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Reviewed by Rasa Davidaviciute

Review: *Frege on Thinking and Its Epistemic Significance*, by Pieranna Garavaso and Nicla Vassallo

Rasa Davidaviciute

The chief purpose of Pieranna Garavaso and Nicla Vassallo's book *Frege On Thinking and Its Epistemic Significance* is to explore the significance of thinking, understood as a mental process, to Frege's work. There is much to praise about this short book. It covers an interesting array of issues relating to a significantly under-researched theme in Frege's work, and the authors make a strong case for their central thesis, that Frege, contrary to some more orthodox interpretations of his work, had an interest in mental processes such as thinking and therefore that we should pay closer attention to the notion of thinking in Frege's work.

However, the book also has some shortcomings. First, it is perhaps too ambitious for its length, with the authors' analysis of the many issues they discuss often feeling rushed. In just over a hundred pages the authors discuss how the process of thinking relates to Frege's anti-psychologism, his conception of logic and his understanding of an objective human science, seek to show that Frege had a robust epistemology, and discuss the importance of natural language to Frege's conceptions of thinking and thoughts. Each of these issues could easily have been the focus of a book of this length. The result of devoting only a single chapter to each is that crucial details—e.g., how Frege's views developed over the course of his career and the historical context in which he worked—are often neglected. Lack of more careful consideration of these issues at times also leads the authors to paint a misleading picture of Frege's views, such as in chapter two, where they attribute to Frege a version of logical psychologism. Lastly, the book often fails to engage with the more recent

literature on Frege's work. As a result, some important claims are significantly underargued. This is especially evident in chapter three, where the authors seek to establish the relevance of the notion of thinking to Frege's work.

The book is divided into six chapters. Chapter one introduces the project and outlines its aims. Chapter two focuses on integrating the claim that Frege paid close attention to thinking, i.e., a mental process, with his deep-seated anti-psychologism. The authors address several strands of Frege's anti-psychologism, compare his views of logic to those of George Boole and surprisingly conclude that, in a specific sense of the term, Frege can himself be considered a logical psychologist.

In chapter three, the authors argue that the notion of thinking is of central significance to Frege's philosophy. According to the authors, Frege distinguishes between *das Denken* (thinking as a mental process) and *der Gedanke* (thought as an objective abstract entity) and identifies three distinct types of thinking: logical, psychological, and logical-psychological. They examine what epistemic role each can play within Frege's goal of creating an objective human science.

The fourth chapter addresses a variety of epistemological themes in Frege's work such as scepticism, justification, and naturalism. In light of this, the authors argue that Frege is more interested in epistemological questions than is typically thought and in particular that the mental process of thinking plays a central role in Frege's explanation of how the subjective world of ideas is connected to the objective world of thoughts.

Chapter five addresses the relationship between language, thoughts, and thinking in Frege's work. Garavaso and Vassallo argue that symbolic language plays an epistemic role in Frege's work in that it makes conceptual thinking possible. It does so "by allowing humans to gain internal control over their own ideas, by employing the sensible, that is, symbols and words, to signify the non-sensible, by overcoming the restrictions of geometrical and spatial intuitions and by allowing only the laws of

logic to govern pure thinking" (103). Language is also crucial for representing and expressing thoughts in a way that is possible for humans to grasp them: "we can only grasp thoughts because the structure of the sentence expressing them reflects the structure of thoughts they express" (103). Chapter six offers brief concluding remarks.

A strong virtue of this book is that by reorienting the discussion of (some of) Frege's work more generally, it invites us to put a fresh set of eyes on views traditionally attributed to him. One such set of views, explored in considerable detail in the book, is Frege's anti-psychologism. As the authors note, "it is widely believed that Frege did not regard human mental processes as philosophically relevant because of his often declared anti-psychologism" (1), so the crucial first step in arguing that Frege did pay attention to mental processes such as thinking is showing that this is compatible with his explicit anti-psychologism.

The authors tackle this problem in chapter two by providing a detailed discussion of Frege's relationship to psychologism and how thinking as a mental act relates to his conception of logic. The chapter begins by distinguishing several varieties of psychologism relevant to Frege's work. The most important of these to Garavaso and Vassallo's project is logical anti-psychologism.¹ Frege's logical anti-psychologism, according to Garavaso and Vassallo, rests on the conviction that the laws of logic are independent of the laws of thought. The authors then further characterize logical psychologism by distinguishing between explanatory and non-explanatory logical psychologism. According to the former, logic describes actual mental processes, prescribes the correct versions of mental processes and justifies the laws

¹The other two types of anti-psychologism found in Frege's work that the authors address are semantic and Platonist anti-psychologism. Semantic anti-psychologism has to do with Frege's dissatisfaction with "the account of meanings in terms of ideas taken as mental images" (34), while Platonist anti-psychologism is Frege's conviction that the subject matter of logic are the abstract entities in the third realm, not subjective ideas.

of logic by appealing to actual mental processes (25). The later attributes a normative role to logic, i.e., logic gives guidance as to how correct thinking ought to be executed, but the laws of logic cannot be reduced to actual mental processes and hence logic does not depend on our actual thinking.

Equipped with this taxonomy of varieties of anti-psychologism, Garavaso and Vassallo then proceed to claim that in a restricted sense Frege himself can be considered a psychologist. Given his commitment to the normativity of logic, we can consider him to be a prescriptive logical psychologist. Importantly, Frege's psychologism, according to Garavaso and Vassallo, is not explanatory, i.e., logic is not explained or justified by appeal to mental processes, but his conception of logic is psychologistic nonetheless. And because Frege's conception of logic "does not assert a total disregard of thinking and psychological matters" (34) it is not implausible that mental processes such as thinking should have been relevant to Frege's work. The remaining part of the chapter focuses on a comparison between the work of Frege and Boole. The authors argue that while there are many differences between the two, there are significant similarities between their accounts of logic, this way seeking to further establish that Frege's philosophy of logic is partially psychologistic (26).²

While Garavaso and Vassallo provide an interesting discussion of anti-psychologism in Frege's work, one may wonder how accurate and indeed useful is it to call Frege a logical psychologist, even in a qualified sense. What allows the authors to consider Frege to be a logical psychologist is their seeming conviction that logical anti-psychologism, broadly understood, is "a view that

²More specifically, the authors argue that both Frege and Boole held some version of non-explanatory logical psychologism. Additionally, in both Boole and Frege's accounts of "our apprehension of logic, symbols and language play a central role in the process of abstraction: for Boole, we abstract from one example to the general truth; for Frege we can abstract and isolate the logical element even when it is attached to psychological components such as ideas and feelings" (34).

asserts a total disregard of thinking and psychological matters in any account of logic" (34).³ We may then characterize positions that allow for establishing some connections between logic and human reasoning as psychologistic. However, this seems much too broad a characterization of logical psychologism and anti-psychologism. If this is the case, then anyone who considers laws of logic to have any correlation with deductive reasoning will be considered a psychologist, be it Frege, or anyone else. For instance, claiming that deductive reasoning is faulty when not in accordance with the laws of logic would be enough to make one a "logical psychologist" of this kind. The threat in casting one's net this broadly is that we are in danger of rendering the term "psychologism" empty: we fail to grasp what precisely is distinct to psychologism and in so doing end up failing to provide a characteristic definition of it altogether. As a result, one of the central claims of this chapter, viz., that Frege is a logical psychologist, similar in some sense to Boole, is (fortunately) far less radical than it sounds.

Frege's psychologism, thus construed, remains important in chapter three of the book. There the authors claim that upholding "the classical thesis that logic must provide the laws of thinking (*Denkgesetze*)" (44) is one of the central motivations for Frege's reflection on the notion of thinking. This thesis is crucial to the authors' discussion of the distinct notions of thinking found in Frege's work.

Garavaso and Vassallo argue that we can distinguish between three notions of thinking in Frege's work: psychological, logical, and logical-psychological thinking. Psychological thinking deals with subjective experiences such as ideas, representations, moods, and feelings. In virtue of this it is entirely subjective and

³It must be noted that Garavaso and Vassallo are not alone in understanding anti-psychologism with regards to logic in such a way. For instance, as the authors point out, Susan Haack describes anti-psychologism as the thesis that "logic has *nothing* to do with mental processes" (Haack 1978: 238; emphasis added).

non-shareable. Logical thinking (or pure thinking)—discussed by Frege in *Begriffsschrift*—is an ideal type of thinking that is governed by the laws of logic. While it is objective and shareable, logical thinking ought not be confused with actual human thinking, as it rather points to how "perfect minds would think and how we should think, if our goal is to attain the truth" (57). Lastly, logical-psychological thinking combines both the logical and the psychological element and can be characterized as our actual thinking (as opposed to the idealized pure thinking). While the psychological component remains subjective and incommunicable, "logical thinking is knowable—it mediates our apprehension of thoughts and warrants the persistence of their objectivity" (58). Given this taxonomy, we can say that logic provides the laws of thinking in two of the following senses. First, it provides laws describing pure thinking (61). Second, it provides prescriptive laws for actual human thinking, due to our ability to approximate the purely logical thinking in our actual natural processes of correct thinking (57, 61).

Regrettably, despite its considerable importance to the project, the authors discuss Frege's commitment to thesis that logic must provide the laws of thinking only very briefly. When presenting it as one of the motivations of Frege's reflection on thinking, Garavaso and Vassallo merely state it and quickly move on to identifying the other two reasons Frege might have had to reflect on thinking, i.e., a desire to propose an alternative view of logic that does not rely on psychology and "to establish an epistemological link which makes the creation of an objective science possible" (44), neither of which are addressed in significant detail either.⁴ They say a bit more about this in their discussion

⁴The authors note that what is most important for the work they do in the chapter is the third claim, i.e., Frege's desire "to guarantee the possibility that thinking provided access to something objective" (44). But it is not clear to what extent this is the case, given the importance of logic's connection to laws of thought to their taxonomy of the notions of thinking. But even granting this, it seems reasonable to expect that a book that seeks to present a new and

of logical thinking, but there the authors explore in what sense can we say that logic gives us the laws of thought, rather than provide reasons to read Frege as committed to this thesis. This is problematic because it is not clear to what extent Frege held on to this thesis as his thought matured.

It is common in Frege scholarship to assume that Frege starts off with an understanding of logic as providing the laws of thinking (in some sense of the term). For instance, in *Begriffsschrift* Frege indeed calls the laws of logic “laws of thinking that transcend all particularities” (1879, iv).⁵ But it is less clear to what extent Frege held on to this claim as his thought matured. For instance, as Øystein Linnebo (2003) has argued, Frege might have started off with a conception of logic similar to that of Kant, where logic is understood as a “science of the necessary laws of the understanding and reason in general” (Kant 1974, 15, quoted in Linnebo), but that he abandons this understanding of logic by the time of writing *Grundgesetze*.

More precisely, Linnebo argues that Frege’s conception of logic can be considered Kantian in part due to his initial acceptance of the logic’s being constitutive of human thought, i.e., that laws of logic are necessary for thinking to take place. This is especially prominent in *Grundlagen*. It is here that Frege famously remarks on the impossibility of thinking in the absence of the laws of logic: “we have only to try denying any one of them, and complete confusion ensues. Even to think at all seems no longer possible” (1884, 21; quoted in Linnebo). But Frege’s assessment of this role of logic may have changed in *Grundgesetze*, where we find the *Grundlagen* claim reconsidered:

Stepping outside of logic one can say: our nature and external circumstances force us to judge, and when we judge we cannot dis-

a considerably unorthodox reading of Frege as a philosopher interested in the mental process of thinking would dwell more on underlying motivations Frege might have had to be interested in thinking in the first place.

⁵While it is more common to translate “*Gesetze des Denkens*” as “laws of thought”, I am here keeping consistent with Garavaso and Vassallo’s translation of this as “laws of thinking”.

card this law—of identity, for example—but have to acknowledge it if we do not want to lead our thinking into confusion and in the end abandon judgment altogether. I neither want to dispute nor endorse this option, but merely note that what we have here is not a logical conclusion. What is offered here is not a ground of being true but of our taking to be true. (Frege 1893, xvii)

Linnebo’s interpretation of the passage is that Frege now considers the argument presented in *Grundlagen* as bearing only on our takings-to-be-true, which is “an empirical notion, which belongs to psychology and has nothing to do with objective truth” (Linnebo 2003, 246). What is more, Linnebo argues that by the time of writing *Grundgesetze* Frege moves even further from a Kantian conception of logic by rejecting the view that “a non-empirical study of the human mind is possible” (2003, 247). Linnebo notes that “if such study were possible, it would enable us to establish eternally valid principles about the nature of human thought. But this is exactly what Frege now denies” (2003, 247).

Linnebo identifies two reasons for this change in Frege’s thought: (1) to guarantee the logicality of the axiom system he needed for his logicist project—“it is hard to see how *Basic Law V* can be said to be constitutive of thought. Unlike other logical axioms, *Basic Law V* doesn’t seem to be the kind of truth which, if denied, would make all thought collapse into confusion”; (2) Frege’s increasingly fervent anti-psychologism: “as Frege’s anti-psychologism hardened, I believe Frege became more and more uncomfortable with his appeal to human mind [even though this appeal was non-empirical] lingering at the heart of his philosophy” (2003, 249).

If Linnebo is correct in his reading of Frege, Garavaso and Vassallo need to do more work to establish that Frege was centrally interested in human thinking throughout his career. Importantly, if Frege indeed chose to abandon the claim that logic is constitutive of human thinking for the reasons that Linnebo identifies, it becomes harder to see why we should take him to be genuinely interested in *human* thinking throughout his career,

as Garavaso and Vassallo claim. And if Linnebo is wrong, and Frege's views on the relationship of logic and the laws of thinking have not changed, Garavaso and Vassallo need to do more work to establish this.

The point here is not to assert Linnebo's or anyone else's interpretation of Frege's views. What I rather want to point out is that the claim that Frege was committed to the view that logic must provide the laws of thinking is more controversial and complicated than Garavaso and Vassallo treat it to be. In this respect, and given the relative importance of this claim to their project, it is truly a pity that they do not focus on the issue more. It would have made the authors' case much stronger if they had paid more attention to how Frege's views of the nature of logic and its relationship to the laws of thinking might have changed through his career and how Frege's views on the matter fit with those of his contemporaries, especially those influenced by the Kantian conception of logic.⁶ Throughout the book the authors take for granted the claim that Frege's views have generally not changed much through his career, which affords them the opportunity to read his early work such as *Begriffsschrift* (1879) alongside his later essays such as "Logic" (1897) and "Sources of Knowledge of Mathematics and Mathematical Sciences" (1924–25) and find robust continuity between them. This continuity should be argued for, not assumed, especially given that it is not uncontroversial.

An additional concern that relates directly to the issue discussed above is that Garavaso and Vassallo overall do not engage enough with contemporary Frege scholarship. Instead the book's main interlocutor is Michael Dummett. The authors note

⁶The authors do note in the introduction that Frege's views of logic and thinking were deeply influenced by the concerns of thinkers such as Lotze, Wundt, and Boole and that keeping in mind their work helps bring to light the similarity in Frege's treatment of thinking in his own discussion (8). However, aside from a brief comparison of Frege's views on logic to those of Boole, the authors do not engage in a historical analysis of any other views that might have influenced Frege's views of logic and thinking.

that despite the many criticisms raised against Dummett's interpretation of Frege and their own deep disagreements with some core points of Dummett's interpretation of Frege, "his work still provides the best developed, encompassing, systematic, and articulated effort to reconstruct Frege's thought." For these reasons, they choose to make Dummett their main interlocutor "in contrast to other more recent and not yet influential scholars" (8). But even granting for the sake of argument that Dummett can be considered to have provided the most systematic and influential contemporary interpretation of Frege's thought, it is not clear that this justifies the focus on Dummett's interpretation of Frege rather than the more contemporary (if less systematic and influential) scholarly work on the central issues addressed in the book, such as that of Linnebo.

Despite these concerns, Garavaso and Vassallo's book is a valuable addition to Frege scholarship. While there is much more work to be done in this area of research, the authors provide a very interesting initial investigation of the relevance of thinking to Frege's philosophy and its epistemic significance. The book raises a host of original and worthwhile questions on issues spanning from Frege's views of psychologism and anti-psychologism to his treatment of natural language and how it relates to Frege's conception of thinking and thoughts. But perhaps most importantly, the book is commendable for introducing more nuance and complexity to our reading of Frege's work. By calling attention to the relevance of mental processes such as thinking to Frege's work, the authors add an important dimension to our understanding of both Frege's conception of logic, his anti-psychologism, and the broader epistemic concerns he might have had.

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