Frege on Multiple Analyses 
and the Essential Articulatedness of Thought

Abstract. This paper presents a new solution to a vexing problem in Frege scholarship. The solution is of intrinsic philosophical interest, because it brings out a theoretical option that is not generally in view, but that may prove useful for developing an adequate account of the nature of thoughts. Frege is prima facie committed to two theses about thoughts and their parts that many commentators consider to be mutually incompatible. On the one hand, he seems to maintain that (a) thoughts are internally articulated, in a way that mirrors the semantic articulation of the sentences that express them. On the other hand, he seems to maintain that (b) the same thought may be analyzed in different ways, none of which has to be more fundamental than the others. The exegetical debate has tended to polarize into two opposite camps, each of which attributes to Frege one of the two theses, but argues that he is only apparently committed to the other. I argue that the two sides of the debate share a common assumption, which generates the apparent conflict between the two theses. But the assumption in question is not compulsory: it can be rejected by appreciating Frege’s anti-atomistic conception of the relation between thoughts and their parts. Frege’s entitlement to the simultaneous assertion of (a) and (b) stems from his ‘contextualist’ or ‘organic’ conception of the internal complexity of thoughts. My primary targets are the interpretations proposed by Michael Dummett, Hans Sluga, David Bell, and Peter Geach.
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*, p. 275, translation p. 255)

For Frege, a meaningful sentence is generally a logically complex sign: it is composed of parts (words or phrases) that have a sense (and possibly a reference) of their own. The senses expressed by the parts of the sentence are parts of the sense expressed of 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. In Frege’s words,

> 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*, p. 218, translation pp. 201-2)

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 whenever they are not composed of

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1 See also *Frege 1914a*, pp. 224, 243, 262, translation pp. 207-8, 225, 243; *Frege 1914b*, pp. 127-8, translation p. 320; Frege 1918b, p. 148, translation p. 351; *Frege 1923*, p. 36, translation p. 390; *Frege 2004*, p. 87.

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

3 See also *Frege 1892b*, p. 199, translation p. 188.
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 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, p. 164, translation p. 81)\(^4\)

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 (p. 17, translation p. 16), Frege argues that a content of possible judgeable 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

\(^{4}\) See also Frege 1879, §9, translation pp. 66-9; Frege 1884, §64, translation p. 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.
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 opposite 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 Dumettian Camp, because it has been most
forcefully championed by Michael Dummett; the opposite camp I shall simply call the
Anti-Dumettian Camp, because it has tended to develop as a reaction against
Dummett’s interpretation. The two camps may be characterized as follows:

The Dumettian 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-Dumettian Camp. Frege endorses the Multiple Analyzes 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 Dumett’s position as well as two different proposals that
belong to the opposite camp—namely the interpretations respectively advanced by Hans
Sluga and David Bell. I will also discuss the interpretation proposed by Peter Geach,
arguing that it oscillates unstably between the Dumettian and Anti-Dumettian camp
and fails to provide a genuine alternative. My aim is to show that the debate 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; and 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 in and of itself inarticulate.

This is the assumption that generates the apparent conflict between Frege’s two theses. I will argue, however, that the assumption is not compulsory. The assumption is compulsory only if we conceive of thoughts as aggregates of atomistically independent components. But this is not the only option. We 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. When the relationship between a thought and its parts is construed in accordance to this alternative model, I shall argue, the Underlying Assumption lacks any compulsory character. Moreover, I will give independent reasons for thinking that Frege does in fact conceive of thoughts as organic unities. By adopting such a conception, I will submit, Frege is entitled to the simultaneous assertion of the Articulation Thesis and the Multiple Analyses Thesis: while it is constitutive of thoughts that they are internally articulated, in a way that mirrors by and large the manifest articulation of the sentences that express them, there is no unique ultimate articulation that a thought must possess in order to be the thought that it is.

Being able to see that Frege can endorse both theses without incoherence is an achievement on both exegetical and philosophical grounds. Exegetically, it allows us to make best sense of Frege’s texts as they stand. As the two sides of the debate have documented, in fact, there are compelling textual reasons for attributing to Frege each of the two apparently incompatible theses. But the exchanges between the Dummettian and the Anti-Dummettian camp of the debate have also brought out that there are good philosophical reasons for accepting each thesis. Dummett, as we shall see, 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
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, since the thesis may be seen to be equivalent to the truism that we can, indeed, say the same thing in different ways. Thus it is of more than merely exegetical interest if it turns out that there is room for a position that incorporates both theses without inconsistency.⁵

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 address the exegetical debate, it will help to have a systematic overview of these examples and to distinguish them from cases that clearly are not exemplifications of the phenomenon of multiple analyses.

It is uncontroversial that, for Frege, ‘different sentences may express the same thought’ (1892b, p. 199, translation p. 188): he insists on this point all over the places.⁶ 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 philosophical framework, in fact, there can be at least three kinds of cases in which the same thought is expressed by different sentences, but is not split up in different ways—i.e. three kinds of non-cases of multiple analyses.

First kind of non-case. We can have two different sentences that are composed of perfectly synonymous words, combined in exactly the same way, such as (arguably) the English sentence ‘John is American’ and the German sentence ‘John ist Amerikanisch’. According to a natural enough notion of ‘sentence’ and a natural enough notion of ‘word’, these are different sentences, made up of different words. But they exhibit the

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⁵ In 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, Garavaso forthcoming. 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.

same semantic structure—Carnap would say that they are ‘intensionally isomorphic’ (1956, §§14-5)—and articulate the thought they express in exactly the same way.

Second kind of non-case. We can have two different sentences that are composed of words with identical logical meanings, even though some of them differ in their psychological associations—i.e. in what Frege sometimes calls their ‘coloring’. For Frege, the two sentences ‘The dog is barking’ and ‘The cur is barking’ fall within this category (Frege 1897, p. 152, translation p. 140). These sentences express the same ‘conceptual content’, the same thought, and articulate it in the same way. In spite of the differences in psychological associations, the two sentences exhibit the same semantic structure.

Third kind of non-case. According to Frege, some sentences of ordinary language have a misleading surface grammar. The sentence ‘Everybody loves somebody’, for example, expresses the same thought that would be more perspicuously expressed, in logical notation, by the sentence ‘∀x∃y(x loves y)’. The former sentence appears to share the logical form of a sentence such as ‘John loves Mary’, and thus it may seem to articulate in a different way the thought that is expressed by its transcription in logical notation. But this appearance, for Frege, is deceptive. ‘Everybody loves somebody’ and ‘John loves Mary’ have in fact different logical forms, as can be seen by attending to their different inferential relations. From ‘John loves Mary’ we may infer that there is somebody, namely Mary, who is loved by John; but from ‘Everybody loves somebody’ we may not infer that there is somebody who is loved by everybody. The difference in surface-grammatical form between sentences of ordinary language containing generality words and their transcriptions in a perspicuous logical notation does not correspond to a difference in semantic structure. This sort of case, therefore, does not suffice to show that the same thought can result from the combination of different sets of thought-components.

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 that I provide is meant to
facilitate the discussion of the secondary literature, in a way that I hope will become evident in 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-word. The variable parts will be proper names, if the constant part is a first-level concept-word, or concept-words of first or higher level, if the constant part is a concept-word 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 regard the sentence as composed of the proper name ‘Cato’ and the concept-word ‘ξ killed Cato’ (where the Greek letter indicated the empty place that needs to be filled up or ‘saturated’ 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-word ‘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-word ‘ξ killed ξ’. Moreover, 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-word ‘ξ killed ξ’ as variable and the rest as constant, then we will segment the sentence into a first-level concept-word and a second-level concept-word, the Cato-quantifier ‘Cx(Φx)’. In fact, some commentators have argued that, by going up in the hierarchy of levels, we can split up any logically articulated sentence in infinitely many ways (see Hodes 1982, pp. 167-8). In the following table, I provide a synopsis of the alternative ways of splitting up 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 indicates that the list is not meant to be exhaustive:
Frege discusses many analogous examples in his writings.\textsuperscript{7} These cases may be taken to be illustrations 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 fully compatible with the idea that each sentence and thought has a unique fundamental structure, which accounts for all the possible alternative analyses.\textsuperscript{8}

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. Here are three cases that he discusses explicitly:

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Alternative Analyses</th>
<th>Ordinary Language Paraphrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cato killed Cato</td>
<td>Cato + ξ killed Cato</td>
<td>Cato killed Cato</td>
</tr>
<tr>
<td></td>
<td>Cato + Cato killed ξ</td>
<td>Cato was killed by Cato</td>
</tr>
<tr>
<td></td>
<td>Cato + ξ killed ξ</td>
<td>Cato killed himself</td>
</tr>
<tr>
<td></td>
<td>ξ killed ξ + C(x(Φx))</td>
<td>Having killed oneself is a property of Cato</td>
</tr>
<tr>
<td></td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

\textsuperscript{7} See Frege 1979, §9, translation p. 66; Frege 1880-81, pp. 17-8, translation pp. 16-7; Frege 1882, p. 164, translation p. 81.

\textsuperscript{8} An illustrious commentator who has maintained that this first kind of case does illustrate the Multiple Analysis Thesis is Frank Ramsey. In his 1925, which contains the earliest well-known attack on the doctrine of multiple analyses, Ramsey considers the ‘frequently held’ view that a relational proposition \(aRb\) may be analyzed in three different ways: as saying that \(a\) stands in the relation \(ξRξ\) to \(b\), as saying that \(a\) possesses the complex property of \(ξRb\), and as saying that \(b\) possesses the complex property of \(aRξ\). Each analysis, he argues, must be the analysis of a distinct proposition, since it specifies a different set of constituents; and yet, these three different propositions are the same proposition, because they all say the same thing, namely that \(aRb\). Such a view, Ramsey charges, postulates ‘an incomprehensible trinity, as senseless as that of theology’ (p. 406).
We have here three propositional contents, each of which is analyzed in two alternative ways. Concerning the first case, Frege writes in the *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).\(^9\) Clearly, this consideration is meant to apply to the second case as well, since the discussion of directions serves in the *Grundlagen* as an analogy for a treatment of numbers (see §63). Concerning the third case, Frege writes in ‘Function and Concept’ that each of the two sentences ‘expresses the same sense, but in a different way’ (1891, p. 11, translation p. 136). Since this essay was already written in the light of the sense/reference distinction, this remark asserts that the two sentences agree not only in truth-value, but also in the thought that they express.\(^10\)

There are several differences between these cases and the former ones. The 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. The cases of the second kind, on the other hand, are characterized by the fact that we start from the very beginning with two different sentences, which are thought to exhibit different semantic structures. Moreover, the cases

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\(^9\) Other analogous examples are discussed §§64-5.

\(^10\) Frege regards the possibility of ‘transforming’ sentences of the form ‘All Fs are Gs’ into sentences stating the identity of extensions as a fundamental law of logic and includes it among the axioms of his formal system (this is the infamous Basic Law V; see Frege 1893, §§3, 9, 20). In the passage from ‘Function and Concept’ that I mentioned above, Frege says explicitly that pairs of sentences of this form express the same sense (i.e. that same thought). However, whether Frege held the same view in *Basic Laws* 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, p. 136, n. 4, p. 213, n. 26); others argue that it expresses only identity of truth-value (see e.g. Dummett 1981a, p. 336).
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. In spite of these differences, however, both kinds of cases appear to show that the same thought or judgeable content can result from the combination of different logical components.

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

<table>
<thead>
<tr>
<th>Alternative expressions of the same thought, by means of sentences involving truth-functional connectives:</th>
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</thead>
<tbody>
<tr>
<td>$p \land q$</td>
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<tr>
<td>$q \land p$</td>
</tr>
<tr>
<td>$p \land p$</td>
</tr>
<tr>
<td>$p$</td>
</tr>
<tr>
<td>$\neg \neg p$</td>
</tr>
<tr>
<td>$p \rightarrow q$</td>
</tr>
<tr>
<td>$\neg q \rightarrow \neg p$</td>
</tr>
</tbody>
</table>

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*, p. 39, translation p. 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-word 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 ‘$p\land p$’ 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, p. 44, translation p. 399); and about contraposition, he asserts that ‘[t]he sense is scarcely affected by it’ (1897-98, p. 166, translation p. 154). Here too it seems that the same thought may result from the combination of different thought-components.

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 (1882b, p. 199, translation pp. 187-8). Frege argues that in the former sentence the expression ‘square root of four’ is a concept-word, 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, as is indicated by the presence of the definite article (which he takes to be a reliable—though not an infallible—indicator of proper-namehood). For Frege, therefore, the two sentences have different logical structures. The first sentence represents a first-level concept falling within a second-level concept (namely the existential quantifier); the second sentence, on the other hand, represents an object falling under a first-level concept. And yet, in spite of these structural differences, they are said to express the same thought. Similar considerations seem to apply to other analogous examples that Frege discusses 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’ (1882b, pp. 197 and 205 respectively, translation pp. 185 and 193).

In ‘On Concept and Object’, Frege insists that expressions of the form ‘The concept F’ (as they appear in sentences analogous to those that we have been considering) designate objects. What kind of objects? There is evidence that Frege takes those expressions to designate extensions of concepts. He writes, in fact, that expressions of this form stand for objects that ‘go proxy’ for concepts (1882b, p. 197,

11 See also Frege 1879 (p. viii, translation p. 51), where Frege introduces an axiom stating that ¬¬p and p have the same conceptual content (for a helpful discussion of this passage, see Kremer 2010, p. 238). However, Frege might not be completely consistent in his writings about the fact that a sentence and its double negation express the same thought. For example, at the end of 1918b (p. 157, translation p. 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.

12 See also Frege 2004, p. 66.

13 This is convincingly argued for in Burge 2005, chap. 7.
translation p. 185), and then, defending a statement that he made in the *Grundlagen* (§68), he maintains that any expression of the form ‘The extension of the concept $F$’ may be replaced with an expression of the form ‘The concept $F$’ (1882b, p. 199, translation p. 187). We can therefore represent the different semantic structures of the sentences that we have considered in the previous paragraph by means of Frege’s notation for extensions of concepts:\(^{14}\)

<table>
<thead>
<tr>
<th>Alternative analysis of the same thought, by means of sentences involving extensions of concepts</th>
<th>Transcriptions in logical notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is at least one square root of four</td>
<td>$\exists x (x = \sqrt{4})$</td>
</tr>
<tr>
<td>The concept <em>square root of four</em> is realized</td>
<td>$R(\epsilon (\epsilon = \sqrt{4}))$</td>
</tr>
<tr>
<td>Jesus is a man</td>
<td>$Mj$</td>
</tr>
<tr>
<td>Jesus falls under the concept <em>man</em></td>
<td>$U(j, \epsilon Me)$; or: $j \in \epsilon Me$</td>
</tr>
<tr>
<td>2 is a prime number</td>
<td>$P(2)$</td>
</tr>
<tr>
<td>2 falls under the concept <em>prime number</em></td>
<td>$U(2, \epsilon P\epsilon)$; or: $2 \in \epsilon P\epsilon$</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Different expressions of the same thought, by means of sentences involving the truth predicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$p$</td>
</tr>
<tr>
<td>$p$ is true</td>
</tr>
</tbody>
</table>

Frege is very consistent in maintaining that sentences of the form ‘$p$’ and ‘It is true that $p$’ express the same thought or judgeable content.\(^{15}\) Moreover, at least on some occasions, he seems to regard the truth predicate as a genuine concept-word. To the extent that he

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\(^{14}\) Some commentators have maintained that, for Frege, each of the following 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 reasons to think that this is Frege’s official view in 1882b. 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.

\(^{15}\) See *Frege 1897*, p. 153, translation p. 141; *Frege 1915*, p. 271, translation pp. 251-2; *Frege 1918a*, p. 61, translation p. 328. Cf. 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.
does so, he is committed to the idea that the same thought may be expressed by sentences with different semantic structures.\textsuperscript{16}

This concludes my overview of the kinds of cases discussed by Frege that may be taken to express his commitment to the 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 ‘\( \varepsilon F \varepsilon \)’ should not be treated as genuine proper names (see Frege 1924–25, p. 288, translation p. 269).\textsuperscript{17} 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-word, and there is at least a strand in Frege’s writings that appears to pursue this line of reasoning.\textsuperscript{18} And again, concerning cases of the third kind, one could argue, following Wittgenstein’s \textit{Tractatus}, that logical connectives should not be treated as concept-words with a sense and reference of their own.\textsuperscript{19} But none of these considerations shows that

\textsuperscript{16} The 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, p. 292, n. 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-word, even though a \textit{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, p. 271, translation pp. 251-2). 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 \textit{Bedeutung} of the word “true” seems to be altogether \textit{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, pp. 61-2, translation pp. 328-9). This reluctance on Frege’s part, as well as other aspects of his conception of truth (such as the idea that ‘the meaning of he word “true” is spelled out in the laws of logic’ [1918a, p. 59, translation p. 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, p. 272, translation p. 252]), can be taken to show that Frege is not really committed to regarding truth as a property \textit{at all} (cf. 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 as an illustration of his commitment to the doctrine of multiple analyses.

\textsuperscript{17} For an account of the evolution of Frege’s view about extensions of concepts, see Burge 2005, chap. 7.

\textsuperscript{18} See above, note 16.

\textsuperscript{19} The \textit{Tractatus} summarizes this view at 4.0312: ‘My fundamental thought is that the “logical constants” do not represent’. For the \textit{Tractatus}, ‘logical constants’ (i.e. logical connectives) do not characterize the sense of propositions, but express \textit{operations} on the senses of propositions. In a perspicuous notation, truth-
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, in fact, do not invoke any general reason for rejecting the possibility of multiple analyses. 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—issues that may have to do with the contradictions that we incur when we take the talk of extensions of concepts at face value, or with the philosophical puzzles that derive from taking the truth predicate as a genuine concept-word, or with the problems that derive from interpreting the logical connectives as a substantive piece of vocabulary. In principle, one could raise similar objections against all 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 constituent parts of the sentence are parts of the thought it expresses. The crucial claim, then, is that the identity of each thought is given by the parts of which it is composed and by the way 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)’. 
they are put together. Consequently, sentences with different semantic structures cannot express the same thought.\(^{20}\)

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 strategies. 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-word 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

\(^{20}\) The reconstruction of Dummett’s interpretation that I provide in this section is based especially on Dummett 1981a (chapters 15-17), 1981b (pp. 27-33), and 1991 (pp. 192-5 and 289-314).
expression. Dummett indicates the empty places of complex predicates by means of Greek letters (in accordance with Frege general notation for concept-words), and signals the argument 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. The concept-word ‘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, pp. 193, 301-2).

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, p. 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, p. 276). From ‘Cato killed Cato’ we can extract by decomposition the complex predicate ‘Cato killed ξ’; we can then attach to this expression a quantifier and obtain, say, ‘∃x(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, p. 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 somebody

Cato killed Cato
∴ Somebody killed Cato

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

\[ Fa \]
\[ \therefore \exists x(Fx) \]

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 seen 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
∴ Cato is an honorable man
If we see in this inference the following pattern (syllogism in Darii),

\[ \forall x(Fx \rightarrow Gx) \]
\[ Fa \]
\[ \therefore Ga \]

we need to regard the concept-words ‘\( \xi \) killed Cato’ and ‘\( \xi \) is an honorable man’ as components of the major premise—components that fill the empty places of the second-level, two-places concept-word ‘\( \forall x(\Phi x \rightarrow \Psi x) \)’. 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:

\[ \text{Pattern:} \]

If anybody killed Cato, he is an honorable man
\[ \forall x(Fx) \]
\[ \therefore \text{If Cato killed Cato, Cato is an honorable man} \]
\[ \therefore Fa \]

\[ \text{Pattern:} \]

If Cato killed Cato, Cato is an honorable man
\[ p \rightarrow q \]
Cato killed Cato
\[ p \]
\[ \therefore \text{Cato is a honorable man} \]
\[ \therefore q \]

If we choose to explain the validity of the inference in this way, we do not need to see the concept-words ‘\( \xi \) killed Cato’ and ‘\( \xi \) is an honorable man’ as components of the quantified premise; we only need to decompose it into the second-level, one-place concept-word ‘\( \forall x(\Phi x) \)’ and the first-level concept-word ‘If \( \xi \) killed Cato, then \( \xi \) is a honorable man’.\(^{21}\)

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\(^{21}\) Dummett does not put the issue exactly as I did. However, this seems to me the point that he is making about the connection between decomposition and inference.
We do not need to enter any further into the details of Dummett’s distinction between analysis and decomposition.\textsuperscript{22} The sketch that I have provided should suffice to show how the distinction is supposed to accommodate into Dummett’s interpretation what Frege has to say about the first kind of case that I distinguished above. To repeat, a thought admits of many alternative decompositions, but only one analysis, which reveal its unique intrinsic structure.

Dummett sees very clearly that he cannot deal in the same way with the second kind of case. The different recarvings of the same content that Frege discusses in the \textit{Grundlagen} and elsewhere are not obtained by decomposition. There is no \textit{single} sentence from which we can obtain, by applying different methods of decomposition, both ‘a\slash b’ and ‘D(a)=D(b)’. By analyzing (as opposed to decomposing) these two sentences, we do not reach a single set of ultimate constituents. Analysis shows that the semantic structures of the two sentences are genuinely different; and yet Frege says that pairs of sentences of this form express the same content or sense. Dummett’s way of dealing with Frege’s remarks, here, is quite straightforward: he dismisses them as local aberrations (1981\textit{a}, pp. 332-6; 1991, pp. 292-6). Dummett maintains that Frege’s statements—to the effect that by ‘transforming’ a sentence such as ‘a\slash b’ into a sentence such as ‘D(a)=D(b)’ we ‘carve up the content in a way different from the original one’, and express ‘the same sense, but in a different way’—are ‘too strong’ (1991, p. 293) and ‘embod[y] an exaggerated claim’ (1981\textit{a}, p. 335). Dummett argues 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, p. 295). Frege should have admitted that ‘a\slash b’ and a ‘D(a)=D(b)’ (as well as any pair of sentences of the same form) exhibit different semantic structures and express, accordingly, different thoughts. By the time he wrote the \textit{Grundgesetze}, according to Dummett, Frege abandoned his early, incorrect view and got rid of any claim that is incompatible with the idea that thoughts have a unique internal structure (1991, p. 293).\textsuperscript{23}

In order to address the third kind of case that I distinguished above, Dummett adopts yet a different strategy. He introduces a distinction (not explicitly drawn by Frege)

\textsuperscript{22} For a more comprehensive discussion, see Sullivan 2010.
\textsuperscript{23} Dummett rejects, accordingly, the view that Basic Law V in \textit{Grundgesetze} expresses identity of sense as well as identity of \textit{Bedeutung} (cf. note 10 above).
between essential structure and form of representation (1981a, pp. 328-32). The essential structure of a sentence is what accounts for the way in which its sense depends upon the senses of its 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 happens, according to Dummett, when we express a material conditional in Frege’s notation, in contemporary logical notation, and in Polish notation (1981a, pp. 328-9):

\[
\begin{array}{c}
q \\
\hline
p \\
\end{array} \quad p \rightarrow q \quad \rightarrow pq
\]

For Dummett, these formulas have the same essential structure and express the same thought; what changes is merely the form of representation. Dummett claims that Frege regards in the same way sets of sentences of natural language such as ‘Cato killed Cato’, ‘Cato was killed by Cato’, and ‘Cato killed himself’. The surface grammar of these sentences is different. In virtue of this difference, Dummett claims, the three sentences ‘suggest’ alternative decompositions of the same content; but for Frege, they all have the same essential structure, as is shown by the fact that he would translate all of them into a single formula of his logical notation (presumably, ‘cKc’). Coming now to the cases that are our real concern here, Dummett’s suggestion is that Frege treats them fundamentally in the same way. The sentences ‘p’ and ‘p&p’ express, according to Frege, the same thought; and yet they are represented in Frege’s own notation by different formulas. But for Dummett, this simply means that Frege’s logical notation is not yet a perfect logical notation. In a perfect logical notation, ‘p’ and ‘p&p’ would be expressed by a single formula, which would bring out transparently their shared essential structure. In such a notation, there would be a single sign for ‘p’ and ‘p & p’, and a single sign for ‘p & q’ and ‘q & p’. According to Dummett, therefore, these are not cases of multiple analyses,

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24 Dummett suggests, for the sake of illustration, that this could be done by means of a notation 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, p. 332). An analogous notational trick has been proposed for expressing double negation: we can represent the negation of a sentence by writing the sentence upside down, so that
but merely cases in which different sentences, having the same semantic structure, express the same thought.

To my knowledge, Dummett does not address the other cases that I mentioned in the previous section—i.e. double negation, contraposition, transformations involving names for extensions, and transformations involving the truth predicate. But it seems that he would either dismiss them as local aberrations (as he does with the second kind of case), or claim that they are cases in which the same semantic structure is differently represented (as he does with sentences such as ‘p’ and ‘p&p’).

At first sight, Dummett’s attempt to show that Frege is not after all committed to the possibility of multiple analyses might strike us as hopeless, given the number of passages where Frege seems to allow quite explicitly for such a possibility. However, as we have seen, Dummett is able to go quite far in reconciling these passages with his interpretation. The most compelling part of his discussion is perhaps the account of the first kind of case by means of distinction between analysis and decomposition. We can notice, in the first place, that this distinction 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, for example, that the analysis25 of a sentence of the form ‘aRb’ into ‘a’ and ‘ξRb’ is less fundamental than the analysis of the sentence into ‘a’, ‘…R…’, and ‘b’. After all, the concept-word ‘ξRb’ contains the simpler concept-word ‘…R…’ and the proper name ‘b’! The former analysis strikes us as a merely partial one. Dummett’s distinction can explain the different status of these alternative analyses of the sentence, as well as other kinds of contrast that cannot be captured in terms of the distinction between complete and partial analyses. We might want to say, for example, that the analysis of a sentence of the form ‘Fa’ into the ‘F…’ and ‘a’ is more fundamental than the analysis of the sentence into ‘F…’ and the second-level concept-word ‘Φa’, even though the latter analysis is in no obvious sense ‘more partial’ than the former. According to Dummett’s proposal, the latter way of splitting up

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25 In the rest of this paragraph, I will not use the term ‘analysis’ in Dummett’s technical sense.
the sentence is obtained by regarding one of its significant parts as variable and 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 former way of segmenting the sentence. The
latter way of analyzing the sentence is less fundamental than the former because it
presupposes it.

In the second place, it is worth noting that there are at least two pieces of textual
evidence in support of Dummett’s reading of Frege’s treatment of the first kind of case
(both of which are extensively discussed by Dummett). In the 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 1979,
§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.26 Moreover, 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, pp. 18-19, translation p. 17). The idea that the
various ways of splitting up a judgeable content (and the sentence that expresses it)
assume a pre-existing articulation, as well as the explicit contrast between simple and
complex concept-words, may be taken to show that Frege is in fact committed, albeit
inchoately, to some version of Dummett’s distinction between the various components of
a sentence (obtained through ‘decomposition’) and its ultimate, simple constituents
(revealed by ‘analysis’).

26 For a critique of Dummett’s appropriation of this passage and the proposal of a (not very convincing)
alternative interpretation, see Currie 1985, pp. 288-90.
In spite of its relative merits, Dummett’s way of dealing with the first kind of case has been challenged by several commentators.\footnote{For a critique of the claim that Frege is implicitly operating with a distinction between analysis and decomposition, see Levin 2002. For a critique of the attribution to Frege of the correlative distinction between simple and complex predicates, see Sluga 1975, p. 480; Geach 1975, pp. 147ff; Geach 1976a.} But even if we raise no objection against Dummett on this point, there are still very strong reasons for resisting his overall approach. As we saw above, Dummett is forced to dismiss Frege’s remarks about the second kind of case, and it seems that this is his only option for other cases as well—such as double negation, contraposition, and sentences involving the truth predicate. The analysis/decomposition distinction, in fact, is not applicable to any of these cases, and to claim that they merely involve different representations of the same essential structure would require a radical revision of Frege’s views—for example, it would require the abandonment of the idea that logical constants are genuine concept-words. Against this wider background, the claim that each thought, for Frege, has a unique structure appears as a requirement that Dummett imposes on Frege’s texts (as a commitment that he must hold), 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 that animate the anti-Dummettian camp of the debate. Unfortunately, as we will begin to see in the following 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 unilateral 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.\footnote{The following account of Sluga’s interpretation is based on Sluga 1975, 1977, 1980 (especially pp. 90-5 and 134-6), and 1987.}

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, on the linguistic level, sub-
sentential expressions are taken to have a meaning prior to and independently of their
occurrence in meaningful sentences. The parts are conceived to be unilaterally prior to
the whole. As Sluga nicely puts it, the Aristotle-Boole tradition ‘treats concepts as if they
where initially independent of judgments and entered them only incidentally’ (1980, p.
91). The fact that concepts appear in thoughts or 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, replaced 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, p. 86). Frege’s contextualism, for Sluga, reverses the direction of unilateral
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, on the
contrary, takes thought-components to arise from the segmentation or analysis 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, p. 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, p. 483)—where a
‘unity’ is something intrinsically ‘simple’ (1975, p. 484) and unstructured: a sense-
monolith, we might say. Similarly, on the linguistic level, ‘sentence meanings precede
word meanings’ (1987, p. 86).29 The meanings of sentences are first grasped as
unarticulated wholes: ‘sentences as primarily simple’ (1975, p. 480). According to this
account, it would seem, the manifest grammatical articulation of sentences plays no role
in the initial apprehension of their sense.

29 Cf. also Sluga 1977, p. 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’.
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, p. 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 sentenced composed. (Sluga 1975, p. 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 any valid inference as the exemplification of some general pattern. 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. A 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, p. 135)30

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

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30 See also Sluga 1977, pp. 482 and 484. For the explicit attribution to Frege of the doctrine of multiple analyses, see Sluga 1980, p. 182, and 1987, pp. 89-90.
‘assigned’ or imposed by us—something that reflects only ‘our subjective perception and our manner of speaking’ (1980, p. 157). Reversing the remark that Sluga uses to characterize the atomistic tradition that Frege opposes, we can say that for Frege, as Sluga interprets him, 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 but crucial 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 wholes, and (c) the recognition of multiple analyses are commitments that come in a single package.

The first implicit assumption is that (a) requires (b). Sluga proceeds as if the only way to oppose a view of thought and language that accords a unilateral priority to the components of thoughts and the meanings of words were to adopt the opposite view—i.e. a view that reverses the direction of unilateral priority between the whole and the parts, thereby construing thoughts and sentences as intrinsically unstructured wholes that may become articulated only at a subsequent (and optional) stage. But this assumption is not innocent. In fact, as I will maintain in the last section, it misses the specificity of Frege’s contextualism, which construes sentences and the corresponding thoughts as organic unities in which the whole and the parts are conceptually interdependent.

Sluga’s second implicit assumption is that (c) requires (b). Sluga never envisions the possibility of allowing for multiple analyses while maintaining that internal articulation is a constitutive feature of thoughts. For Sluga, the possibility of multiple analyses presupposes the structureless nature of thoughts. Sluga, in other words, is committed to the Underlying Assumption. As we are soon going to see, Dummett argues on Fregean grounds that the view of thoughts as intrinsically unstructured wholes is untenable. According to Dummett, any adequate account must regard thoughts as essentially articulated, in the way specified by the Articulation Thesis. If Dummett’s arguments are persuasive—as I’ll try to show that they are—then Sluga has failed to explain how Frege can be coherently committed to the possibility of multiple analyses.

Before we turn to Dummett’s arguments against Sluga, however, 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 it will be instructive to see that, in spite of their 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 turn out to be equally liable to Dummett’s objections.  

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. 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, p. 223). 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, p. 223; 1987, p. 46; 1996, p. 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, on the other hand, is ‘the value that a certain conceptual function takes for a certain conceptual argument’ (Bell 1996, p. 595).  

31 For an interpretation structurally similar to Sluga’s, see Garavaso 1991 and forthcoming. 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.


33 The general strategy of reconciling Frege’s two theses by arguing that they apply to two different sorts of items, 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 address only Bell’s particular proposal. I wish emphasize, however, that my own proposal opposes all the interpretations that adopt the aforementioned general strategy.
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, in fact, 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 functions and arguments that express a given conceptual content are not parts of the conceptual content—just as the number 4 and the function $x^2$ are not parts of the number 16. 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 ‘$4^2$’, does not reveal the ‘inner structure’ of that number. Indeed, according to Bell, a Fregean judgeable conceptual content (or ‘thought’ in the proper sense of the term) has no intrinsic structure: it is a ‘structureless whole’ ($1981$, p. 223; cf. also $1996$, p. 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 that we 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 is maintaining, therefore, that while Frege explicitly proposed (after the introduction of the sense/reference distinction) a three-stage analysis of language, he was in fact committed (at least in so far as complete sentence 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

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34 I am borrowing this way of characterizing Frege’s official view from Hylton $2005$, chap. 7.
that sentences designate a truth-value, convey a ‘thought’ or judgeable conceptual content, and express a ‘sense’ or linguistic meaning.\footnote{It 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).}

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 came to realize that linguistic expressions, at the level of reference, do not exhibit part/whole complexity, but only function/argument complexity. ‘The capital of Sweden’, he remarked, is a complex proper name that refers to Stockholm; but neither Sweden nor the function designated by the expression ‘The capital of \(\xi\)’ are parts of Stockholm (Frege 1919, p. 275, translation p. 255).\footnote{See also Frege 2004, p. 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’.
} Similarly, the sentence ‘Stockholm is a capital’ is a complex proper name designating The True; but neither Stockholm nor the concept designated by the concept-word ‘\(\xi\) is a capital’ are parts of the The True.\footnote{At 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, pp. 35-6, translation p. 159). However, there is consistent evidence that Frege gave up this earlier view.} According to Bell’s account, the same holds of the conceptual content that is expressed by a sentence. 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.\footnote{I am borrowing this terminology from Dummett 1981a, p. 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.} Frege contrasts the realm of reference with the realm of sense: the sense expressed by a sentence, what he calls a ‘thought’, is in general composed of the senses of the parts of the sentence. But for Bell, this really applies only to the linguistic meanings of the sentence.

In the next section we will see, with Dummett’s help, what is problematic about this elaboration of Frege’s official view.
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 structureless 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 completely 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 that apply different conceptual arguments to different 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.\textsuperscript{39} The aspect of his critique that I find more insightful—and that will be our concern in this section—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. 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

\textsuperscript{39} For Dummett’s criticism of Sluga, see Dummett 1981a, pp. 292-322, 537-51; for his criticism of Bell, see Dummett 1991, pp. 289-314.
them: we must hold on to this idea if we want to be talking about language and thought in the full and proper sense of these terms.\textsuperscript{40}

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. (\textit{Dummett 1991}, p. 290)

Here 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 a 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 \textit{1914b}, p. 127, translation p. 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 device a system that picks out any thought by specifying its relative position in the inferential space, without having to reveal its internal articulation.\textsuperscript{41} For Dummett, however, the possibility of codes of either

\footnotesize{\textsuperscript{40} I should remark that this strand in Dummett’s critique, which I consider to be the most valuable, has received very little attention in the literature.\textsuperscript{41} See the discussion of the ‘map-reference view of language’ in \textit{Dummett 1981a}, pp. 41-5, 296-304.}
the former or the latter 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.\footnote{See 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.}

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. As a matter of conceptual necessity, 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 is Stockholm; similarly, we may understand what someone says when she speaks of ‘The thought expressed by the last sentence of the 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—i.e. 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 or indicate thoughts, just as Fregean proper names, be they simple or complex, serves to pick out or indicate 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 parasitical 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.43

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 offering an account of language and thoughts.

Bell may try to 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 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—

43 Even though this criticism is fully Dummettian in spirit, Dummett actually refuses to believe that Sluga can possibly 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 sentence 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 following paragraph.
and is, indeed, intrinsically unstructured. However, Dummett’s considerations show that whatever this ‘item’ might be, it cannot be \textit{what the sentences says or express}. Thus, whatever Bell shows through the appeal 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 \textit{Frege} calls ‘thoughts’ (i.e. \textit{what sentences say or express}), Bell should explain how the same item may be expressed by structurally different sentences, \textit{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 in not equipped for that task.\footnote{There are additional problems with Bell’s proposal. Adding a new semantic level or realm to Frege’s theory is no small fix, and Bell gives us very little indication of how the modification is actually supposed to work. To name just a couple of obvious issues: 1) How should we conceive of the relation between sentential ‘linguistic meanings’ and ‘thoughts’? Perhaps in the same way in which Frege conceives of the relation between sense and reference? That would mean that the linguistic meaning of a sentence is a mode of presentation of a thought, which for Frege is in turn the mode of presentation of a truth-value. But it is not clear that we can make any sense of the idea of a mode of presentation of…a mode of presentation. 2) How should we conceive of judgment, in Bell’s picture? For Frege, to judge is to advance from a thought to a truth-value. Should we say, then, that to judge is to advance from a sentential linguistic meaning to a Bellian ‘thought’, and from there, to a truth-value? But then, why do we need the intermediary step?—Bell’s silence about these and other similar issues makes it difficult to evaluate his proposal. Of course, the fact that Bell does not spell out many important details does not entail that he can’t. There are several commentators who have argued, on the basis of a variety of considerations, that Frege lumps together under the rubric of ‘sense’ (and thus of ‘thought’) a number of different, heterogeneous semantic notions. (See \textit{Burge 2005}, chapters 5 and 6, \textit{Penco 2003}, and also \textit{Bell 1979}, pp. 112-25, where Bell distinguishes two notions of sentential ‘sense’ or ‘thought’, for reasons that are not directly related to the multiple analyzability of thoughts.) Here I am not concerned to rule out the possibility that Bell, in accordance with this wider exegetical trend, might find a coherent manner of filling in the details that are missing from his proposal. What matters, for our present purposes, is that however he decides to further specify his proposal, he will not be able to explain the possibility of multiple analyses through the appeal to the kind of function/argument model that he recommends, for the reason I gave in the text.}

In the next section, we will examine the appeal to a \textit{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 we discussed in the previous section. For Dummett, they both commit the mistake of reducing the semantic complexity of sentences to the complexity of referring expressions, thereby losing sight of the crucial distinction between expressing a thought and (systematically) encoding or referring to it (Dummett 1981a, pp. 264-70). But while there are passages in Geach that encourage this assimilation, his interpretation 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 he appeals makes his interpretation immune to the Dummettian criticism; but it does not suffice, in and of itself, to make room for the phenomenon of multiple analyses. On the contrary, Geach’s interpretation turns out to be compatible with the Dummettian contention that each thought must have a unique identifying structure.

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, of course, 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, p. 149; see also 1976a, p. 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 came to realize, it would be quite 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, p. 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, p. 445)

The sense of a (first level) concept-word 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 of multiple analyses. After a rehearsal of Ramsey’s formulation of the problem (see above, note 8), Geach writes:

[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 4ξ for the argument 2, and the value of the function ξζ for the arguments 2 and 8. Nobody would now ask which one it is really, or talk of an incomprehensible trinity. 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 ‘aRξ’ – ‘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, p. 146)

Strictly speaking, this passage does not concern the problem that we have been discussing in this paper, i.e. the multiple analyzability of thoughts, but a different problem, i.e. the

45 See also pp. 440 and 444, and Geach 1975, pp. 149-50.
multiple analyzability of what Geach calls ‘propositions’. Geach is very clear about the way in which he uses this term: ‘As in other works of mine, I use “proposition” 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, p. 139). A Geachean proposition is a meaningful sentence—a sentence used to say something intelligible. 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-words 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, pp. 143-57). For example, the proposition ‘aRb’ is the value, say, of the linguistic function ‘ξRζ’ for arguments ‘a’ and ‘b’. Similarly, Geach thinks that the thought expressed by the proposition ‘aRb’ is the value, say, of the sense-function expressed by the linguistic function ‘ξRζ’ 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 that 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 objects of comparison.

There are three papers in the literature that I found particularly helpful for getting clear about the special character of the functions discussed by Geach: a paper by Peter Sullivan (1992), which argues that the function/argument model of the complexity of propositions and thoughts can be ‘reconciled’ with ‘what is right and important’ about the part/whole model (p. 97); a paper by James Levine (2002), which argues, more strongly, that the function/argument model can fully incorporate the part/whole model; and a paper by Peter Hylton (2005, chap. 7, especially pp. 133-4), which contrasts Russell’s ‘propositional functions’ with ordinary arithmetical functions. This last paper is relevant for our present purposes because much of what Hylton says about Russell’s propositional functions applies as well to Geach’s linguistic functions and sense-functions. (This is itself an interesting fact: very likely, the functions that Geach had in mind when he discussed linguistic functions and sense-functions were Russellian propositional functions, rather than ordinary arithmetical functions, even though he failed to be clear about the relevant differences.) Drawing collectively or individually on these three papers, I will now single out six interrelated features that belong uncontroversially to ‘Geachean functions’ (to be understood as an umbrella term for both linguistic functions and sense-functions), but not to functions in general:

i) The arguments of Geachean functions are parts of their values. The proper names ‘a’ and ‘b’ are parts of the propositions ‘aRb’—and their senses are parts of the corresponding thought. 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 (cf. Hyton 2005, p. 133; Levine 2002, pp. 200 and 211; Brandom 1968, p. 268).47

46 See also Hylton 2005, chap. 8, pp. 143-4.
47 The question of whether 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, p. 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
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, which contain their respective arguments. Again, this is obviously not the case for function in general (cf. Hylton 2005, p. 134).

iii) All the values of a Geachean function share the same structure. We may also say that they share the same form. In the Principle of Mathematics, Russell 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 that a propositional function ‘typifies’ a class of propositions that share a common form (Russell 1903, §§81-2). Moreover, in other writings of the same period, Russell states quite explicitly 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’. These remarks of Russell’s on propositional functions apply as well to Geachean functions. This is why Geach can intelligibly say, in the previously quoted passage, 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 a 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 \(4^2\); but it is not clear what it would mean to say that each of those numbers ‘illustrates’ the pattern that they form when put together. On the contrary, a Geachean 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

can be regarded as constituent elements of sentences’ (p. 101). On the other hand, Levine and Brandom see no problem in the idea of a function that is part of its own values (Levine 2002, pp. 211 and 213; Brandom 1968, p. 268). Fortunately, we don’t have to settle this issue on this occasion. For the present purposes, it suffices to notice that the values of Geachean functions always contain their arguments.

48 See the passages from Russell 1904 quoted and discussed in Levine 2002, p. 207.
representing them as values of the same linguistic function, ‘aRξ’; and the same holds, mutatis mutandis, for thoughts and sense-functions.

iv) If we know a Geachean function and its argument, we thereby know its value (cf. Sullivan 1992, p. 96). Conversely, given a Geachean proposition or the corresponding thought, we thereby know whether or not it is the value of a Geachean function for a given argument (cf. Hylton 2005, p. 133). This does not hold for functions in general. There is an intuitive qualitative difference between determining the value of, say, the linguistic function ‘aRξ’ for argument ‘b’, on the one hand, and determining the value of the arithmetical function ξ² for argument 14, on the other. Conversely, there is an intuitive qualitative difference between determining whether or not the proposition ‘aRb’ is a value of the function ‘aRξ’ for argument ‘b’, on the one hand, and determining whether or not the number 196 is a value of the function ξ² for argument 14, on the other. One way to articulate this intuitive contrast—and thus, by the same token, to make explicit the precise force of the ‘thereby’ contained in the above formulations—is to draw on the aforementioned suggestion that a Geachean function exhibits the common form or structure of a class of propositions or thoughts. The specification of the arguments of a Geachean function can then be seen as the specification of the features that belong to a particular instance of a certain type of propositions or thoughts. But once we have specified the form of a proposition or thought (by indicating the linguistic function or sense-function of which it is the value), as well as the features in virtue of which it is a particular exemplification of that form (by indicating the arguments that the function must take in order to yield such a proposition or thought as its value), we have done everything there is to be done for specifying the proposition or thought in question. We have specified, if you like, both its form and its content. Conversely, if we are given a proposition or a thought, in a way that displays its internal structure (as opposed to the case in which the proposition or thought is merely picked out by means of a code or referring expression), we are ipso facto in a position to determine whether it is or it is not the exemplification of a certain form.49

49 The contrast at issue here does not lie in the fact that determining the value of a Geachean function for given arguments—or recovering a Geachean function and appropriate arguments from one of its values—does not require the performance of some kind of operation. It may very well do so. This becomes clearer if, following Geach’s recommendations, we do not confine our attention to the deceptively simple case of
v) In defining a linguistic function or a sense-function, we exploit a domain of objects (in the simplest case, proper names and their senses respectively) to define the function and its range simultaneously (cf. Sullivan 1992, p. 96).\footnote{Sullivan points out that Geachean functions possess this feature because they specify instructions for constructing their values out of their arguments. While I have nothing to object to this way of presenting the issue, I will look at it from a slightly different angle, developing the suggestion that a Geachean function exhibits the common form or structure of a class of propositions or thoughts.} For many other kinds of functions, the domain and the range are both specified independently of the function to be defined. There would be little point in saying that the function $\xi^2$ is the function that maps any number $n$ into the number $n^2$: any adequate definition must employ an independent way of picking out the values of the function, ultimately reducible to a canonical method of representation. A definition of $\xi^2$, for example, must ultimately enable us to determine that its value for argument 4 is 16 (perhaps by telling us, as an intermediary step, that $4^2 = 4 \times 4$). But we do not fall into any form of vicious circularity if we say that the value of the linguistic function ‘aR$\xi$’ for any singular term ‘t’ is the proposition ‘aRt’. On the contrary, any definition of the linguistic function that does not ultimately make available this way of representing its values will be inadequate. Suppose we have a code in which the proposition ‘aRb’ is represented by the simple sign ‘p’; we could then say that the value of ‘aR$\xi$’ for argument ‘b’ is ‘p’; but that would be satisfactory only to somebody

linguistic functions of non-inflected languages such as English. The Latin translation of ‘Cato killed Cato’, for example, is ‘Cato Catonem cecidit’. Each of these two propositions is the value of a linguistic function with two argument places, taking singular terms as arguments and propositions as values. But a proper specification of the Latin linguistic function must indicate not only the ‘slots’ that must to be filled with singular terms, but also the grammatical case that each singular term must take—nominative and accusative respectively. This means that in order to determine the value of the Latin linguistic function ‘$\xi_N \xi_A$ cedidit’ for arguments ‘Cato’ and ‘Cato’, we need to carry out some morphological transformations, which require the mastery of a fair amount of grammatical rules. We need to know, for example, that ‘Cato’ is a masculine noun of the third declension, that the stem for its non-nominative cases is ‘Caton-’, and that the accusative ending for masculine nouns of the third declension is ‘-em’. There is no reason to suppose, therefore, that determining the value of a linguistic function must in general be easier or somehow more automatic than finding out the value of an arithmetical function such as $\xi^2$ (which may require calculation), or the value of a function such as The capital of $\xi$ (which requires knowledge of geographical facts). In fact, even in the case of the English function ‘$\xi$ killed $\xi$’, we need to carry out a certain number of operations in order to obtain its value for given arguments: after all, we do have to substitute the arguments for the variables, and in order to do that we need to know the conventions of the notation (for example, we need to know that any token of the same variable must be replaced with tokens of the same argument-expression, and that the substitution must follow the order in which the arguments are specified). So, the sense in which, if we know a Geachean function and the arguments that it takes on a particular occasion, we thereby know its value for those arguments, is not that we don’t have to do anything in order to determine its value for those arguments. The point, rather, is that the operations that we need to carry out in order to make this determination belong to the exercise of the capacity of recognizing the exemplifications of a common form. The relationship between a form and its instances is characterized by a kind of immediacy that does not belong, in general, to the relationship between a function and its values.
who knows that ‘p’ stands for ‘aRb’. While the definition of an ordinary arithmetical function relies on a way of specifying its range which makes no reference to the function itself, the definition of a Geachean function relies on a way of specifying its range which makes essential reference to the function that is being defined. The range of a Geachean function, we could say, is nothing but the set of items (propositions or thoughts) that share the form exhibited by the function.

vi) By presenting a proposition or thought as the value of a Geachean function, we describe an aspect of its logical structure (cf. Sullivan 1992, p. 98). The fact that the ‘Parkinson’s hat is awful’ is a value of the linguistic function ‘ς’s ζ is awful’, whereas ‘Parkinson’s disease is awful’ is not, tells us something about the logical complexity of each proposition. Moreover, by representing the same proposition or thought as the value of different Geachean functions for appropriate arguments, we describe different aspects of its logical structure. The fact that ‘aRb’ is both the value of ‘aRζ’ for argument ‘b’, and a the value of ‘ζRb’ for argument ‘a’, tells us something about the logical complexity of the proposition: it shows that the signs ‘a’ are ‘b’ occur in the proposition as semantic units of their own. None of this is the case for functions in general. If we are told that Stockholm is the value of the function The capital of ζ for argument Sweden, as well as the value of the function The place where ζ died for argument Decartes, but is not the value of the function The northernmost capital of ζ for argument Europe, we learn various facts about Stockholm, but nothing about its internal structure.

Given these six features that distinguish Geachean functions from functions in general, Geach is immune to the fundamental criticism that Dummett levels against Bell. It is clear, in fact, that for Geach both propositions (i.e. meaningful sentences) and thoughts are structured items. Moreover, the internal complexity of propositions mirrors the internal complexity of the thoughts they express. The function/argument model, when developed à la Geach, vindicates at least the spirit (if not also the letter) of the Articulation Thesis, because it incorporates at least the crucial elements (if not the entirety) of the part/whole model. Geach is not culpable of reducing the complexity of propositions at the level of sense to the complexity of referring expression. On the

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51 As noted above (note 47), it is debatable whether the function/argument model can incorporate the part/whole model completely or only partially. The weaker claim is enough for the point I am making.
contrary, Geach accounts for the idea that meaningful sentences *express* the thoughts they convey by displaying their internal articulation. The wholesale rejection of the part/whole model so emphatically advocated by Geach is inconsistent with his actual exegetical practice. Even though Geach does not play his cards as well as he could, his interpretation is not liable to Dummett’s criticism.

The question, now, is whether Geach’s proposal helps in any way to see how the Articulation Thesis and the Multiple Analyses Thesis can fit together, or whether it simply sits in the Dummettian camp of the debate, vindicating the former thesis, but dismissing the latter. It should be noticed, in this respect, that Geach discusses explicitly only the first kind of case of multiple analyses, i.e. the kind of case that Dummett can account for by means of the distinction between analysis and decomposition. Geach says nothing about the cases that pose a real problem for Dummett. In particular, he says nothing about the cases of the second kind, which Dummett is forced to dismiss. Unlike Dummett, Geach does not explicitly assert that the propositions ‘a//b’ and ‘D(a)=D(b)’ *cannot* express the same thought. Nonetheless, his interpretation does not show that things could stand otherwise. Stressing that the thought expressed by the proposition ‘a//b’ can be the value of the sense-function expressed by ‘ξ//b’ for the sense of ‘a’ as argument, as well as the value of the sense-function expressed by ‘a//ξ’ for the sense of ‘b’ as argument, does very little service. The real question, in fact, is how the propositions ‘a//b’ and ‘D(a)=D(b)’ may express the same thought. Of course, Geach could provide a straightforward answer to this question by pursuing consistently the analogy with arithmetical functions, as Bell does. But in that case, his interpretation would become liable to the criticism that Dummett mounts against Bell.

As Peter Sullivan (1992) has convincingly argued, Geach’s interpretation, taken as it stands, is fully compatible with the Dummettian contention that each thought has a *unique* identifying structure. There are many ways of analyzing the sentence ‘aRb’ into arguments and linguistic functions; but it seems that *one* of these analyses—namely the analysis into the linguistic function ‘ξRζ’ and the arguments ‘a’ and ‘b’—has a privileged status, because it *accounts* for the possibility of all the remaining analyses. Geach does not suggest or provide any reason to suppose that things stand in the realm of thoughts any different than they stand in the realm of meaningful sentences. Geach’s proposal,
therefore, does not rule out the idea that for each thought there are many possible derivative analyses, but only one fundamental analysis—i.e. the idea that Dummett’s distinction between ‘analysis’ and ‘decomposition’ is designed to capture. I am not claiming that Geach’s account entails this idea; but in order to question it, he would have to show that sentences with different semantic structures (such as ‘a //b’ and ‘D(a) = D(b)’) may express the same thought. Unfortunately, Geach’s elaboration of the function/argument model does not help to make sense of this possibility. My proposal, in the next section, is that in order to make some progress in this direction without falling back into the anti-Dummettian camp of the debate, we must work on our conception of ‘part’ and ‘whole’.

8. The multiple analyzability of organic wholes

In the previous sections, I tried to show that there are compelling exegetical reasons for attributing to Frege the Articulation Thesis as well as the Multiple Analysis Thesis. Moreover, I have sought to bring out the good philosophical insights that animate the two opposite sides 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 loose 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 may be seen to be equivalent 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 to 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 suggestion is that in order to get out of this standoff, we need to reject the Underlying Assumption. If we do so, we can attribute to Frege a view along the following lines, which combines the Articulation Thesis with the Multiple Analysis Thesis and incorporates the insights vindicated by each side of the debate. For Frege, (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 a meaning of their own, and their grammatical structure displays the structure of the thoughts they express. But at the same time, (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 does not have to concern merely the surface grammar 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 proposes): 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.

At first sight, a position of this sort might seem unavailable, because the Underlying Assumption might seem inescapable. But I submit that this is the case only
because we tend to conceive of the relation between a thought and its parts in accordance with an atomistic model of the part/whole relation. The same does not hold, however, if we conceive of the relation between a thought and its parts as Frege did—namely, in accordance with an organic model of the part/whole relation. Let me begin to substantiate these claims by spelling out the contrast between the two models of the part/whole relation.

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. More precisely, there is no conceptual necessity in this fact. 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 aggregation of independently conceivable components, and the parts are atomistically independent from the whole to which they contingently belong. For any whole of this kind, a version of the Underlying Assumption is indeed inescapable. For each pile of books, there will be 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 by a merely partial analysis is nothing but the combination of some of the parts revealed by the ultimate analysis of the whole. Any aggregative whole, accordingly, can be fully characterized by specifying the set of its ultimate constituents and their manner of combination.

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 an arm in the context of one organism can conceivably function in a different way in a very different organism—say, as a reproductive organ—and be, therefore, in the context of that other organism, a different functional part. The living organism is made up of parts that cannot be what they are except as parts of the appropriate wholes. The parts are thus conceptually dependent on the whole, while the whole is conceptually dependent on the parts, since an organism would not be what it is if it were composed of different functional parts. In virtue of this conceptual interdependence between the whole and parts, the living organism has a characteristic form of unity, which sorts it apart qualitatively from merely aggregative wholes.

When we are dealing with an organic whole, any relevant version of the Underlying Assumption looses its compulsory character. In order to see this, let’s focus on the living human organism. This is composed of many anatomical parts—organs and structures—which are identified in virtue of 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,

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52 There is of course an atomistically-minded philosophical tradition that challenges this 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, namely Moore 1903 (see especially §§ 20-22). My aim, here, is not to defend the organicistic tradition, but to investigate the relation between the notion of organic whole and the possibility of multiple analyses—assuming the legitimacy of the notion of an organic unity.
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 bocks’ 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 part 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 form this set. To point out that all
organs and anatomical structures are ultimately made up of atoms would be irrelevant,
since 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 still lack the relevant knowledge, but because such a diagram
would tell us nothing of what anatomy has to tell us. The living organism, as it is studied
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.

Now, there are independent reasons for attributing to Frege an organic conception
of the internal complexity of thoughts, in explicit opposition to a widespread (and
tempting) aggregative conception. It may be argued, in fact, that this attribution is
supported by Frege’s commitment to the Context Principle and to the correlative doctrine
of the primacy of judgment. At the level of language, the Context Principle states that ‘it
is only in the context of a proposition that words have any meaning’ (Frege 1884, §62).
Frege insists on many occasions that propositions (i.e. meaningful sentences) are
generally structured into logical parts, each of which has a meaning of its own.53 But any
such part is the logical unit that it is in virtue of the logical function that it performs
within a complete proposition. The same phonetic or orthographic pattern may function

53 See e.g. the passages I refer to in note 1.
logically in very different ways in different propositions—and *be*, therefore, in different propositional contexts, a different logical unit. The word ‘Vienna’, to take one of Frege’s example, is logically a proper name in ‘Vienna is the capital of Austria’, and a concept-word in ‘Trieste is no Vienna’ (*Frege 1892b*, p. 200, translation p. 189.). By adopting the Context Principle, Frege rejects the atomistic conception of sub-propositional meaning, according to which words have meaning prior to and independently of their propositional contexts, while propositions result from the mere aggregation of antecedently given building-blocks. This atomistic view, for Frege, involves a *psychologistic* conception of meaning. Frege concedes, in fact, that words may acquire and retain a ‘psychological meaning’ quite independently of the logical role that they play within meaningful sentences. The word ‘Vienna’, for example, may elicit the same mental picture and feelings when it is used as a proper name, when it is used as a concept-word, and even when it is not put to any logical use at all. This sort of meaning, for Frege, is a legitimate subject of psychological investigation; but we stop doing psychology and get entangled in a form of philosophical confusion—namely psychologism—as soon as we assume that the study of this sort of meaning is relevant for an understanding of the *truth* of propositions and of the *validity* of inferences. If we are interested in these distinctively *logical* matters, we must focus on the logical meanings of words, i.e. on the logical function that they fulfill within meaningful sentences. Sub-sentential logical units are therefore dependent on their propositional contexts. At the same time, complete propositions depend on their logical parts: they mean what they do—and thus *are* the propositions that they are—in virtue of the collaborative work of their constituent expressions. Between the proposition and its parts there is the form of conceptual interdependence that is characteristic of organic wholes.  

The same form of conceptual interdependence reappears at the level of the *contents* of propositions, i.e. at the level of ‘judgeable contents’ or ‘thoughts’. It is well known that Frege, throughout his career, subscribes to a view about the priority of judgment over concepts. Frege opposes the atomistic approach to the philosophy of logic, which construes thoughts as mere aggregates of thought-components that are given in advance—i.e. prior to and independently of their combination in contents that can be

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54 I defend and articulate in greater detail this reading of Frege’s Context Principle in Bronzo 2013.
judged to be true or false. In contrast to this atomistic approach, Frege emphasizes that he always comes by the parts of a thought (or judgeable content) by analyzing a complete thought (or judgeable content):

[1]Instead 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, p. 18, translation p. 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, p. 273, translation p. 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. A thought-component is what it is in virtue of the logical role that it performs within a whole thought. The parts of the thought are thus dependent on the thought to which they belong. At the same time, the complete thought depends on the parts: it is the thought that it is in virtue of the collaborative work of its components. Between the thought and its parts there is the same form of conceptual interdependence that holds between the meaningful sentence and its logical parts. In both cases, we have to do with organic wholes, as opposed to aggregative ones. As several commentators have maintained, the Context Principle can be seen as a consequence of Frege’s view about the priority of judgment.55 If there is no such a thing as a thought-component in isolation, then there is no such a 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-

55 See Bell 1979, p. 5; Sluga 1987, p. 86; Conant 1998, pp. 231-3. In contrast to this line of interpretation, Michael Dummett has argued that the passages where Frege says that he comes by the parts of the thought by analyzing the complete thought have nothing to do with the Context Principle: those passages, for Dummett, concern the question of the extraction of ‘complex predicates’ from complete sentences and the correlative formation of new (complex) concepts—a question that he thinks is quite independent from whatever is at stake in the context principle (see Dummett 1981a, pp. 295-6, 539). I indicate some of the reasons for resisting Dummett’s view in Bronzo 2013.
sentential expressions, prior to and independently of the employment of those expressions in complete sentences. The conception of the internal complexity of thoughts goes hand in hand with the organic conception of the internal complexity of meaningful sentences.

If this is correct and Frege does in fact adopt an organic—as opposed to an aggregative—conception of the internal complexity of thoughts, then he is entitled to reject the Underlying Assumption. This should become readily visible when we look at thoughts and their parts in analogy to other kinds of organic wholes, such as the living organism. We saw above that according to a plausible view, 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, which may be displayed in a diagram or illustration, 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 one and the same time all its physiological functions, and to which all the other analyses could be reduced. Similarly, Frege can maintain 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 one and the same time 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.56, 57

56 My 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 share Frege’s conception 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*, which is firmly committed to a version of the Context Principle (see especially 3.3ff), but insists that each proposition or thought has a single complete analysis (cf. especially 3.25).

57 My proposal agrees in some important respects with the interpretation advanced in *Levine 2002*. In particular, I fully endorse Levine’s claim that in order to understand Frege’s view about the multiple analyzability of thoughts, we must appreciate the fact that Frege (unlike Russell or Dummett) adopts a
Frege was well aware of the fact that the talk of ‘parts’ and ‘wholes’, when it is applied to thoughts and meaningful sentences, can generate problems or (as he called them) ‘hitches’, since we tend to take for granted an atomistic notion of part and an aggregative notion of whole (Frege 1918b, p. 155, translation p. 358; 1923, pp. 36-7, translation p. 390). One of the hitches that Frege explicitly discussed has to do with the asymmetry between saturated and unsaturated components of thoughts and sentences: as long as we are working with an atomistic notion of ‘part’, it is difficult to see how some of the parts of which a sentence or a thought is composed can be ‘unsaturated’ or ‘in need of completion’. A related hitch, which was also explicitly discussed by Frege, has to do with propositional unity: if we adopt an atomistic conception of the parts of the sentence and the parts of the thought, it is difficult to see what could account for their characteristic form of unity—i.e. for the fact that sentences are not mere lists of meaningful words, just as thoughts are not mere aggregations of thought-components.

Going beyond what Frege explicitly discussed, I have argued that another hitch that arises from the uncritical adoption of an atomistic notion of ‘part’ and an aggregative notion of ‘whole’ has to do with the multiple analyzability of thoughts. In order to understand Frege’s position on multiple analyses, we need to properly appreciate his opposition to the atomistic tradition and his organic conception of the internal complexity of thoughts. It is the lack of this appreciation that has led the exegetical debate into the stalemate that I have described and sought to overcome in this paper.

‘non-atomistic mereology’ for the relationship between a thought and its parts (pp. 201-3). 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, say, may be seen as composed of 3 battalions, 10 companies, or 1000 soldiers, whereas for Russell, according to Levine, ‘every whole admits of a unique analysis into simple parts’. This distinction, however, is orthogonal to the distinction between ‘aggregative’ and ‘organic’ wholes: the point that Levine attributes to Frege applies indifferently to both kinds of wholes. But more importantly, I cannot see 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).
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