sentence and a set of sentences relative to which structure is assigned. We need to assign to a sentence only enough structure to account for the logical relations between it and the other sentences in the set. (Sluga 1980, 135)²⁰

The possibility of multiple analyses is grounded in the fact that the contents of sentences are in and of themselves unstructured. Internal articulation is something that is merely ‘assigned’ or imposed *by us*—something that reflects only ‘our subjective perception and our manner of speaking’ (1980, 157). Reversing the remark that Sluga uses to characterize the atomistic tradition that Frege opposes, we can say that thoughts are *initially independent* of internal articulation and receive such an articulation *only incidentally*. Different analyses do not alter the identity of a thought, because thoughts are intrinsically *inarticulate*.

Sluga’s interpretation is informed by two implicit assumptions, whose joint effect is to suggest that (a) the rejection of the atomistic approach to logic, (b) the view of thoughts as intrinsically unstructured, and (c) the recognition of the possibility of multiple analyses come in a single package. The first assumption is that (a) entails (b). Sluga proceeds as if the *only* way to oppose a view that accords priority to the components of thoughts were to adopt the opposite view, i.e., a view that construes thoughts as intrinsically unstructured wholes that may become articulated only at a subsequent and optional stage. The second assumption is that (c) requires (b). This is the Underlying Assumption. Sluga never envisions the possibility of allowing for multiple analyses without maintaining that thoughts are intrinsically unstructured.

The first assumption is not relevant for our immediate purposes, but will become relevant in Section 8, where I present my positive proposal. I will in fact agree with Sluga that in

²⁰See also Sluga (1977, 482, 484). For the explicit attribution to Frege of the doctrine of multiple analyses, see Sluga (1980, 182), and (1987, 89–90).

order to understand Frege's commitment to the Multiple Analyses Thesis, we need to appreciate his anti-atomistic conception of language and thought. But I will argue that we should reject both of Sluga's assumptions.

Before we turn to Dummett's arguments against Sluga, we will look at a different kind of 'anti-Dummettian' approach, namely the proposal advanced by David Bell. There are several substantial differences between Sluga's and Bell's respective accounts. But in spite of these differences, they share the idea that the possibility of multiple analyses rests on the intrinsically unstructured nature of thoughts. In this respect, I shall argue, they are equally liable to Dummett's objections.²¹

5. Bell and the Function/Argument Model of Sentential Complexity

David Bell argues that the apparent tension between the Articulation Thesis and the Multiple Analyses Thesis is generated by the fact that Frege is working with two quite different notions of 'thought', which he fails to distinguish.²² The tension is supposed to vanish as soon as we see that each thesis applies to a distinct notion of 'thought'. As Bell puts it, 'Frege is involved in no doctrinal inconsistency here: it is only his use of the term 'thought' that is inconsistent' (1981, 223).²³

²¹For an interpretation structurally similar to Sluga's, see Garavaso (1991, 2013). For Garavaso (as for Sluga) thoughts are *in themselves* unstructured and are articulated *by us*, for the purpose (not primarily of understanding inferential relations, as in Sluga, but rather) of grasping and communicating thoughts that have not been previously encountered.

²²I shall focus mainly on Bell (1981), (1987), and (1996).

²³The general strategy of reconciling Frege's two theses by arguing that they apply to two different sorts of item, which Frege supposedly conflated under the single rubric of 'thought', has enjoyed some popularity among commentators, especially in recent years; see for example Kemmerling (1990), Penco (2003), Textor (2009), and Kemmerling (2010). Commentators have proposed different ways of implementing that general strategy. In this paper, I

Bell maintains that we should distinguish between the 'linguistic meaning' or 'sense' expressed by a sentence, and the 'conceptual content' or 'thought' (properly so-called) it conveys (1981, 223; 1987, 46; 1996, 594). The *linguistic meaning* of a sentence is characterized by part/whole complexity: it is a whole that is *composed* of the senses of the parts of the sentence. Each sentential linguistic meaning has a unique intrinsic structure that is isomorphic to the structure of the sentences that express it. Structurally different sentences cannot express the same linguistic meaning. This is the notion of 'thought' to which the Articulation Thesis applies.

The *conceptual content* of a sentence, by contrast, is 'the value that a certain conceptual function takes for a certain conceptual argument' (Bell 1996, 595). At the level of conceptual content, sentences are characterized by function/argument complexity. Sentences with different function/argument structures can unproblematically convey the same judgeable conceptual content: the same judgeable conceptual content can be the value of different conceptual functions for appropriate conceptual arguments, just as a number can be the value of different arithmetical functions for appropriate numbers as arguments. Moreover, the judgeable conceptual content that is the value of a given conceptual function for a given conceptual argument is not *composed* of the function and the argument, just as the number 16 is not *composed* of the function x^2 and the number 4. Finally, the function/argument structure of a sentence that expresses a certain conceptual content does not reveal its *intrinsic structure*—just as the function/argument structure of an arithmetical expression that designates a certain number, say '4²', does not reveal the 'inner structure' of that number. Indeed, according to Bell, a Fregean judgeable conceptual content (or 'thought' in the

address only Bell's particular proposal. I wish to emphasize, however, that my own proposal opposes all the interpretations that adopt the aforementioned general strategy.

proper sense of the term) has *no* intrinsic structure: it is a 'structureless whole' (1981, 223; see also 1996, 595). This is the notion of 'thought' to which the Multiple Analysis Thesis applies.

By means of this distinction, Bell can account for all the different kinds of cases of multiple analyses reviewed in Section 2. In particular, he can make room for the cases that Dummett is forced to dismiss, such as the different recarvings of the same conceptual content by means of the sentences ' $a//b$ ' and ' $D(a) = D(b)$ '. The value of the conceptual function expressed by the relational sign ' $\xi//\zeta$ ' for the conceptual arguments expressed by the proper names ' a ' and ' b ' is the *same* judgeable conceptual content that is the value of the conceptual function expressed by the relational sign ' $\xi = \zeta$ ' for the conceptual arguments expressed by the complex proper names ' $D(a)$ ' and ' $D(b)$ '. The two sentences have the same truth-value, the same conceptual content, but different linguistic meanings.

Bell maintains, therefore, that while Frege explicitly proposed (after the introduction of the sense/reference distinction) a three-stage analysis of language,²⁴ he was in fact committed (at least in so far as complete sentences are concerned) to a *four-stage* view. Frege's official view is that sentences designate a truth-value, which is their reference, and express a 'thought', which is their sense. For Bell, Frege should have said that sentences designate a truth-value, convey a 'thought' or judgeable conceptual content, and express a 'sense' or linguistic meaning.²⁵

A noteworthy feature of this picture is that, at the level of conceptual content, things function in the same way as they do at the level of reference. Frege drew a contrast between sense and reference: the sense of a complex expression is composed of the senses of its parts, but the referent of a complex expres-

sion is not in general composed of the referents of its parts. 'The capital of Sweden', he remarked, is a complex proper name referring to Stockholm; but neither Sweden nor the function designated by the expression 'The capital of ξ ' are *parts* of Stockholm (Frege 1919, 275, translation 255).²⁶ Similarly, the sentence 'Stockholm is a capital' is a complex proper name referring to the True; but neither Stockholm nor the concept designated by the concept-expression ' ξ is a capital' are *parts* of the True.²⁷ At the level of reference, for Frege, linguistic expressions do not exhibit in general part/whole complexity, but only function/argument complexity. On Bell's account, the *same* holds for the conceptual content that sentences express. In fact, even though Bell normally speaks of judgeable conceptual contents as 'expressed' by sentences, it would be more appropriate to say that they are *designated* or *picked out* by sentences. Sentences designate (i.e., are names of) truth-values in virtue of the reference of their parts; and similarly, they designate (i.e., are names of) judgeable conceptual contents or 'thoughts' in virtue of the conceptual content of their parts. We may speak, accordingly, of judgeable conceptual contents as the *immediate referents* of sentences, and of truth-values as their *ultimate referents*.²⁸ On Bell's proposed emendation of Frege's view, the sort of contrast that Frege draws between sense and reference holds only between linguistic meaning on the one hand, and reference and conceptual content on the other.

²⁶See also Frege (2004, 87): 'The meanings of the part of the sentence are not parts of the meaning of the sentence. However: The sense of a part of the sentence is part of the sense of the sentence.'

²⁷At one point, Frege *did* hold such a view about the reference of sentences, even though he qualified it by saying that when he speaks of the 'parts of a truth-value', he is using 'the word "part" in a special sense' (Frege 1892a, 35–36, translation 159). However, there is consistent evidence that Frege gave up this earlier view.

²⁸I borrow this terminology from Dummett (1981a, 44). Dummett uses this distinction to characterize what he calls the 'map-reference view of language'. The position that Bell attributes to Frege is in effect a version of the map-reference view.

²⁴I am borrowing this way of characterizing Frege's official view from Hylton (2005, chap. 7).

²⁵It is unclear whether Bell wants to apply this four-stage theory across the board to both sentential *and* sub-sentential expressions (as Frege does with his official three-stage theory).

6. Dummett's Critique of Sluga and Bell

We have seen that Sluga and Bell attempt to make room for the possibility of multiple analyses by regarding thoughts as intrinsically unstructured wholes, which in no way mirror the structure of the sentences that express them. For Sluga, thoughts can be analyzed in alternative ways because internal articulation is extrinsic to the nature of thoughts and is merely imposed *by us*. For Bell, thoughts are values of conceptual functions; and since the same thing can be the value of different functions for appropriate arguments, the same thought can be 'expressed' (or, as I suggested we should say, *picked out*) by sentences involving different combinations of conceptual arguments and conceptual functions. The strategies that these commentators adopt in order to accommodate Frege's apparent commitment to the Articulation Thesis differ accordingly. For Sluga, this thesis does not really concern thoughts in themselves, but only what happens to thoughts when *we* articulate them (after we have grasped them as inarticulate wholes) in order to make perspicuous some of their inferential relations. For Bell, the Articulation Thesis does not really apply to thoughts, but only to the 'linguistic meanings' of sentences.

Dummett has criticized these interpretations in detail.²⁹ The aspect of his critique that I find most insightful—and that will be our concern in this section—has received little attention in the literature. It hinges on two mutually related distinctions: the distinction between *languages* and (mere) *codes*, and the distinction between *expressing* a thought and *referring* to it. Dummett argues that Sluga and Bell conflate these different notions, reducing the former member of each pair to the latter. As a result, they lose sight of the deepest philosophical rationale for the Articulation Thesis and saddle Frege with an untenable position.

²⁹For Dummett's criticism of Sluga, see Dummett (1981a, 292–322, 537–51); for his criticism of Bell, see Dummett (1991, 289–314).

This line of critique brings out *why* we should accept the idea that thoughts are internally articulated, in a way that mirrors by and large the internal articulation of the sentences that we use to express them: we must hold on to that idea if we want to be talking about *language* and *thought* in the full and proper sense of these terms.

Dummett writes:

Sentences do not encode thoughts, but *express* them: it is only because we can conceive of the thought as having parts corresponding to the parts of the sentence that we can distinguish expressing the thought from a systematic way of identifying it. (Dummett 1991, 290)

Dummett is making a conceptual remark about what it is to be a *sentence*, belonging to a *language*, and also about what it is to be a *thought*. A sentence is something that *expresses* a thought; a thought is something that may be *expressed* by a sentence; and a language is something that allows for the *expression* of thoughts. Dummett claims that the concept of expression that figures in each of these statements is one that requires a by and large correspondence between the parts of the sentence and the parts of the correlative thought. In order to persuade us of this point, Dummett develops a contrast. We speakers of language have the capacity to come up with various ways of *encoding* rather than expressing our thoughts. For instance, we can devise a code that associates a certain number of thoughts to semantically simple signs, as we do—to take one of Frege's examples—when we use a simple signal (say, a green light) to communicate the thought that 'The track is clear' (see Frege 1914b, 127, translation 320). Alternatively, we can devise a way of encoding thoughts in a systematic way, by means of signs that may exhibit some form of internal semantic complexity. Dummett mentions the way in which the coordinate system is used to pick out any point on the surface of the Earth. The signs of this system are complex, but in a way that does not correspond

to the internal structure of the point that they identify: it is hard to see how the sign '41°52'55" N, 87°37'40" W' could be said to reveal the 'internal structure' of the topographic center of Chicago. Similarly, Dummett suggests, we could perhaps devise a system that picks out any thought by specifying its relative position in the inferential space, without having to reveal its internal articulation.³⁰ For Dummett, however, the possibility of codes of either kind is *parasitic* on our mastery of a language that complies with the requirements specified by the Articulation Thesis. It is crucial, in fact, that when it is time to specify what *is* the thought that a certain sign encodes, we need to use a *sentence* of our language which *expresses* the thought by displaying its internal structure.³¹

Dummett points out that the contrast between expressing a thought and merely encoding it is connected to the contrast between expressing a thought and referring to it. Our language gives us the tools for referring to thoughts without expressing them. We may refer, for example, to the thought expressed by the last sentence of Frege's *Grundlagen*, in order to claim, say, that it is true, or insightful, or hasty. But it is significant that when we need to specify what this thought *is*, we need to use a sentence that *expresses* it. This shows that the possibility of referring to thoughts is parasitical on the possibility of expressing them. A thought is the sort of thing that is primarily expressed, and only derivatively designated. The phrases that we use to refer to thoughts may certainly exhibit internal semantic complexity; but that is merely the complexity of a complex referring expression, which differs essentially from the complexity of sentences. We may understand what someone says when she speaks of 'The capital of Sweden' without knowing that the capital of Sweden

³⁰See the discussion of the 'map-reference view of language' in Dummett (1981a, 41–45, 296–304).

³¹See the discussion of the phrase-book knowledge of a foreign language in Dummett (1981a, 308–11). I discuss this issue in more detail in Bronzo (2011).

is Stockholm; similarly, we may understand what someone says when she speaks of 'The thought expressed by the last sentence of *Grundlagen*' without knowing which thought that is; but if we understand a sentence that somebody is uttering, we *thereby* know which thought the sentence expresses. Understanding a sentence and knowing which thought it expresses are one and the same thing. The kinds of codes that we considered above—codes that can be contrasted with languages—exhibit, at most, the kind of complexity of referring expressions. Their signs, which may be simple or complex, serve to pick out thoughts, just as Fregean proper names, be they simple or complex, serves to pick out objects.

We are now in a position to see how these Dummettian ideas afford the materials for a critique of Sluga and Bell. For Sluga, thoughts are devoid of any internal structure, and the same holds for the sentences that convey them. Internal articulation is something that we impose on both thoughts and sentences only at a subsequent and optional stage, *after* we have grasped the thought that each sentence conveys. Thus, according to Sluga's picture, 'language' is like one of our simple, completely non-compositional codes (which associate English sentences with semantically simple signs), with the crucial difference that this so-called 'language' is supposed to be *all there is*: it is not taken to be parasitic on any other system of communication, qualitatively different from it. The Dummettian criticism, then, is that Sluga is not really entitled to claim that he is speaking about *language* and *thoughts*.³²

³²Even though this criticism is fully Dummettian in spirit, Dummett actually refuses to believe that Sluga can mean what he says when he claims that sentences are primarily and originally semantically simple signs. Dummett argues that Sluga must in fact be attributing to Frege a variant of the 'map-reference view of language', according to which sentences are indeed semantically complex and pick out thoughts by specifying their position in the inferential space, without displaying their internal structure. Thus, Dummett's actual criticism of Sluga is the same as his criticism of Bell, which I am going to rehearse in the next paragraph.

The same criticism applies, with some modifications, to Bell's proposed emendation of Frege's view. For Bell, sentences are logically articulated, but merely as a complex referring expression is logically articulated. According to Bell's picture, sentences are like the complex phrases that we use ordinarily to refer to thoughts without expressing them, with the crucial difference that this is supposed to be the *only* way in which language is related to thoughts: there is *no such thing* as expressing a thought in the way specified by the Articulation Thesis. Dummett's conclusion is, once again, that Bell is not really entitled to claim that he is offering an account of *language* and *thoughts*.

Bell might reply that the view he ascribes to Frege does in fact account for all the notions that Dummett cares so much about. The way in which a sentence is related to its 'linguistic meaning', in fact, satisfies the requirements of the Articulation Thesis. Thus, even though sentences merely *pick out* 'thoughts' or 'conceptual contents' (in the same way in which they pick out truth-values), they can still be said to *express* their linguistic meanings.

But this response does not give Bell what he needs. Recall that what we are trying to understand is how structurally different sentences can express the same thought, where a 'thought' is *what a sentence says or expresses*. Bell purports to explain this phenomenon by pointing out that sentences with different function/argument structures may pick out the same *item*, which bears no isomorphic relation with the sentences that pick it out—and is, indeed, intrinsically *unstructured*. However, Dummett's considerations show that whatever this 'item' might be, it cannot be *what the sentences says or expresses*. Thus, whatever Bell manages to show by appealing to the function/argument model, he does not show how structurally different sentences may say or express the same thing. Here we must not let ourselves be deceived by the fact that Bell calls the items he invokes 'thoughts' or 'conceptual contents'. In order to really address the question of the multiple analyzability of what *Frege* calls

'thoughts' (i.e., *what sentences say or express*), Bell should explain how the same item may be expressed by structurally different sentences, *where the item in question is both internally structured and by and large isomorphic to the sentences that express it*. But the function/argument model, in the form that Bell considers, is not equipped for that task.

In the [next section](#), we will examine the appeal to a *special* version of the function/argument model, which may initially appear to be a better candidate for making sense of the Multiple Analyses Thesis, because it is not liable to the fundamental criticism that Dummett mounts against Sluga and Bell.

7. Geach and the *Special* Function/Argument Model of Sentential Complexity

Peter Geach was probably the first commentator to maintain that in order to make sense of the possibility of multiple analyses one must adopt a function/argument model (as opposed to a part/whole model) of the semantic complexity of sentences, not only at the level of reference, but also at the level of sense. His interpretation has sometimes been assimilated to Bell's. Dummett, in particular, takes Bell and Geach to be equally liable to the fundamental objection that I discussed in the previous section ([Dummett 1981a](#), 264–70). But while there *are* passages in Geach that encourage this assimilation, his reading of Frege is significantly different from a position like Bell's and deserves a separate discussion, even though Geach himself appears to have been unclear about this difference. When Geach argues that a thought, for Frege, is the value of a sense-function for one or more sense-arguments, he is thinking about a *special* kind of function. The special character of the functions to which Geach appeals renders his interpretation immune to Dummett's criticism. But at the same time, it leads to no progress for the vindication of multiple analyses.

Let's begin with an overview of Geach's official position. In explicit opposition to Dummett, Geach maintains that the Articulation Thesis should *not* be ascribed to Frege. He admits that Frege states on several occasions that the thought expressed by a sentence is composed of the senses of the words that compose the sentence. But for Geach, this 'way of speaking' should be 'charitably expounded, not imitated' (Geach 1975, 149; see also 1976a, 444). The metaphor of the 'composition of thoughts', which Frege certainly employed, is for Geach just as inadequate at the level of sense as it is at the level of reference. The reference of 'Denmark', he remarks, contributes to determining the reference of 'The capital of Denmark'; but as Frege himself realized, it would be absurd to conclude, on this basis, that Denmark is *part* of Copenhagen. Similarly, the sense of 'Copenhagen' contributes to determining the sense expressed by 'Copenhagen is a capital'; but according to Geach, it would be equally absurd to conclude, on this basis, that the sense of 'Copenhagen' is *part* of the sense of the sentence in which the expression occurs (1976a, 444). In both cases, according to Geach, Frege should have consistently applied the function/argument model of semantic complexity. A Fregean thought, for Geach, is the *value* of a function from senses to senses:

Frege would quite clearly reject Dummett's doctrine of how the sense of 'John hit Mary' is made up; there is not an object, the sense of 'hit', but a function giving the complete thought as its value for the senses of the names as arguments (Geach 1976a, 445; see also 440, 444, and 1975, 149–50.)

The sense of a concept-expression such as 'ξ hit ζ' is a function that maps senses of singular terms into complete thoughts. In the example at hand, it maps the senses of the proper names 'John' and 'Mary' into the thought expressed by the sentence 'John hit Mary'. This functional understanding of the complexity of sentences *at the level of sense* provides, according to Geach, a straightforward solution to the supposed puzzle about multiple analyses:

[O]ne and the same number may be the value of one function for one argument, of another function for another argument, and of a two-argument function for a certain pair of arguments: the number 16 is the value of the square function for the argument 4, the value of the function 4^ξ for the argument 2, and the value of the function $\xi \cdot \zeta$ for the arguments 2 and 8. Nobody would now ask which one it is *really* And this is the analogy Frege would have us bear in mind. If we suppose definite meanings attached to 'a', 'R', and 'b', then one pattern of propositions is given by 'ξRb'—'aRb, bRb, etc.'; a second by 'aRζ'—'aRa, aRb, etc.'; and a third by 'ξRζ'—all the propositions thus far listed are instances of this pattern: 'aRa, aRb, bRa, bRb, etc., etc.' The proposition 'aRb' comes on all three lists: it illustrates all three patterns, is a value of three different Fregean functions; why not? (Geach 1975, 146)

Strictly speaking, this passage does not concern the problem that I have been discussing in this paper, i.e., the multiple analyzability of *thoughts*, but the multiple analyzability of what Geach calls 'propositions'. Geach uses this term 'in the medieval sense: for a sentence serving, as grammarians would say, to express a complete thought, to say what is or is not so, rather than for the thought so expressed' (1975, 139). A Geachean proposition is a meaningful declarative sentence, a sentence *used* to say that something is the case. The problem that Geach is addressing in the previous passage, therefore, is the problem of how it is possible for the same meaningful sentence to be analyzed into different sets of meaningful expressions. But this problem, for Geach, is closely related to the problem of the multiple analyzability of the thoughts that propositions express: the two problems have the same structure, and admit of the same kind of solution. Geach, in fact, argues that concept-expressions should be conceived as *linguistic functions* that take (in the simplest case) proper names as their arguments and yield propositions as values. A proposition is the *value* of a linguistic function (Geach 1975, 1976a, 1976b, Geach and Anscombe 1961, 143–57). For example, the proposition 'aRb' is the value, say, of the linguist-

tic function ‘ $\xi R\zeta$ ’ for arguments ‘ a ’ and ‘ b ’.³³ Similarly, Geach thinks that the *thought* expressed by the proposition ‘ aRb ’ is the *value*, say, of the sense-function expressed by the linguistic function ‘ $\xi R\zeta$ ’ for the senses expressed by the proper names ‘ a ’ and ‘ b ’. In either case, according to Geach, the problem of multiple analyses turns out to be a pseudo-problem. There is no mystery in the fact that the same number can be the value of different arithmetical functions for appropriate numbers as arguments. Similarly, the same proposition (i.e., the same meaningful sentence) can be the value of different linguistic functions for appropriate meaningful linguistic expressions as arguments—and the same thought can be the value of different sense-functions for appropriate senses as arguments.

Geach insists that in order to understand the possibility of multiple analyses, we must bear in mind the analogy with arithmetical functions. This strongly suggests that he is anticipating the strategy championed by Bell. But a closer inspection shows that Geach’s interpretation stands in a more complicated relationship to an interpretation like Bell’s. Geach, in fact, is *wrong* in maintaining that arithmetical functions can serve as a good analogy for illustrating the view he ascribes to Frege. The functions with which Geach is working (be they linguistic functions or sense-functions) have special features that do not belong to functions in general and that sort them apart, in particular, from the ordinary arithmetical functions that Geach wishes to use as models. For our present purposes, it is worth emphasizing three such features.³⁴

i) The arguments of Geachean functions are *parts* of their values. The proper names ‘ a ’ and ‘ b ’ are parts of the proposition ‘ aRb ’—and their senses are parts of the corresponding thought.

³³For a critique of the claim that Frege construed concept-expressions, and more generally function-names, as linguistic functions, see Oliver (2010, especially 131–41).

³⁴The following remarks draw on Brandom (1968), Sullivan (1992), Levine (2002), and Hylton (2005, chap. 7).

This is obviously not the case for functions in general: the number 4 is not part of 16, even though there is a function (indeed many functions) whose value is 16 for argument 4 (see Hylton 2005, 133; Levine 2002, 200, 211; Brandom 1968, 268).³⁵

ii) Geachean functions are not fully representable in set-theoretical terms, as sets of order pairs, or as mappings between two sets of objects. Such a representation would leave out the fact that the values of those functions are always *structured items* containing their respective arguments. Again, this is obviously not the case for functions in general (see Hylton 2005, 134).

iii) All the values of a Geachean function *share the same structure*. We may also say that they share the same form. Here it is helpful to have in view some of Russell’s characterizations of ‘propositional functions’, which are much closer to Geachean functions than ordinary arithmetical functions. In the *Principles of Mathematics*, he writes that the constancy of form that is exhibited by a certain number of propositions is expressed by the fact that they are all values of the same propositional function. He also refers to the values of a propositional function as its ‘instances’, and says that a propositional function ‘typifies’ a class

³⁵The question of whether or not the values of a Geachean function contain the *function* itself (in addition to its arguments) is more controversial. Geach would fiercely oppose this idea. He insists that a linguistic function is not a ‘quotable part’ of a sentence, but (in the simplest case) *what has to be done to a proper name to obtain a proposition*. Similarly, for Geach, a sense-function is not a thought-component, but (in the simplest case) *what has to be done to the sense of a proper name to obtain a thought*, which is not another part or element of the thought. Sullivan appears to side with Geach on this point when he writes that ‘[i]f a predicate is a first level linguistic function it cannot be a literal *part* of any sentence’ (Sullivan 1992, 96); but he also writes that ‘[w]hen linguistic functions are specified in such a way as to respect intuitions cohering around the part-whole model [which is precisely what Geach does, according to Sullivan], they can be regarded as constituent elements of sentences’ (101). On the other hand, Levine and Brandom see no problem in the idea of a function being part of its own values (Levine 2002, 211, 213; Brandom 1968, 268). For the present purposes, it suffices to notice that the values of Geachean functions always contain their arguments.

of propositions that share a common form (Russell 1903, §§81–82). Moreover, in other writings of the same period, he states that analyzing a proposition into argument(s) and propositional function is for him the *same* as exhibiting the proposition as an ‘instance’ or ‘special case’ or a certain ‘type’.³⁶ These remarks of Russell’s on propositional functions apply as well to Geachian functions. This is why Geach can intelligibly say, in the last passage quoted above, that a proposition ‘illustrates’ the pattern formed by the propositions that are values of the same linguistic function. This would be a puzzling remark if it referred to functions in general, and to ordinary arithmetical functions in particular. Of course, given a bunch of numbers, we may say that we can discern a pattern in them, meaning that they are all values of a certain function. The numbers 1, 4, 16, 64 and 256, for example, form a pattern, in the sense that they are all values of the function 4^x ; but it is not clear what it would mean to say that each of those numbers, taken singularly, ‘illustrates’ the pattern that they form when put together. By contrast, a Geachian proposition, say ‘ aRb ’, can properly be said to illustrate the pattern formed by the propositions ‘ aRa ’, ‘ aRb ’, ‘ aRc ’, and ‘ aRd ’, because it exhibits the structure or form that they all have in common. Those propositions exemplify the same form; they are all instances of the same type. This is at least part of what we bring out by representing them as values of the same linguistic function, ‘ $aR\xi$ ’; and the same holds, *mutatis mutandis*, for thoughts and sense-functions.

By appealing to functions that have these special features, Geach avoids the fundamental criticism that Dummett levels against Bell. For Geach, both propositions (i.e., meaningful sentences) and thoughts are structured items. Moreover, the structure of propositions mirrors the structure of the thoughts they express. So Geach can account for the idea that proposi-

³⁶See the passages from Russell (1904) quoted and discussed in Levine (2002, 207).

tions *express* the thoughts they convey by displaying their internal articulation. The function/argument model, when developed *à la* Geach, incorporates a substantial component—even though perhaps not the entirety³⁷—of the Articulation Thesis, which suffices to vindicate the distinction between expressing a thought and merely encoding or referring to it. In spite of his misleading use of arithmetical analogies, Geach is not culpable of conflating the complexity of sentences at the level of sense to the complexity of referring expressions.

The question, now, is whether Geach’s proposal helps to vindicate the Multiple Analyses Thesis. It is significant that Geach applies his special function/argument model only to the first kind of case of multiple analyses reviewed in Section 2. But in that sort of case, it is hard to resist a Dummettian approach. There are many ways of analyzing the sentence ‘ aRb ’ into arguments and linguistic functions; but it seems that *one* of those analyses—namely its analysis into the linguistic function ‘ $\xi R\zeta$ ’ and the arguments ‘ a ’ and ‘ b ’—has a privileged status, because it *accounts* for the possibility of all the others. Geach does not suggest or provide any reason for supposing that things stand in the realm of thoughts any different than they stand in the realm of meaningful sentences. Thus Geach’s proposal, in so far as we stick to his own illustrations, cuts no ice against the idea that for each thought there are many possible *derivative* analyses, but only one *fundamental* analysis (see Sullivan 1992, 98–99).

In order to vindicate the Multiple Analyses Thesis, Geach would have to show how his proposal can be applied, for example, to cases of the second kind, which Dummett is forced to dismiss. Unlike Dummett, Geach does not explicitly deny that ‘ $a//b$ ’ and ‘ $D(a) = D(b)$ ’ can express the same thought. But he does nothing to show that his *special* function/argument model can account for this sort of case. Pointing out that the thought

³⁷As observed in note 35, it is debatable whether the function/argument model can incorporate the part/whole model completely or only partially.

expressed by the proposition ' $a//b$ ' can be the value of the sense-function expressed by ' $\xi//b$ ' for the sense of ' a ' as argument, as well as the value of the sense-function expressed by ' $a//\xi$ ' for the sense of ' b ' as argument, does very little service. The question is how the propositions ' $a//b$ ' and ' $D(a) = D(b)$ ' may express the same thought. But it is mysterious how we could reach this result by invoking Geach's special function/argument model. Of course, he could easily account for this sort of case by pursuing with consistency the analogy with arithmetical functions, as Bell does. But in that case, Geach would have to relinquish the advantages of the special function/argument model, and his account would become liable, like Bell's, to Dummett's fundamental objection. I conclude, on these grounds, that Geach provides no genuine alternative to the Dummettian and anti-Dummettian sides of the debate.

8. The Multiple Analyzability of Organic Wholes

In the previous sections, I showed that there are compelling exegetical reasons for attributing to Frege the Articulation Thesis as well as the Multiple Analysis Thesis. Moreover, I sought to bring out the good philosophical insights that animate the two opposite camps of the exegetical debate. Dummett is right when he maintains (against Sluga and Bell) that thoughts must be regarded as internally articulated, in a way that mirrors, by and large, the manifest articulation of the sentences that express them. If we give up the Articulation Thesis, he argues, we lose our entitlement to claim that we are talking about *thoughts* and *language* in the full sense of these terms. But Dummett provides no comparably convincing independent basis for his additional claim, namely that each thought must have a unique identifying structure, so that two structurally different sentences cannot express the same thought. In fact, one has the impression that Dummett defends this further claim simply because he thinks

he *has to*, since he believes, in accordance with the Underlying Assumption, that *essential articulatedness implies unique articulation*. In any case, Dummett never envisions the possibility of questioning this assumption. By rejecting the Multiple Analyses Thesis, Dummett becomes a target for the legitimate objections of the commentators of the opposite camp. These commentators protest that there is no reason to reject the Multiple Analyses Thesis, which amounts to the truism that we can say the same thing in different ways. However, they offer no comparably convincing reason for their additional claim, namely that thoughts are intrinsically unstructured. In fact, one has the impression that they defend this further claim simply because they think they *have to*, since they believe, in accordance with the Underlying Assumption, that *lack of unique articulation requires lack of any articulation*. In any case, they never envision the possibility of questioning this assumption. But by denying the Articulation Thesis, they become liable to Dummett's objections.

My positive proposal aims to overcome this standoff. It takes place in three steps. The first two steps are systematic, and the third one exegetical. The first step consists in the following suggestion: In order to reconcile the two theses in a manner that incorporates the philosophical insights of both camps of the debate, we need to reject the Underlying Assumption. If we do so, we make room for a view of this sort. On the one hand, (a) it is constitutive of thoughts that they are internally articulated, in a way that corresponds by and large to the grammatical articulation of the sentences that express them. Sentences are, in the central case, made up of words with meanings of their own, and their grammatical structure displays the structure of the thoughts they express. But on the other hand, (b) the same thought can be articulated in many equally legitimate ways, none of which has to be able to claim absolute priority over the others. We can *rephrase* the thought expressed by a certain sentence by means of a structurally different sentence; we can *put the*

same thought in other words, where the difference may concern the semantic structure of our forms of expression. The alternative ways in which thoughts can be articulated highlight objective features of the thoughts themselves (rather than merely subjective features of *our* engagements with thoughts, as Sluga's interpretation has it): a thought is the sort of thing that can be articulated in *this*, or *that*, or *that other* way. The choice of a particular way of articulating a thought is dictated by the need of making perspicuous a particular set of its inferential relations. In order to make perspicuous certain inferential relations, we choose a determinate phrasing; in order to make perspicuous other logical relations, we choose a different form of expression; but in each case, we are still expressing the *same* thought. In a slogan: *Essential articulatedness without unique articulation*.

The problem is that a position of this sort can appear unavailable, because the Underlying Assumption may seem inescapable. This takes us to the second and more substantial step of my proposal. I submit that the Underlying Assumption is compulsory if we conceive of the relation between a thought and its parts in accordance with an *atomistic* model of the part/whole relation, but can be resisted if we adopt an alternative, *organic* model of the part/whole relation. Let me begin to spell out this claim by contrasting two kinds of wholes.

There are wholes that can be appropriately characterized by means of what I shall call an *atomistic* notion of 'part' and an *aggregative* notion of 'whole'. Suppose that, having to move my bookshelf, I take the books out of the shelves and arrange them in piles on the desk. Each pile is composed of many volumes; it has 'parts'. The fact that a volume belongs to a certain pile is quite accidental. Each volume can be what it is whether or not it happens to belong to a certain pile, and whether or not it happens to belong to a pile at all—or lies instead on the table all by itself. The relation between books and piles is a part/whole relation where the whole is a mere

aggregate of independently conceivable components, and the parts are atomistically independent of the whole to which they contingently belong.

For wholes of this sort, a version of the Underlying Assumption is in fact inescapable. Each pile of books, qua pile of books, has a *unique* ultimate analysis, which specifies the books of which it is composed and the manner they are put together. There is a sense in which we may analyze each pile in many alternative ways: we may describe a 10-volume pile as composed of two 5-volume parts, or as composed of an 8-volume part and a 2-volume part, and so on. But these are only *partial* analyses of the pile. For each pile, there can be many partial analyses, but only *one* ultimate analysis, which accounts for all the possible partial analyses. Each part singled out through a merely partial analysis is nothing but the combination of some of the parts revealed by the ultimate analysis of the whole. An aggregative whole, accordingly, can be appropriately characterized by specifying its ultimate constituents and their manner of composition.

But arguably, there are also wholes of a different kind: wholes that can only be characterized by means of what I shall call a *functional* (as opposed to an atomistic) notion of 'part' and an *organic* (as opposed to an aggregative) notion of 'whole'. There is a long tradition in the history of philosophy, ultimately going back to Aristotle, which takes the living organism as the paradigmatic example of this latter kind of whole. According to this tradition, the living organism is essentially articulated into parts: there is no such thing as an unstructured, 'monolithic' organism. But its parts, i.e., eyes, kidneys, arms, etc., are what they are in virtue of the *function* that they fulfill within the whole. A physically indistinguishable piece of matter that functions as a tooth in the context of one organism can conceivably function in a different way in a different kind of organism—say, as a nail—and *be*, therefore, in the context of that other organ-

ism, a different functional part.³⁸ The living organism is made up of parts that cannot be what they are except as parts of the appropriate wholes.

This last claim requires some clarifications.³⁹ First, the identity of functional parts, as *kinds* of functional parts, is not tied to the *particular* organism to which they belong. Different organisms can have parts that fulfill the same function, and thus share the same *kinds* of functional parts: you and I, for instance, have both a *heart*, which is individuated as such by the function that it fulfills in our respective bodies. Secondly, the functional part of an organism may continue to be the same *particular* functional part when it is transplanted into a different organism, as long as the transplant is successful and the part functions appropriately in the new organism. Thirdly, one might wonder about the status of functional parts that have been separated from a living or recently deceased organism, perhaps awaiting to be transplanted into a new organism. Should we say, in accordance with a view often attributed to Aristotle, that a ‘severed hand is not a hand’—or, as Aristotle actually puts it, that a severed hand is a hand ‘only homonymously’ (Aristotle 1984, vol. 2, *Politics* 1253a19-25; see also *Metaphysics* 1035b23–25)? Statements of this sort are often dismissed as obviously absurd; but the dismissal might be premature. Here is a way of construing those statements that render them, at the very least, worthy of serious consideration. (My aim, here, is not to make any exegetical claim about Aristotle, but to clarify the notion of organic whole introduced above.) We should distinguish between the primary and the derivative senses of terms for functional parts of living organisms. A hand (or a heart, or a tooth, or a nail), in the primary sense of the term, is what *actually fulfills a certain function*

³⁸For a discussion of this point and other similar examples, see Thompson (2008, 53–56).

³⁹I am grateful to an anonymous referee for pressing me on some of the following issues.

in a certain living organism. If the hand is severed from the living body, or if the body dies, we continue to call it a ‘hand’, and not without right; but we use the word in a different and derivative sense, to mean (say) *what used to be a hand in the primary sense of the term*. This is a case of homonymy, because the same term is used to express different notions; but it differs from other cases of homonymy (such as ‘bank’ the riverbank and ‘bank’ the financial institution), because the two notions are closely related: more specifically, one presupposes the other. Similarly, we may speak of a part of a statue as a ‘hand’, using the word to express a different derivative notion—say, the notion of *what visually looks like a hand in the primary sense of the term*. The same holds of the case, envisioned by an anonymous referee, of ‘a fully functioning heart that is grown in isolation in a lab and never implanted in any organism’. To call the item in question a ‘heart’ is to use the term in a derivative sense. The term conveys the notion, say, of *what would function as a heart in the primary sense of the term if properly implanted in the appropriate sort of organism*—or, perhaps, the notion of *what was designed to do so*. In either case, we presuppose the primary notion of a heart, as what actually functions as a heart in a living organism. In this primary sense of the term, an isolated heart could not possibly exist.⁴⁰

Organic wholes, like aggregative wholes, are articulated into parts. But unlike aggregative wholes, they have a distinctive kind of unity, which is due to the fact that their functional parts cannot be what they are—except in derivative senses—unless they are parts of appropriate wholes. As anticipated, I hold that when we are dealing with organic wholes, any relevant version

⁴⁰There is of course an atomistically-minded philosophical tradition that challenges this sort of account of the living organism and rejects the very idea of an organic whole. An instructive manifesto of this atomistic approach can be found in one of the founding texts of analytic philosophy, Moore (1903, esp. §§20–22). My aim, in the last two paragraphs, was not to give a full defense of the organicist tradition, but to show that it deserves more serious consideration than often assumed.

of the Underlying Assumption is not compulsory. In order to see why this is the case, let's focus on the living human organism.

The living human organism is composed of many anatomical parts—organs and structures—which are identified by their physiological functions. Browsing the chapters of an anatomy textbook, we find diagrams that display a great number of anatomical parts in their mutual arrangements, accompanied by descriptions of their form, position, and function. There will be diagrams, say, of the cardiovascular system, of the nervous system, of the visual apparatus, of the digestive apparatus, etc. But we will look in vain for *the* diagram of *the* anatomical parts of the organism. The very question of what are *the* ultimate anatomical parts of the organism is misplaced. Of course, at the end of a good textbook, say of *Gray's Anatomy*, we find an index of all the parts that have been discussed in the previous chapters, and a student should be able to say, for each part, what is its function, form, position, tissue, etc. But there is no subset of the index which provides a list of 'the ultimate anatomical building blocks' of the organism, to which all the other anatomical parts can be reduced. In order to discern different anatomical structures, we need to carve up the body in different ways, and there is no ultimate analysis of the organism that accounts for all the others. In a description of the digestive apparatus, for example, the mouth will appear as an anatomical part; but it will not figure as a unit at all in a description of the cardiovascular system, even though there are certainly arteries and veins going through the various parts of the mouth; and there is no underlying anatomical structure in terms of which both the cardiovascular system and the digestive apparatus can be reduced. More specifically, there is no set of ultimate anatomical units of which we can say: the cardiovascular apparatus and the digestive system are nothing but combinations of parts taken from this set. To point out that all organs and anatomical structures are ultimately made up of atoms would be irrelevant,

for at *that* level of description all anatomical complexity is lost. It is no accident that an anatomy textbook does not include at all a 'diagram' that displays the atomic composition of the organism. This is not because the diagram would have to be too big in order to be readable, or because we lack the relevant knowledge, but because such a diagram would tell us *nothing* of what anatomy has to tell us. The living organism, as studied in tandem by anatomy and physiology, is not the sort of thing that can be characterized by specifying a set of ultimate constituents and their manner of combination.

An anonymous referee voiced some skepticism about the significance of the fact that anatomy textbooks contain distinct anatomical diagrams, but no single complete anatomical diagram: 'from the fact that anatomical diagrams usually focus, for pragmatic-medical reasons, on some sub-system, such as the cardiovascular system, it does not follow that no complete diagram, with all systems overlapping, can be given; it might just not be very useful to do so.' We can certainly entertain the idea of taking all the diagrams contained in an anatomy textbook, adjust scale and orientation, and overlap them. If we use the diagrams printed in actual textbooks, the result would probably look like a dark patch of color with the contours of a human body. Perhaps, however, this is a merely technical inconvenience that could in principle be overcome. The point I want to make applies also to the superimposition of just two diagrams, where no such inconvenience arises. Suppose we overlap a diagram of the cardiovascular system and one of the digestive apparatus. The distinctions drawn by each diagram through lines and colors would remain discernible. A combined diagram of this sort might not only be readable, but also useful: it might be helpful, say, in order to show which veins and arteries go through the stomach and how they hook up to the overall cardiovascular system. (Overlap diagrams of this sort are in fact quite common in anatomy textbooks.) The point, however, is that the two dia-

grams, even if combined in a single figure, remain distinct, qua anatomical diagrams. We retrieve each diagram from the figure by focusing on some aspects of the figure and ignoring others as irrelevant. For example, if we look at it as a diagram of the digestive apparatus, we must ignore the heart, even though it is clearly represented in the figure. Similarly, the alleged super-anatomic diagram envisioned by the referee, even if technically realizable, would not display the ultimate anatomical structure of the human body, but would be a figure from which we could retrieve, through a process of abstraction, different diagrams displaying actual anatomical structures. The case mentioned by the referee, therefore, does not constitute an objection to my claim about the multiple anatomical analyzability—and the correlative absence of a single set of ultimate anatomical parts—of the human body.

Let's now apply these considerations to the case of thoughts and their parts. Suppose we adopt an organic—as opposed to an aggregative—conception of the internal complexity of thoughts. To do so is to hold that thoughts are essentially articulated into parts, but by parts that are individuated by the function that they actually fulfill within the whole, i.e., by the way in which they contribute to the representation of things as being a certain way. If we conceive of thoughts in this way, we are entitled to reject the Underlying Assumption. This should be readily visible if we keep in view the analogy with the anatomical complexity of living organisms. I have argued that the same organism can be carved up in many different ways in order to highlight different aspects of its internal anatomical structure. Each different 'analysis' of the organism brings out an objective feature of the organism: the organism would not be what it is if it did not have such an anatomical structure, or if it had no anatomical structure at all. And yet, there is no such thing as *the* ultimate, unique anatomical analysis of the organism, which would make perspicuous at once *all* its physiological functions, and to which all the other analyses could be reduced. *Similarly*, one can main-

tain that the same thought can be carved up in many alternative ways, each of which highlights an aspect of its internal structure and thus makes perspicuous a certain set of its inferential relations. Each of these alternative analyses of the thought brings out an objective feature of the thought: the thought would not be what it is if it did not have such a logical structure, or if it had no logical structure at all. And yet, there is no such thing as *the* ultimate, unique analysis of the thought, which would make perspicuous at once *all* its inferential relations, and to which all the other analyses could be reduced. There is no unique set of ultimate logical building blocks of which each thought is composed, in the same way in which there is no unique set of ultimate anatomical parts of which an organism is built up.⁴¹

The third and last step of my positive proposal is that there are independent reasons for attributing to Frege an organic conception of the internal complexity of thoughts, in explicit opposition to a widespread aggregative conception. This attribution is supported by Frege's commitment to the Context Principle and the related doctrine of the primacy of judgment.

The Context Principle concerns the level of language and states, as I have already mentioned, that 'it is only in the context of a proposition that words have any meaning' (Frege 1884, §62). This dictum has been the subject of much controversy. It is often assumed that under any literal understanding, the principle faces obvious and decisive objections. The task of a charitable reader, accordingly, is often taken to consist in identi-

⁴¹My claim is that the organic conception of the internal complexity of thoughts *makes room* for a position that combines the Articulation Thesis and the Multiple Analyses Thesis, not that it *necessitates* it. One may conceive of thoughts as organic wholes, and yet maintain, in virtue of subsidiary commitments, that each thought must have a unique ultimate analysis. Arguably, this is the position advocated by Wittgenstein's *Tractatus*. Wittgenstein insists that each thought or proposition must have a unique ultimate analysis (1922, 3.25), even though his firm commitment to a version of the Context Principle (3.3ff.) suggests that he conceives of thoughts and propositions as organic wholes.

ifying the ‘kernel of truth’ hidden behind the misleading letter of the principle. The resulting interpretations generally posit some form of dependence of meaningful words on meaningful sentences, but the dependence in question is generally weaker than demanded by a conception of meaningful sentences as organic wholes. There is however a reading of the Context Principle that accords with its letter and construes meaningful sentences as organic wholes, without being liable to the most common objections. It is no doubt a controversial reading of the principle, and properly defending it on both exegetical and philosophical grounds would require an extensive discussion. But for the present purposes, the following sketch should suffice.⁴²

The crucial move is to draw a distinction that goes beyond, but not against, what Frege has explicitly written. We should distinguish between the meanings that words *actually* have on particular occurrences, and their semantic *potentialities*, which are fixed by the existing conventions of the language. The Context Principle, according to this reading, holds that words have a meaning, in actuality and not merely in potentiality, only on those occasions in which they make a contribution to the meaning of a complete sentence, because for a word to actually have a meaning just *is* for it to fulfill a certain function in a meaningful sentence. Thus, there is no such thing as an isolated word or expression actually expressing a sub-sentential content. We may identify the semantic potentialities of isolated words; but such potentialities are actualized only when the words do their job in meaningful sentences. If we just look at the word ‘bank’, for example, we may confidently say that it has in English at least two semantic potentialities: it can mean river-bank, or a kind of financial institution; but it will actually have either of those meanings only when it occurs in complete sentences which say something intelligible about river-banks or financial institutions.

⁴²I discuss this reading of the Context Principle in more detail in Bronzo (2015, 2017).

The same point applies to non-ambiguous words. Dictionaries, which are often taken to be a counterexample to Frege’s formulation of the Context Principle, are not by themselves a problem for the present reading, because one can plausibly maintain that the main function of dictionaries is to specify the semantic potentialities of words. This reading of the Context Principle does not assert, as Sluga’s does, that sentences are intrinsically devoid of semantic articulation, and in this sense prior to the meanings of words. It is fully compatible with *linguistic compositionality*, if by this we mean the idea, repeatedly emphasized by Frege, that the meanings of sentences, in so far as they are semantically articulated, are determined (at least in part) by the meanings of their parts and the way they are put together.⁴³ It is also compatible with the fact that words may carry the same meanings in an indefinite number of different sentences. And it is equally compatible with what may be termed *linguistic stability*, i.e., the fact that words, by default, mean on new occasions what they always meant. This is so because the present construal of the Context Principle can be supplemented with the claim that meaningful words, by default, actualize semantic potentialities established by the existing linguistic conventions. In this way, one can account for the capacity of competent speakers to understand sentences that they have never heard before. When we encounter a sentence, the default assumption is that its constituent words work in accordance with the existing conventions of the language. But according to the present understanding of the Context Principle, that assumption is always defeasible: Whether a word, on any particular occasion, actualizes a given conventional semantic potentiality is *conclusively* settled only by whether the word actually contributes in the appropriate way to the expression of a complete sentential content. Finally, it is worth noting that some common uses of isolated words or

⁴³For Frege’s endorsement of this construal of linguistic compositionality, see the passages cited after the first quotation in Section 1.

sub-sentential phrases, such as the use of names on products, vehicles, and buildings ('poison', 'ambulance', 'Ministry of Defense'), do not by themselves refute the present reading of the Context Principle, for one could hold that such words or phrases, when used in those ways, are abbreviations or elliptical versions of complete sentences ('This is poison', 'This is an ambulance', etc.). It is not obvious, therefore, that a reading of the Context Principle that accords with its letter and construes meaningful sentences as organic wholes must deny any manifest feature of language.

An analogous conception can also be attributed to Frege at the level of the *contents* of sentences, i.e., at the level of 'judgeable contents' or 'thoughts'. Throughout his career, Frege subscribes to a view about the priority of judgments over concepts. He opposes the view of thoughts (or judgeable contents) as aggregates of prior and independent components and holds that he always comes by the parts of a thought (or judgeable content) by analyzing a complete thought (or judgeable content):

[I]nstead of putting a judgment together out of an individual subject and an already previously formed concept as predicate, we do the opposite and arrive at a concept by splitting up the content of possible judgment. (Frege 1880–81, 18, translation 17)

What is distinctive of my conception of logic is that I begin by giving pride of place to the content of the word 'true', and then immediately go on to introduce a thought as that to which the question 'Is it true?' is in principle applicable. So I do not begin with concepts and put them together to form a thought or judgment; I come by the parts of the thought by analyzing the thought. (Frege 1919, 273, translation 253)

Thought-components always come as parts of complete thoughts. There is no such thing as a thought-component 'in isolation', which may become part of a thought only incidentally, at a subsequent and optional stage. The reason for this, I suggest, is that a thought-component, for Frege, is what it is in virtue of the

logical role that it performs within a whole thought. Thoughts are articulated into parts, but parts that are identified by the function that they fulfill within the whole. This organic conception of thoughts goes hand in hand with the organic conception of sentences expressed by the Context Principle.⁴⁴ If there is no such thing as a thought-component in isolation, then there is no such thing as an isolated word signifying an isolated thought-component. Conversely, if there *were* thought-components in isolation, it would be hard to see why we could not express them by means of significant sub-sentential expressions, prior to and independently of the employment of those expressions in complete sentences. If this is correct and Frege does indeed conceive of thoughts as organic wholes, he can reject the Underlying Assumption, for the reasons given above, and coherently endorse both the Articulation Thesis and the Multiple Analysis Thesis.

There are other commentators who have argued, as I have just done, that in order to understand Frege's doctrine of multiple analyses, we need to appreciate his anti-atomistic commitments. I shall conclude by pointing out some differences between my proposal and the accounts of these other commentators. One such commentator, as we saw in Section 4, is Sluga. The form of anti-atomism that Sluga attributes to Frege construes thoughts as intrinsically unstructured, and it is because thoughts are intrinsically unstructured, according to Sluga, that multiple analyses are possible. Thus Frege's anti-atomism, in Sluga's account, leaves untouched the Underlying Assumption and makes room for the Multiple Analyses Thesis at the price of giving up the Articulation Thesis. By contrast, the form of anti-atomism that I have attributed to Frege is designed to undermine the Un-

⁴⁴The idea that there is a close connection between the Context Principle and Frege's doctrine of the primacy of judgment is not uncommon among commentators; see Bell (1979, 5), Sluga (1987, 86), Conant (1998, 231–33). For a dissenting voice, see Dummett (1981a, 295–96, 539).

derlying Assumption and to show that Frege is entitled to the simultaneous assertion of the two apparently incompatible theses.

James Levine has also argued, more recently, that Frege's view about multiple analyses rests on his 'non-atomistic mereology' (2002, 201–03). However, Levine's contrast between 'atomistic' and 'non-atomistic mereologies' differs from the contrast between alternative models of the part/whole relation that I have described. Levine points out that for Frege the same whole can be seen as composed of different sets of parts, according to the particular notion of part that we take into consideration: the same regiment may be seen as composed of 3 battalions, 10 companies, or 1000 soldiers, whereas for the advocates of an atomistic mereology, 'every whole admits of a unique analysis into simple parts' (202). This distinction, however, is orthogonal to my distinction between aggregative and organic wholes: the point that Levine attributes to Frege applies indifferently to both kinds of wholes. But more importantly, it is not clear how the distinction drawn by Levine helps to make sense of the idea that the same thought may be analyzed into different (not mutually reducible) sets of parts. In this case, in fact, the relevant notion of 'part' *has been fixed*: what we are asking is how the same thought may be composed of different sets of *logical parts*. The problem, therefore, cannot be solved by pointing out that there is no determinate answer to the question 'How many parts compose a regiment?' unless we specify the kind of 'parts' that we have in mind (whether battalions, or companies, or soldiers). The problem can be avoided, I have argued, when we see that a thought, for Frege, is a *particular* kind of whole—namely, an

organic whole, whose parts are identified by the function that they fulfill in the whole in which they occur.⁴⁵

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⁴⁵An anonymous referee expressed the impression that the rejection of the Underlying Assumption, which is central to my proposal, can also be found in Levine (2002) and Textor (2009). I agree that Levine wishes to reject the assumption, but I don't think that his attempt is successful, for the reason I gave in the text. With regard to Textor, it doesn't seem to me that he is even trying to reject the assumption. His commitment to the assumption is explicit: 'If we cannot privilege one way of decomposing a thought as mirroring the structure of the thought, the thought itself cannot have a structure' (112; see also 109). It is true that Textor seeks to reconcile the Articulation Thesis and the Multiple Analyses Thesis, and in this respect, my account is similar to his. But he seeks to carry out this reconciliation by distinguishing two notions of 'thought': *decomposed thoughts*, to which the former thesis applies, and *types* of decomposed thoughts, to which the latter thesis applies. Types of decomposed thoughts, for Textor, are abstract entities which admit of alternative, mutually irreducible decompositions precisely because they are intrinsically unstructured.

References

- Aristotle, 1984. *The Complete Works of Aristotle*, 2 vols., edited by J. Barnes. Princeton, NJ: Princeton University Press.
- Bell, David, 1979. *Frege's Theory of Judgment*. Oxford: Oxford University Press.
- , 1981. 'The Place of the *Grundlagen* in Frege's Development.' *Philosophical Quarterly* 31: 209–24.
- , 1987. 'Thoughts.' *Notre Dame Journal of Formal Logic* 28: 36–50.
- , 1996. 'The Formation of Concepts and the Structure of Thoughts.' *Philosophy and Phenomenological Research* 61: 583–96.
- Bermúdez, José Luis, 2001. 'Frege on Thoughts and Their Structure.' *Logical Analysis and History of Philosophy* 4: 87–105.
- Brandt, Robert, 1968. 'Frege's Technical Concepts.' In *Frege Synthesized*, edited by L. Haaparanta and J. Hintikka, pp. 253–95. Dordrecht: Reidel.
- Bronzo, Silver, 2011. 'Context, Compositionality, and Nonsense in Wittgenstein's *Tractatus*.' In *Beyond the Tractatus Wars: The New Wittgenstein Debate*, edited by R. Read and M. Lavery, pp. 84–111. New York and Abingdon: Routledge.
- , 2015. 'Words, Sentences, and Speech Acts: An Interpretation and Defense of the Context Principle.' PhD Dissertation, The University of Chicago.
- , 2017. 'Frege and Propositional Unity.' *British Journal for the History of Philosophy* 25: 750–71.
- Burge, Tyler, 2005. *Truth, Thought, Reason: Essays on Frege*. Oxford: Oxford University Press.
- Conant, James, 1998. 'Wittgenstein on Meaning and Use.' *Philosophical Investigations* 21: 222–50.
- Currie, Gregory, 1985. 'The Analysis of Thoughts.' *Australian Journal of Philosophy* 63: 283–98.
- Dummett, Michael, 1981a. *The Interpretation of Frege's Philosophy*. Cambridge, MA: Harvard University Press.
- , 1981b. *Frege: Philosophy of Language*, 2nd ed. Cambridge, MA: Harvard University Press.
- , 1991. *Frege and Other Philosophers*. Oxford: Oxford University Press.
- Frege, Gottlob, 1879. *Begriffsschrift*. Halle an der Saale: Louis Nebert. Partially translated in Frege (1997), pp. 47–78.
- , 1879–1891. 'Logik.' In Frege (1969), pp. 1–8. Translated as 'Logic' in Frege (1979), pp. 1–9.
- , 1880–1881. 'Booles rechnende Logik und die Begriffsschrift.' In Frege (1969), pp. 9–52. Translated as 'Boole's Logical Calculus and the Concept-Script' in Frege (1979), pp. 9–46.
- , 1882. Letter to Marty, 29 August 1882. In Frege (1976), pp. 162–65. Translated in Frege (1997), pp. 79–83.
- , 1884. *Die Grundlagen der Arithmetik*. Breslau: W. Koebner. Translated as *The Foundations of Arithmetic*, 2nd ed., translated by J. L. Austin. Evanston, IL: Northwestern University Press, 1980.
- , 1891. *Funktion und Begriff*. Jena: Hermann Pohle. Translated as 'Function and Concept' in Frege (1997), pp. 130–48.
- , 1892a. 'Über Sinn und Bedeutung.' *Zeitschrift für Philosophie und philosophische Kritik* 100: 25–50. Translated as 'On Sinn and Bedeutung' in Frege (1997), pp. 151–71.
- , 1892b. 'Über Begriff und Gegenstand.' *Vierteljahresschrift für wissenschaftliche Philosophie* 16: 192–205. Translated as 'On Concept and Object' in Frege (1997), pp. 181–93.
- , 1893. *Grundgesetze der Arithmetik*, Band I. Jena: Hermann Pohle. Translated as Frege (2013), vol. I.

- , 1897. 'Logik.' In [Frege \(1969\)](#), pp. 137–63. Translated as 'Logic' in [Frege \(1979\)](#), pp. 126–51.
- , 1897–1898. 'Begründung meiner strengeren Grundsätze des Definierens.' In [Frege \(1969\)](#), pp. 164–70. Translated as 'The Argument for My Stricter Canons of Definition' in [Frege \(1979\)](#), pp. 152–56.
- , 1906. 'Kurze Übersicht meiner logischen Lehren.' In [Frege \(1969\)](#), pp. 213–18. Translated as 'A Brief Survey of My Logical Doctrines' in [Frege \(1979\)](#), pp. 197–202.
- , 1914a. 'Logik in der Mathematik.' In [Frege \(1969\)](#), pp. 219–70. Translated as 'Logic in Mathematics' in [Frege \(1979\)](#), pp. 203–50.
- , 1914b. Letter to Jourdain, January 1914. In [Frege \(1976\)](#), pp. 127–28. Translated in [Frege \(1997\)](#), pp. 319–21.
- , 1915. 'Meine grundlegenden logischen Einsichten.' In [Frege \(1969\)](#), pp. 271–72. Translated as 'My Basic Logical Insights' in [Frege \(1979\)](#), pp. 251–52.
- , 1918a. 'Der Gedanke. Eine Logische Untersuchung.' *Beiträge zur Philosophie des deutschen Idealismus I*: 58–77. Translated as 'Thought' in [Frege \(1997\)](#), pp. 325–45.
- , 1918b. 'Die Verneinung. Eine Logische Untersuchung.' *Beiträge zur Philosophie des deutschen Idealismus I*: 143–57. Translated as 'Negation' in [Frege \(1997\)](#), pp. 346–61.
- , 1919. 'Aufzeichnungen für Ludwig Darmstaedter.' In [Frege \(1969\)](#), pp. 273–77. Translated as 'Notes for Ludwig Darmstaedter' in [Frege \(1979\)](#), pp. 253–57.
- , 1923. 'Logische Untersuchungen. Dritter Teil: Gedankengefüge.' *Beiträge zur Philosophie des deutschen Idealismus III*: 36–51. Translated as 'Compound Thoughts' in [Frege \(1984\)](#), pp. 390–406.
- , 1924–1925. 'Erkenntnisquellen der Mathematik und der mathematischen Naturwissenschaften.' In [Frege \(1969\)](#), pp. 286–94. Translated as 'Sources of Knowledge of Mathematics and the Mathematical Natural Sciences' in [Frege \(1979\)](#), pp. 267–74.
- , 1969. *Nachgelassene Schriften*, edited by H. Hermes, F. Kambartel, and F. Kaulbach. Hamburg: Felix Meiner.
- , 1976. *Wissenschaftlicher Briefwechsel*, edited by G. Gabriel, H. Hermes, F. Kambartel, C. Thiel, and A. Veraart. Hamburg: Felix Meiner.
- , 1979. *Posthumous Writings*, edited by H. Hermes, F. Kambartel, and F. Kaulbach, translated by P. Long and R. White. Oxford: Blackwell.
- , 1984. *Collected Papers*, edited by B. McGuinness. Oxford: Blackwell.
- , 1997. *The Frege Reader*, edited by M. Beaney. Oxford: Blackwell.
- , 2004. *Frege's Lectures on Logic: Carnap's Student Notes*, edited and translated by E. H. Reck and S. Awodey. Chicago: Open Court.
- , 2013. *Basic Laws of Arithmetic*, edited and translated by P. A. Ebert and M. Rossberg with C. Wright. Oxford: Oxford University Press.
- Garavaso, Pieranna, 1991. 'Frege and the Analysis of Thoughts.' *History and Philosophy of Logic* 12: 195–210.
- , 2013. 'Four Theses in Frege.' *Paradigmi* 3: 43–59.
- Geach, P. T., 1975. 'Names and Identity.' In *Mind and Language*, edited by S. Guttenplan, pp. 139–58. Oxford: Clarendon Press.
- , 1976a. Critical Notice of *Frege: Philosophy of Language*, by M. Dummett. *Mind* 85: 436–49.
- , 1976b. 'Saying and Showing in Frege and Wittgenstein.'

- In *Essays in Honor of G. H. von Wright*, edited by J. Hintikka. *Acta Philosophica Fennica* 28: 54–70.
- Geach, P. T. and G. E. M. Anscombe, 1961. *Three Philosophers*. Oxford: Blackwell.
- Heck, Richard G. and Robert May, 2011. 'The Composition of Thoughts.' *Noûs* 45: 126–66.
- van Heijenoort, Jean, 1977. 'Frege on Sense Identity.' *Journal of Philosophical Logic* 6: 103–08.
- Hodes, Harold T., 1982. 'The Composition of Fregean Thoughts.' *Philosophical Studies* 41: 161–78.
- Hylton, Peter, 2005. *Propositions, Functions and Analysis: Selected Essays on Russell's Philosophy*. Oxford: Oxford University Press.
- Kemmerling, Andreas, 1990. 'Gedanken und ihre Teile.' *Grazer Philosophische Studien* 37: 1–30.
- , 2010. 'Thoughts Without Parts: Frege's Doctrine.' *Grazer Philosophische Studien* 82: 165–88.
- Kremer, Michael, 2010. 'Sense and Reference: The Origins and Development of the Distinction.' In [Potter and Ricketts \(2010\)](#), pp. 220–92.
- Levine, James, 2002. 'Analysis and Decomposition in Frege and Russell.' *The Philosophical Quarterly* 52: 195–216.
- Moore, G. E., 1903. *Principia Ethica*. Cambridge: Cambridge University Press.
- Oliver, Alex, 2010. 'What Is a Predicate?' In [Potter and Ricketts \(2010\)](#), pp. 118–48.
- Penco, Carlo, 2003. 'Frege: Two Theses, Two Senses.' *History and Philosophy of Logic* 24: 87–109.
- Potter, Michael and Thomas Ricketts, eds., 2010. *The Cambridge Companion to Frege*. Cambridge: Cambridge University Press.
- Ricketts, Thomas, 1996. 'Truth and Logic in Frege.' *Proceedings of the Aristotelian Society* 70 suppl. vol.: 121–40.
- Russell, Bertrand, 1903. *Principles of Mathematics*. Cambridge: Cambridge University Press.
- , 1904. 'Fundamental Notions.' In *The Collected Papers of Bertrand Russell*, vol. 4, edited by A. Urquhart, pp. 359–413. London: Routledge, 1994.
- Sluga, Hans, 1975. 'Frege and the Rise of Analytic Philosophy.' *Inquiry* 18: 471–98.
- , 1977. 'Frege's Alleged Realism.' *Inquiry* 20: 227–42.
- , 1980. *Gottlob Frege*. London: Routledge.
- , 1987. 'Frege Against the Booleans.' *Notre Dame Journal of Formal Logic* 28: 80–98.
- Sullivan, Peter, 1992. 'The Functional Model of Sentential Complexity.' *Journal of Philosophical Logic* 21: 91–108.
- , 2010. 'Dummett's Frege.' In [Potter and Ricketts \(2010\)](#), pp. 86–117.
- Textor, Mark, 2009. 'A Repair of Frege's Theory of Thoughts.' *Synthese* 167: 105–23.
- Thompson, Michael, 2008. *Life and Action. Elementary Structures of Practice and Practical Thought*. Cambridge, MA: Harvard University Press
- Travis, Charles, 2012. 'The Proposition's Progress.' In *The Oxford Handbook of Wittgenstein*, edited by O. Kuusela and M. McGinn, pp. 183–213. Oxford: Oxford University Press.
- Wittgenstein, Ludwig, 1922. *Tractatus Logico-Philosophicus*, translated by C. K. Ogden. London: Routledge and Kegan Paul.