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THE LOGICAL ANTI-PSYCHOLOGISM OF FREGE AND HUSSERL

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ABSTRACT

Frege and Husserl are both recognized for their significant contributions to the overthrowing of logical psychologism, at least in its 19th century forms. Between Frege’s profound impact on modern logic that extended the influence of his anti-psychologism and Husserl’s extensive attempts at the refutation of logical psychologism in the Prolegomena to Logical Investigations, these arguments are generally understood as successful. This paper attempts to account for the development of these two anti-psychologistic conceptions of logical objects and for some of the basic differences between them. It identifies some problems that are common to strongly anti-psychologistic conceptions of logic and compares the extent to which Frege’s and Husserl’s views are open to these problems.

Accordingly, this paper is divided into two parts. Part I develops a conception of the problems of logical psychologism as they are distinctively understood by each philosopher, out of the explicit arguments and criticisms made against the view in the texts. This conception is in each case informed by the overall historical trajectories of each philosopher’s philosophical development. Part II examines the two views in light of common problems of anti-psychologism.
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LIST OF ABBREVIATIONS

Abbreviations of Works by Frege

BLA  *The Basic Laws of Arithmetic* (Translated of *Grungenetze der Arithmetik*, 1893 by Montgomery Furth; citations from M. Beaney, *The Frege Reader*)

BS  *Begriffschrift: A formal language of pure thought modeled on that of arithmetic* (Translated by Micheal Beaney)

CO  “On Concept and Object” (Translated by P. Geach; citations from M. Beaney, *The Frege Reader*)

FA  *Foundations of Arithmetic: A logico-mathematical enquiry into the concept of number* (Translation of *Grundlagen*, 1884 by J.L. Austin)

FC  “Function and Concept” (Translated by P. Geach; citations from M. Beaney, *The Frege Reader*)

RH  “Review of Dr. E Husserl’s *Philosophy of Arithmetic*” (Translated by E. W. Kluge)

SB  “On Sinn and Bedeutung” (Translated by Max Black; citations from M. Beaney, *The Frege Reader*)

T  “Thought: A logical Inquiry” (Translated by Peter Geach and R. H. Stoothoff; citations from M. Beaney, *The Frege Reader*)
Abbreviations of Works by Husserl

CN  “On the Concept of Number: Psychological Analyses”

LI  *Logical Investigations* (Translation of *Logische Untersuchungen*, by J.N. Findlay); I will use LI 1 and LI 2 to refer to volumes 1 and 2, respectively, of the Findlay edition.

PA  *Philosophy of Arithmetic: Psychological and Logical Investigations*

PS  “Psychological Studies in the Elements of Logic”

RS  “Review of Ernst Schroder’s *Lectures on the Algebra of Logic*”
Introduction

Both Frege and Husserl are generally recognized for their significant contributions to the overthrowing of psychologism about logic, at least in its 19th century forms. Between Frege’s profound impact on modern logic that extended the influence of his anti-psychologistic position and Husserl’s extensive attempts at the refutation of logical psychologism in the *Prolegomena to Logical Investigations*, these arguments are generally considered to have settled the question.

For Frege, a commitment to anti-psychologism figures prominently, for example, in the three fundamental principles that guide his work in the *Foundations of Arithmetic*:

- Always to separate sharply the psychological from the logical, the subjective from the objective;
- Never to ask for the meaning of a word in isolation, but only in the context of a principle;
- Never to lose sight of the distinction between concept and object. (FA, X)

The first of these principles is straightforwardly anti-psychologistic. It indicates that the logical is of an essentially different nature than the psychological and warns against allowing the one to encroach upon the territory of the other. And it is a distinction that can found throughout all of Frege’s philosophical work. But the second principle—the celebrated context-principle—also has anti-psychologicistic implications. Frege explains, “if the second principle is not observed, one is almost forced to take as the meanings of words, mental pictures or acts of the individual mind, and so to offend against the first principle as well” (FA, X). Neglect of the
context principle encourages a picture of meaning characterized by subjective ideas and acts.

Anti-psychologism is central to at least one stage of Husserl’s philosophical development too. He is generally recognized as having produced the most systematic and extensive critical treatment of psychologism to date. Almost the entirety of the Prolegomena, the first volume of Husserl’s Logical Investigations, is devoted to the task of refuting logical psychologism. These anti-psychologistic arguments are reinforced by the well-developed account that he offers elsewhere in the Logical Investigations of logical objects as ideal entities.

This paper will attempt to account for the ways those two anti-psychologistic conceptions of the nature of logic come about and for some of the basic differences between them. It will identify some problems that are common to strongly anti-psychologistic conceptions of logic and compare the extent to which Frege’s and Husserl’s projects are open to these problems. Accordingly, this paper will be divided into two parts.

In Part I of this paper, I undertake a detailed articulation of the problems of logical psychologism as they are understood by Frege and Husserl. Though there is a good deal of overlap in the kinds of observations and arguments made by the two philosophers, their interpretations of the shortcomings of psychologism differ significantly. While securing objectivity and the mind-independent nature of knowledge is an issue of particular salience for Frege, for example, it recedes into the background of Husserl’s position. Husserl’s concerns tend to encompass
broader interests about what is required by a sufficient theory of logic in order to explain how objective knowledge figures in subjective acts of knowing. In order to better appreciate what differs in their conceptions of what is problematic about psychologism, it will be important to contextualize the discussion in terms of the overall trajectories of their philosophical development. Thus, Part I of this paper is divided into two sections for each philosopher (with the two sections on Husserl following the two on Frege). In the first, I characterize the philosopher’s initial project and the development of his thought, in order to provide a context for understanding why and in what forms the question of logical psychologism emerges as a salient problem. I examine how the development of each philosopher’s views of the nature of logic, and, by the same token, his conception of the pitfalls of psychologism, is informed by the other tasks at hand.

In the most general sense, both Frege and Husserl begin their careers with an interest in the same task: to provide a foundation for arithmetic that would impart rigor to the methods of mathematical analysis. How each conceived of this task was, even from the very beginning, vastly different. Whereas Frege’s views exhibited a strongly anti-psychologistic attitude from the outset, Husserl’s anti-psychologism originated in a certain kind of failure of his initial philosophical ambitions.

With this framework of the philosophical context in hand, I then turn to the question of the particular nature of each philosopher’s anti-psychologism, examining directly the textual manifestations of these views. The examination of the arguments made against psychologism, brought into relief by the preceding
discussion of the historical trajectories of philosophical development, serves as a resource for understanding what the distinctive nature of the criticism is in each case.

Frege’s anti-psychologism is perhaps best characterized as a stance or posture. While he is unequivocal about his rejection of the position, nowhere does he systematically go about producing arguments against it. Where Frege does provide arguments against logical psychologism they are generally intended to incite dubiousness about the position or exhibit what he takes to be its absurdities, rather than to provide direct refutations of it. What this means is that while Frege is overt in his logical anti-psychologism, the manifestations of it are to be found as much in the orientation of his views about the nature of logic as in explicit arguments against the view. For this reason, my consideration of Frege’s anti-psychologism will include a brief discussion of his so-called Platonism.

By contrast, Husserl, as I have already noted, devoted the better part of an entire volume to a methodical critique of logical psychologism, most of which consists of arguments meant to refute the position. As this forms Husserl’s most extended and explicit treatment of the issue, I will largely focus on the arguments of the Prolegomena for an analysis of his anti-psychologism. At the same time, Husserl’s anti-psychologism is strongly manifested in his own ‘idealism’ about logical objects, which is many ways far more developed than is Frege’s. The comparison of Husserl’s and Frege’s treatments of logical objects is the focus of part II of this paper. Thus, though I will include as a part of my analysis Husserl’s
conceptions of the ideality of meanings and essences and their status as universals as these views are presented in Investigations I and II, I will reserved an extended discussion of the matter for Part II.

Finally, having sketched the general shape of these two anti-psychologistic positions, I transition in Part II to a more detailed comparison of the two conceptions of logical objects. I then identify some problems that are common to strongly anti-psychologistic conceptions of logic and compare the extent to which Frege’s and Husserl’s projects are open to these problems.

Part I: The Problems of Logical Psychologism

The Development of Frege’s Philosophy

In the preface to his first book, Frege writes, “arithmetic, as I remarked at the beginning, was the starting point of the train of thought that led me to my Begriffsschrift” (BS, 51). The Begriffsschrift [Concept-Script: A formal language of pure thought modeled on that of arithmetic], published in 1879, contains a newly developed logical symbolism and is now generally recognized as the seminal work of modern logic. In this work, Frege revolutionized logic with the invention of quantifier notation and developed what is today known as predicate logic. But, as Frege’s prefatory remarks make clear, his interest in the development of this new ‘concept-script’ was born, initially, out of his interests in arithmetic.

In particular, Frege’s central interest was in providing the best possible foundations for arithmetic in order to transform mathematical analysis (i.e. the
differential and integral calculus) into a fully rigorous procedure. His search for this foundation for arithmetic in logic was informed by a view of logic on which its laws are, as “the laws on which all knowledge rests,” capable of providing “the firmest proof” of a scientific truth (BS, 48). The task for Frege was to determine how much of arithmetic could be derived from logic by a gapless chain of logical inferences. If arithmetic could be fully reduced to logic, then the status of mathematical truths as fully justified would become perspicuous in their logical form. For logic, as Frege conceives of it, is the science of inference. It provides us with the rules for determining when some truth is sufficiently grounded in another, i.e. when inferences can be made. Now logic can fulfill this foundational role because it is the maximally general science of the laws of thought. Logic as Frege conceived it, i.e. as a universal science, abstracts from any of the particular content that characterizes the other sciences and is composed of the most general truths. These maximally general truths, which make up the laws of logic, thus apply universally to thought. “Thought is in essentials the same everywhere: it is not true that there are different kinds of laws of thought to suit the different kinds of objects thought about” (FA, III). Logical laws are truths that apply to everything. What they capture are the modes of inference that characterize any science at all. ¹

In attempting to fully reduce arithmetic to logic, however, Frege soon found ordinary language inadequate to the task of expressing logical inference clearly.

¹ For an account of how Frege’s universalist conception of logic differs importantly from contemporary schematic conceptions of logic see Goldfarb 2001.
enough to guarantee that nothing intuitive would “slip in unnoticed” (BS, 49). What he needed was a language that expressed only the conceptual content that was logically significant for inference and would ignore everything else that is irrelevant, “all those features of language that result only from the interaction of speaker and listener” (BS, 54). A ‘concept-script’ built only of these conceptual contents would make immediately perspicuous the chain of inferences involved. In the preface to the *Begriffsschrift*, Frege compares the relationship between his concept-script and ordinary language to that of a microscope and the human eye:

The [eye], due to the range of its applicability, due to the flexibility with which it is able to adapt to the most diverse circumstances, has a great superiority over the microscope... But as soon as scientific purposes place great demands on sharpness of resolution, the eye turns out to be inadequate. The microscope, on the other hand, is perfectly suited for such purposes, but precisely because of this is useless for all others (BS, 49).

Thus, though it is sometimes interpreted as a general dismissal of ordinary language, Frege’s logically perfect language was developed as nothing more than a tool for the undertaking of a project to provide a solid foundation for arithmetic in logic.

That is not to diminish the achievements of Frege’s *Begriffsschrift*, for this new tool was also utterly innovative. In order to fully reduce arithmetic to logic, Frege needed to develop a symbolism that was capable of representing all of the propositions of arithmetic, including those of multiple generality, which remained problematic for the traditional Aristotelian logic. Statements of multiple generality, such as “Some guys have all the luck” or “Everybody loves somebody,” are common in arithmetic (for an example more pertinent to arithmetic consider, “every number
has a successor") but they presented a challenge for the logic of the time. Traditional logic dealt with only four types of sentences: "All As are Bs," "No As are Bs," "Some As are Bs," and "Some As are not Bs". Each of these four types of sentences contains only one quantifier ("All As are Bs," "Some As are Bs") but statements of multiple generality contain two ("Everybody loves somebody"). Traditional logic had no way of representing this. An analysis of these statements was crucial, however, for Frege’s definition of number. Thus, it was in order to capture and enable analysis of statements such as these that Frege invented the quantifiers.

Another crucial innovation that made the introduction of the quantifiers possible was Frege’s importation of the function-argument analysis from mathematics to logic. Sentences that traditional logic analyzed into subject and predicate could be analyzed by Frege into a function and argument. In particular, sentences such as "All men are mortal" could be analyzed into more than one function: ( ) is a man and ( ) is mortal.

From this point on, Frege’s logicist project was to almost entirely dominate the rest of his work. In the *Begriffsschrift*, he had merely accomplished a single step towards his aim (albeit one giant leap for logicians) by overcoming the obstacle presented by the lack of a sufficiently clear logical symbolism. The immediate task at hand, which he already identifies in the preface to the *Begriffsschrift*, is to satisfy the need for a definition of the natural numbers in logical terms (BS 48, 52).

Frege undertook this project of defining the concept of number in a book published in 1884 called *The Foundations of Arithmetic (FA). The Foundations of*
Arithmetic was written as an informal account of his derivation of arithmetic from logic. Frege opens FA with a critique of alternative accounts of arithmetic in order “to dispel this illusion that the positive whole numbers really present no difficulties at all” (FA, IV). Many of Frege’s contemporary mathematicians failed to recognize the necessity of a definition of the concept of number since they were able to proceed well enough in their proofs by merely assuming it. For Frege this remained an unacceptable deficiency in the rigorousness of mathematical proof:

The rigour of a proof remains an illusion, even though no link be missing in the chain of our deductions, so long as the definitions are justified only as an afterthought, by our failing to come across any contradiction. By these methods we shall, at bottom, never have achieved more than an empirical certainty, and we must really face the possibility that we still in the end encounter a contradiction which brings the whole edifice down in ruins (FA, IX).

Thus, part of what Frege hoped to achieve with his criticisms was to make felt the need for a definition of number. Included among the views that Frege rejects here, is the empiricist conception of numbers as properties of external things, as well as the (essentially psychologistic, thinks Frege) conception of numbers as anything subjective, such as ideas. He articulates here a notion of numbers that is both nonsensible and objective (FA, 38).

Frege also offers his own account of arithmetic in FA and a definition of the concept of number in terms of the extension of a concept. He holds that any statement of number contains an assertion about a concept. When I say that there are 18 clementines in the bowl, I am saying something about the concept “clementine that is in the bowl,” namely, that it falls under the concept of being a concept under which 18 things fall. This conception accords with our ordinary
intuition that given any set of objects, the question ‘how many?’ only makes sense "in view of the way in which we have chosen to regard it," that is, in reference to a concept (FA, 29). Short of this, the same physical facts can be analyzed many different ways: as 37 grapes, 6 branches, or 1 bunch of grapes, for example. It is only with reference to a concept that a question or statement of number makes sense. The importance of this observation for Frege’s work is that it shows how a statement of number can be formulated logically.

Given that The Foundations of Arithmetic accomplished only an informal explication of the derivation of arithmetic, the final task for Frege’s logicist project was the actual rigorous demonstration of the fact that the laws of arithmetic could be derived from purely logical sources. This was his undertaking in the Grundgesetze der Arithmetik [Basic Laws of Arithmetic] a planned three-volume work that was never completed. The first two volumes were published in 1893 and 1903 respectively but Frege encountered insurmountable difficulties just as the second volume was going to press and the third volume was never finished. What were the difficulties that ultimately derailed Frege’s project? Bertrand Russell wrote to Frege with the discovery of what is now known as Russell’s Paradox, which revealed an inconsistency in Frege’s system of thought. The problem lay in Frege’s belief that the extensions of concepts were objects and that concepts had to be defined for all objects. This meant that, in regard to a particular concept, all objects had to be assigned either to the group of things that fell under that concept or to the group of things that didn’t. What Russell had discovered was an inconsistency in
these two beliefs: he discovered a concept for which it was impossible to assign its extension to either the group of things that fell under that concept or to the group of things that didn’t, namely, the concept of the extension of things that do not fall under themselves. Any object that fell under the extension of the concept, by virtue of the very content of the concept, did not fall under the extension of the concept and vice versa.

Russell’s paradox ultimately sealed the fate of Frege’s logicist project, but in spite of the great extent to which Frege’s work was unified under these aims, much of his work nevertheless had an enormous lasting influence in various fields of philosophy and logic. I mention the most important of these here insofar as an understanding of the continuity of these works with Frege’s general philosophical development impacts our understanding of the way that Frege’s Platonism appears in them. Between 1890 and 1892, while working on the Grundgesetze, Frege published three articles that each became important landmarks in their own right in analytic philosophy, but which were written in support of his logicist project. One of these, an article published in 1892 entitled ‘On Sinn and Bedeutung,’ is perhaps the most famous of any of his writings largely because of its seminal role in the philosophy of language. Because of important observations regarding the distinction between the sense and reference of a name or sentence, it is commonly read as containing Frege’s theory of meaning.\(^2\) Frege’s explicit aim in the essay, however, is

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\(^2\) See Dummett 1973 and 1981. For a challenge to the idea that Frege in fact has a theory of meaning, see Weiner, 2006.
to solve a particular challenge about identity statements, namely, whether they
describe a relation between names or between objects. His position in the
*Begriffsschrift* had been that identity statements describe a relation between names,
however, in ‘On Sense and Reference’ he explains how this fails to account for the
differing cognitive value between statements such as ‘a=a’ and ‘a=b’. Whereas the
first statement holds *a priori*, the latter looks as though it could contain valuable
information. On the other hand, if identity statements are understood to be about a
relation between objects, then there is nothing to explain the cognitive value in
learning that a=b. Frege’s solution in ‘On Sinn and Bedeutung’ is to attribute the
differing cognitive value to “a difference in the mode of presentation” or sense of the
statements, thereby making the critical distinction between sense and reference
(SB, 152).

It is important to recognize the purpose of this essay as an extension of
the larger project of Frege’s work because merely reading it as a stand-alone essay
encourages the thought that Frege was here primarily offering a theory of meaning.
Considered out of the context of his general philosophical development, the appeal
to senses as (apparently) abstract objects can then seem unjustified or undeveloped
as a *theory* of language or meaning. I will return to Frege’s treatment of senses and
the problems facing his Platonism about them in Part II.

The second essay I will mention here is “Thought: A Logical Inquiry,” an
essay written late in Frege’s life as part of a series called ‘Logical Investigations’
born out of his various attempts to write a text book on logic. The series explains his
views on the nature of logic, truth, thought, negation, and generality. “Thought,” in
particular, analyzes the laws of logic as the laws of truth and investigates the nature of the kinds of things that can be true, viz. thoughts. Thoughts are the senses of sentences and are neither objects of the external world, nor ideas. Rather, Frege says that they must belong to some third realm. Frege’s characterization of thoughts in this way is generally understood as one of his most explicit expressions of his Platonism about logical objects. I will discuss it at further length in the next section.

**Frege’s Anti-psychologism**

Reference to psychology and psychological studies appears consistently throughout Frege’s work. Nearly all of his writings address the subject and it serves a backdrop against which Frege can highlight the importance of the distinction between logic and psychology and therefore the importance of his own logical tasks.

As previously mentioned, Frege’s anti-psychologism is best understood in terms of an anti-psychological orientation or attitude rather than a systematic articulation of the problems of psychologism. While its presence among his views is undeniable, it consists largely of cautionary remarks regarding the importance of avoiding confusion of the psychological with the logical and the ever-present danger of slipping into subjectivism. There are remarks that highlight the fact that the properties of logical objects are unlike those of psychological or physical ones but nowhere do we find explicit attempts at refutation of logical psychologism such as those in Husserl’s work. There is some suggestion that Frege might have even
thought a refutation impossible.\(^3\) This suggestion appeals to Frege’s conception of logical laws as fundamental. Since psychologism calls into question the justification of logical laws, which for Frege simply are the ultimate grounds for justification, no refutation is possible. Absent the recognition of the validity of logical laws, Frege felt there was nothing more to appeal to: “Now the question why and with what right we recognize a logical law as true, logic can only answer by reducing it to another logical law. Where that is not possible, logic can give no answer” (BLA, 204).

Similarly, Frege expresses acrimonious cynicism about the possibility of his work having any impact on psychologistic logicians (BLA, 207). Again the implication is that where the psychological logician fails to appreciate the self-evidence of logical laws, there is no recourse. In any case, the examination of Frege’s texts reveals few full-blown arguments against psychologism. Thus, in this section, I analyze both Frege’s arguments, as well as the passages in which he merely explicitly repudiates logical psychologism, in order to better understand what exactly he found objectionable.

There is little explicit commentary on the subject of logical psychologism in the *Begriffsschrift*, though it should be noted that Frege’s anti-psychologistic orientation is present in a number of distinctions he makes there. For example, in his prefatory remarks regarding the aim of the work, he distinguishes between the psychological origins of a proposition and its source of justification. The former is

\(^3\) See Follesdal 1958, 40; Mohanty 1982, section III of Chapter 2; and Kusch 1995, who suggests that “Frege probably thought that only the completion of his entire project would provide a convincing argument against psychologism” (61).
something that varies for each think, whereas the latter “is more definite, and its answer is connected with the inner nature of the proposition concerned” (BS, 48). Thus, the psychological origins of a proposition are sharply separated from what constitutes its essential nature.

Similarly, Frege distinguishes two types of truths on the basis of their kinds of justification: those that require empirical proof and those whose proof can be given purely logically (BS, 48). Purely logical proof is the firmest proof, since it “precind[s] from the particularity of things” and is based solely on logical laws (BS, 48). It is the aim of Frege’s logicism, of course, to show that the propositions of arithmetic belong to this latter category.

In the Foundations of Arithmetic, Frege’s anti-psychologism is explicit and prolific. We already saw that psychologism plays a fundamental role in the principles that guide the work. In the preface to this work, we find the same distinctions that were made in the Begriffsschrift between genetic studies and justification. Frege’s focus in these prefatory passages is to distinguish his own philosophical study of number from other methods of investigation. In particular, psychological studies of “characteristically fluctuating and indefinite” states of consciousness are especially ill-suited to the definite and fixed concepts and objects of mathematics. He writes, “it may, of course, serve some purpose to investigate the ideas and changes of ideas which occur during the course of mathematical thinking; but psychology should not imagine that it can contribute anything whatever to the foundation of arithmetic” (FA, VI). Psychological matters are irrelevant here because
Frege’s task is a foundational one concerned with the grounds of proof. It is not that psychological or genealogical studies have no value, but that they can play absolutely no role in justification. Recall that the project of providing these foundations, here furthered by the definition of the concept of number, has as its aim a rigorous and gapless derivation of arithmetic from logical principles. Such was the point of providing a definition of number in the first place. Thus, Frege warns against confusing any psychological study of the origins of an idea or proposition with its justification: “Never, then, let us suppose that the essence of the matter lies in such ideas. Never let us take a description of the origin of an idea for a definition, or an account of the mental and physical conditions on which we become conscious of a proposition for a proof of it. A proposition may be thought, and again it may be true; let us never confuse these two things” (FA, VI).

In addition to pointing out the essential difference between psychological genetic studies and justification Frege expresses a particular concern about one of the consequences of confusing the two. He describes the threat that a study of psychological origins presents to truth by making it entirely subjective: “We suppose, it would seem, that concepts sprout in the individual mind like leaves on a tree, and we think to discover their nature by studying their birth: we seek to define them psychologically, in terms of the nature of the human mind. But this account makes everything subjective, and if we follow it through to the end, does away with truth” (FA, VII). If we employ psychological studies of the origin of a concept in order to define it, then we make the concept a psychological, subjective entity and
ultimately deprive ourselves of the possibility of accounting for truth. A second
passage elaborates on the way in which everything becomes subjective. In section
27, he gives an argument against the conception of number as an idea:

If number were an idea, then arithmetic would be psychology... If the number two were
an idea, then it would have straight away to be private to me only... We should then have
it might be [sic] many millions of twos on our hands. We should have to speak of my two
and your two, or one two and all twos. If we accept latent or unconscious ideas, we
should have unconscious twos among them, which would then return subsequently to
consciousness. As new generations of children grew up, new generations of twos would
continually be being born (FA, 37).

If concepts are understood to be ideas, then they become private entities that vary
with each individual, and we would have to speak of the existence of many ‘twos’.
The essential identity of the number concept is lost. He concludes: “weird and
wonderful, as we see, are the results of taking seriously the suggestion that number
is an idea” (FA, 37-38). Indeed. If such are in fact the consequences of understanding
number as an idea, the psychologistic position would be an incredibly strange set of
beliefs to hold.

Frege devotes a number of pages in the preface to the *Grundgesetze* as well to
the subject of psychological logic. Among these passages are some of his most
explicit explanations of what the problems of logical psychologism consist in. Again,
Frege’s concerns center on the threat it presents to truth. Here, however, his
objections take on the additional inflection of concern for the normative function of
logical laws.⁴ He writes, “what is crucial to the treatment of the science of logic is the

⁴ There are differing views on whether Frege actually holds that the laws of logic are
normative. Follesdal 1958, Kitcher 1979, and Kusch 1989 argue that Frege treats
them as normative. For conflicting views see Pietersma 1967, Philipse 1989,
conception of logical laws and this in turn is connected with how the word ‘true’ is understood... The ambiguity of the word 'law' is fatal here. In one sense it states what is, in the other it prescribes what should be. Only in the latter sense can the logical laws be called laws of thought, in laying down how one should think” (BLA, 202). The laws of logic have a normative dimension in the sense that they prescribe how one should think in order to reason correctly. There is an ambiguity in the use of the language of laws that threatens to obscure this dimension of logic. For the term ‘law’ is also used to describe the physical regularities of nature. The additional fact that thinking is also a mental activity (the kind of thing of which psychologism is the proper science, of course) only aggravates this confusion:

The expression 'law of thought' tempts us into viewing these laws as governing thinking in the same way as the laws of nature govern events in the external world. They can then be nothing other than psychological laws, since thinking is a mental process. And if logic were concerned with these psychological laws, then it would be a part of psychology (BLA, 202).

As before, Frege focuses on the threat that psychologism poses to the objectivity of our knowledge. In these prefatory remarks, we find this cashed out in terms of a distinction made between being true and being held as true. Speaking of Erdmann’s psychologism, Frege writes, “so in the end truth is reduced to the holding as true of individuals. In response I can only say: being true is quite different from being held as true, whether, by one, or by many, or by all, and is in no way to be reduced to it... I

Dummett 1981, and Kusch 1995 (see p. 280). For passages in Frege’s own work that suggest that he does not see logical laws as normative see the opening paragraphs of “Thought”. Frege’s position in “Thought” seems to be that logic pertains to what is rather than what ought to be. His position there suggests something like Husserl’s view that any normative function of logic is founded on logic as a theoretical science.
understand by logical laws not psychological laws of *holding as true* but laws of *being true*" (BLA, 202). The same language turns up in the famous passage about ‘logical aliens’. Here, Frege considers the suggestion that the laws of logic might be relative to our human constitution: “But what if beings were even found whose laws of thought directly contradicted our own and therefore frequently led to contrary results in practice as well? The psychological logician could only simply acknowledge this and say: those laws are valid for them, these for us. I would say: here we have a hitherto unknown kind of madness. Anyone who understands logical laws as prescribing how one should think, as laws of *being true*... will ask: who is right?” (BLA, 203). Here again, Frege leans on the distinction between the idea of laws as regularities in the way we actually think and the laws of logic as norms for correct thinking. Whereas the psychologist must admit that these beings have as much claim to correct thinking as we do, one who appreciates the true nature of the laws of logic will thereby appreciate the importance or relevance of asking the question ‘who is right?’ “This impossibility of our rejecting the law does not prevent us from supposing that there are beings who do reject it; but it does prevent us from supposing that these beings are right in doing so” (BLA, 204). Thus, for Frege, the mere encounter with those who disagree is not enough to bring doubt upon the nature of logical laws as universal, for they are not descriptive but prescriptive.

This defense of the objectivity of knowledge, in terms of the distinction between *being true* and *being held as true*, goes hand in hand with a third form Frege’s concerns take in these passages of the *Grundgesetze*: that of the eternal
nature of this knowledge. If knowledge is objective then its objects must exist prior
to any mental process of thinking: “if we want to emerge from the subjective at all,
then we must conceive of knowledge as an activity that does not create what is
known but grasps what already exists” (BLA, 206). We can make sense of the
division between psychology, as the science of thought, and logic, as the science of
knowledge, because thinking is not the creation of knowledge but merely the
grasping of it. Knowledge itself exists as a separate domain: “being true itself is
timeless and placeless” (BLA, 203). In all of these passages, he stresses the
independence of knowledge from thinking. This is ultimately, for Frege, the mistake
made in the “intrusion” of psychology into the field of logic: “For me truth is
something objective and independent of those who judge; for psychological
logicians it is not” (BLA, 204).

A final important resource for Frege’s views of the problems of psychologism
is his famous review of Husserl’s first book, Philosophy of Arithmetic, which has
often been credited entirely with converting Husserl from his early psychologistic
views to his anti-psychologistic position in the Logical Investigations. I will return to
the question of Frege’s influence on Husserl in a discussion of the development of
Husserl’s views in the next section. But even if Frege’s review doesn’t offer the most
faithful representation of Husserl’s views, it is nevertheless useful as a
representation of Frege’s own position on this purported psychologism.⁵

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⁵ For an analysis of Frege’s review specifically in terms of its criticism of Husserl’s
psychologistic tendencies, see Mohanty, 1982, chapter 2, section 1.
In the review, Frege offers a reconstruction of Husserl’s position as well as a general characterization of this “mode of consideration” Husserl employs. What Husserl offers in his clarification of the concept of number, Frege insists, is “a naïve conception of number with a scientific justification” (RH, 323). He explains that he considers it naïve because it doesn’t treat number statements as assertions about concepts or the extension of concepts (that is, in the terms of Frege’s own definition of number), “for upon the slightest reflection about number, one is led with a certain necessity to such conceptions” (RH, 323). By Frege’s lights, Husserl’s approach is only slightly more advanced than the most naïve of conceptions of number (i.e. empiricistic accounts of number as properties of groups of things) since it “cleanses” objects of their particularities “in the psychological washtub,” a task for which the popular mixture of psychology and logic “provides good suds” (RH, 323). Excusing the awkward metaphor, Frege’s complaint is that with this approach that combines psychology and logic, “everything becomes presentation” (RH, 324). This includes, according to Frege, the references of words, objects, concepts, and even senses.

In particular, Frege suggests that Husserl’s route to the concept of number by means of abstracting from particularities confuses concept and presentation since number is treated as a feature of the act that reflects upon the ‘new presentations’ that were the products of abstraction. He writes, “hereby the difference between presentation and concept, between presenting and thinking is blurred. Everything is shunted off into the subjective. But it is precisely because the boundary between the subjective and the objective is blurred, that conversely the subjective also acquires
the appearance of the objective” (RH, 324-325). The result of confusing presentation and concept is the mingling of the subjective and objective, both in that the objective loses its objectivity and the subjective passes for objective. “In combining under the word ‘presentation’ both what is subjective and what is objective, one blurs the boundary between the two in such a way that now a presentation in the proper sense of the word is treated like something objective, and now something objective is treated like a presentation” (RH, 325). For Frege, a presentation is always something subjective and private. It is not the kind of thing that can be separated from the individual person and treated as something publicly available for analysis. To proceed as if this is possible is, on his view, to give something that is subjective the appearance of being objective.

One consequence that Frege draws from this assimilation of concepts into that of ‘presentation’ is that Husserl fails to have any account of identity: “Psychological logicians lack all understanding of sameness, just as they lack understanding of definitions” (RH, 327). According to Frege, this is because any account that takes words to designate presentations cannot explain simple equalities like “A is the same as B.” Here again it becomes impossible to account for the essential identity of a concept. He warns, “the components of a thought... must be distinguished from the presentations which in the soul accompany the grasping of a thought” (RH, 325). Frege’s criticism of Husserl’s work reveals that his concern here, as elsewhere, is mainly with preserving the objectivity that he thinks belongs to concepts and senses. His criticism focuses on what he sees as the failure to make
the proper distinctions between concept, object, sense, and presentation. If presentation is allowed to intrude upon the others, or is regarded as something other than totally subjective and private, it introduces subjectivity into each of the others and threatens their objective nature.

From the analysis of these passages emerges a broad picture of what Frege believes to be the principal failings of logical psychologism. First and foremost among Frege’s concerns is the preservation of the objectivity of mathematics and logic and the independence of truths from the judgment of believers. At every turn, he warns us of the danger of slipping into subjectivity. Psychological genetic accounts of concepts and logical laws fail to account for the independence of truths from cognition. For this reason these approaches need to be distinguished from the justificatory. It is only natural that these are his focus since his project of providing a new foundation for arithmetic by reducing its principles to those of logic depends upon this conception of the nature of logic, truth, and knowledge. That this is where his concern with psychologism lies also makes sense of the tendency of his remarks to focus on psychologically based methods of investigation such as historical or genealogical accounts of concepts. Psychologism, as Frege is concerned with it, presents itself as a threat in the form of alternative ways of grounding mathematics and logic. And this undermines the rigorous justification he is after. One of the burdens this presents to Frege is that of justifying why a project such his own is necessary in the first place. A related concern is the status of truths as eternal and independent of the thinking of any particular individuals. It is this that motivates his
distinctions between being true and being held as true, as well as the distinction between knowledge as an activity and knowledge as what is known. All of this drives his deep emphasis on the importance of the distinctions (as he makes them) between concept, object, sense, and presentation.

Beyond these passages of explicit attention to the subject, the other ways in which Frege’s anti-psychologism evidences itself is in his views on the nature of mathematical and logical objects. These views have already been preliminarily characterized by what we have seen of his arguments thus far. Logical objects are timeless, non-physical, non-mental objects that exhibit an essential identity across various psychological acts and thereby constitute the conceptual content of propositions. In particular, this is evident in the status that he accords to ‘conceptual contents’ in the Begriffsschrift, to mathematical objects and numbers in Foundations of Arithmetic, to senses in ‘On Sense and Reference’, and to thoughts as the denizens of the so-called ‘third realm’ in the essay ‘Thoughts.’

I will return to these elements of Frege’s philosophy in Part II in order to compare how the anti-psychologistic positions of Frege and Husserl respectively fare against common problems of anti-psychologistic views. First, I turn to the development of Husserl’s philosophy and an examination of his anti-psychologism.

**The Development of Husserl’s Philosophy**

Like Frege, Husserl’s initial studies were in mathematics and his interest in the foundations of logic grew out of his work in the foundations of mathematics. As a
student of Weierstrass, he too became interested in the project of reforming mathematics into a purely rational procedure by eliminating the non-rational intuitive components of mathematical analysis. However, his approach to this reformation of mathematics differs from Frege’s in many respects. Whereas anti-psychologism is consistently present in Frege’s work, it only emerges in response to particular developments in Husserl’s philosophy. Husserl’s early works accepted a role for psychology in producing a new foundation for arithmetic.

Husserl planned to provide a new foundation for arithmetic by re-examining the fundamental concepts of mathematics and by attempting to rigorously derive mathematical analysis from these newly clarified concepts. His first published work was an essay in 1887 called “On the Concept of Number: Psychological Analyses” (CN) in which he provided a ‘clarification’ or analysis of the concept of number. At the time, Husserl believed that all of arithmetic could be derived from or grounded in the concept of number. The clarification of the concept of number was the first step in the derivation of arithmetic and in the reform of mathematical analysis. Thus, in the introduction to “On the Concept of Number," he wrote that, “a rigorous and thoroughgoing development of higher analysis... would have to emanate from elementary arithmetic alone, in which analysis is grounded. But this elementary arithmetic has, as a matter of fact, its sole foundation in the concept of number... Therefore, it is with the analysis of the concept of number that any philosophy of mathematics must begin” (CN, 95).
Exactly what kind of undertaking is the clarification of the concept of number? The first important point is that Husserl’s *clarification* of the concept of number should be distinguished from Frege’s desire for a *definition* of number. In fact, Husserl didn’t think that a definition of number was possible, since the concept of number was taken as fundamental (Willard 1984, 66). Husserl’s method for the clarification of a concept was an investigation into the *origins* of the concept in order to elucidate the contents or parts of the concept. According to Husserl, the clarification of a concept cannot be achieved by merely thinking directly of the concept itself. Rather, one must look at how one came to have the concept. This involves an examination of the experiences from which the concept arises. As Husserl conceived of it, the investigation of the origins of a concept was a psychological task. Examination of the psychological origins of any concept amounts to figuring out what mental states and acts produce the concept. In other words, one attends to the structure of the experiences out of which the concept arises in order to gain insights into the structure of the concept itself. Note, though, that this does not mean that Husserl held the position that numbers were psychological entities. We will return to the question of Husserl’s ‘psychologism’ in these early views later.

Now, in the case of number concepts, they tend to arise from the experience of sets or groups of objects. But just what kind of experience is this? To be aware of each of many things sitting before one on the table is not the same as being aware of them as a set or group of things. So in clarifying the concept of number one has to explain how the awareness of each of many individual things is transformed into
awareness of a group of many things, that is, of those things as a group. One has to account for awareness of a totality of things as a whole.

Husserl’s account of this transformation is that a totality is grasped as a new intuitively present object as a result of a second order act of thought (viz. the act of collective combination) that depends upon prior acts of noticing each individual object in succession. Thus, there are two logical components of the concept of number: the act of collective combination and the act of grasping objects as mere ‘something’s (abstracting from all of the objects particular content).

Much of the work performed in “On the Concept of Number” was eventually incorporated into Husserl’s first book, Philosophy of Arithmetic: Psychological and Logical Investigations (PA), published in 1891. In Philosophy of Arithmetic, Husserl retained the methodological principle of clarifying a concept by investigating the concept’s psychological origin and offered almost exactly the same account of the concept of number that was presented in his earlier essay. But Philosophy of Arithmetic had an additional aim. As Dallas Willard points out, a concept of number is not yet a theory of arithmetic: the first tells us what a number is, but a theory of arithmetic must tell us how it is that we know what we do about numbers (Willard, 1984, 87). The book is divided into two parts, the first of which, entitled “The Authentic Concepts of Multiplicity, Unity, and Whole Number,” corresponds to Husserl’s work in “On the Concept of Number” and consists in an analysis of the fundamental concepts of arithmetic. The concept of number is the central one here, with multiplicity (or totality) and unity being in many ways synonymous with the
concept of number. It treats of these concepts as ‘authentic representations,’ which is to say, as concepts that are intuitively apprehended, and it constitutes the psychological part of the study. Part II, under the title “The Symbolic Number Concepts and the Logical Sources of Cardinal Arithmetic,” attempts to give an account of how arithmetical knowledge works by grounding its methods in a theory of ‘symbolic’ or ‘inauthentic’ representations.

In dividing the work into parts focused on authentic and symbolic representations, Husserl draws on a Brentanian distinction. In the preceding discussion of “On the Concept of Number” we saw that the concept of number had its origins in the intuitive presentations of groups of objects. These are what Husserl calls “authentic representations.” But this account of the origins of the concept of number only explains the concepts of numbers that can be intuitively grasped. Now, our intuitive capacities are quite limited. In fact, according to Husserl, it is only because of this limitation of our cognitive abilities that arithmetic even exists as a necessary endeavor. Without this limitation, arithmetic itself would be superfluous since the numbers and the totality of relations between them would be immediately evident. Without this limitation, Husserl’s study of the origins of the concept of number would be the full story. But given that we cannot intuitively apprehend more than just a few small numbers authentically, our knowledge of numbers must be supplemented by arithmetic. For Husserl, arithmetic just is precisely that activity of revealing, or coming to know, numbers and the relations between the numbers through calculation. This requires that a theory of arithmetic must also be given.
Thus, the second part of PA is devoted to answering the question of how we can have arithmetical knowledge in spite of the fact that it is not directly intuited.

Now, Husserl's answer to this question lies in a theory of symbolic representations whereby the concepts of numbers are given to us indirectly. A symbolic representation is a sign that stands in a unique relation to a concept. Instead of grasping the concept directly, we grasp it through our understanding or apprehension of the corresponding sign in its structural relation to the full system of signs. The substitution of symbolic representations for authentic ones works by means of a structural analogy between the (sense-perceptible) symbols and the concepts themselves. In this way, symbolic representations serve as surrogates for authentic concepts.

So, for example, in the specific case of arithmetic, the concepts of numbers beyond the first few integers exceed our capacity for direct intuition. For knowledge of those numbers, we must use symbolic representations, i.e. numerals, as signs of the concepts of numbers. This works because each numeral stands in a unique relation to the concept of a number and because a numeral immediately reflects its position in the whole system of numerals, it “wears [this] on its face” as Willard says (Willard 1984, 101). We can therefore indirectly apprehend the concept of number by directly grasping the position of the surrogate symbolic representation. Such were the means by which Husserl sought to give a theory of arithmetic.

However, a problem arises here, for there are expressions in arithmetic that do not wear their position in the system on their face. Now, the problem of
intuitively grasping the concepts of numbers repeats itself at the level of symbolic
representations. Now, it is the signs themselves that are not immediately graspsable.
Think, for example, of equations. Equations do pick out a single numeral and
therefore also a single number concept but what they pick out is not immediately
evident in its symbolic representation. What is needed for cases like these is
calculation. Calculation is what reduces these expressions to numerals. But Husserl
had conceived of calculation as arithmetical in nature. The problem, then, is that
Husserl has attempted to ground his conception of arithmetic in the concept of
number, but the concept of number must itself be grounded in calculation, which
Husserl had up to this point taken to be merely arithmetical in nature. Thus, if
Husserl’s project is to continue, he must modify his conception of calculation.
Calculation has to be understood as the purely formal derivation of some signs from
others in a rule-governed way. The result of Husserl’s project in *Philosophy of
Arithmetic* was the failure of symbolic representations to provide a sufficient theory
of arithmetic, to explain how arithmetic works.

Though Husserl promised a second volume of the *Philosophy of Arithmetic* in
his preface to the first volume, this discovery represented the failure of Husserl’s
attempt to derive arithmetic solely from the concept of number. No second volume
was ever published. It was this failure in the final chapters of *Philosophy of
Arithmetic* that later led him to pursue a theory of logic in *Logical Investigations*. As
Husserl would later say in the foreword to the first edition of the *Prolegomena of
Logical Investigations*, “The logical Investigations whose publication begins with
these Prolegomena, have arisen out of unavoidable problems which have constantly hindered, and finally interrupted, the progress of my efforts, spread over so many years, at achieving a philosophical clarification of pure mathematics.” Husserl describes how he was “plunged into peculiar difficulties” that “forced me into discussions of a very general sort, which lifted me above the narrow sphere of mathematics” (LI 1, 1). The central problem was his discovery that arithmetic “could be taken beyond the field of quantity, and this made me see that quantity did not at all belong to the most universal essence of the mathematical or the ‘formal’, or to the method of calculation which has its roots in this essence” (LI 1, 1).

Husserl had started from the assumption that calculation was something essentially arithmetical, which is to say quantitative, since arithmetic was thought to be founded solely on the concept of number. But by the end of Philosophy of Arithmetic Husserl was forced to relinquish this idea. In a short statement near the end of PA, Husserl acknowledges that the relationship between calculation and arithmetic was not as he had initially supposed: “The relationship of arithmetic and calculational technique has, with this new concept of calculation (the only one used from here on), certainly changed” (PA, 259). What he had discovered was that calculation was not to be explained by arithmetic; rather arithmetic was to be explained by calculation. In short, Husserl had arrived at a purely formal understanding of calculation such that it wasn’t to be seen as having any special relationship to any particular set of objects such as numbers. As a purely formal
activity, calculation no longer served a representational function but merely a mechanical one.

This had profound implications for Husserl's psychological method. Since calculation no longer served a representative function, it could no longer be explained by a theory of representations. Husserl's psychological method had failed to provide him with an account of arithmetic because, as Husserl discovered in PA, arithmetical calculation required a theoretical foundation in logic. Psychological researches were only capable of providing insight into the activity of thinking, not of providing an account of or theory of knowledge. Calculation essentially belonged not to arithmetic but to logic.

It also had profound implications for Husserl’s understanding of the nature of logic. Husserl’s initial view of logic was as the practical art or technology of correct thinking (this was present in “On the Concept of Number”). Logic was a general theory of the methods of the sciences. The task of logic was to create a procedure that assured the advancement of knowledge in the sciences, that is, the task of logic was to ensure logical calculation. He had set out to develop a “true philosophy of the calculus” (Willard 1984). By the end of Philosophy of Arithmetic, Husserl came to see that logic must do more. It must provide a theory of calculation. Husserl came to see that a logic of the symbolic methods of knowledge, a universal theory of deduction, was lacking. This ignited his interests in the foundations of logic, that is, in logic as the founding theoretical science of logic as a technology. Thus the reform of logic came about as a task for Husserl as a result of his discovery that arithmetical
calculation stood in need of a general theory of knowledge. Husserl felt that the logic of the time failed to provide what was needed. Thus, what was needed was to reform logic. This was the task Husserl would undertake in *Logical Investigations*.

Between the discoveries of *Philosophy of Arithmetic* and the reformatory project of *Logical Investigations*, Husserl published two essays: a review of Schroder’s *Lectures on the Algebra of Logic*, which Husserl was working on while finishing the first (and only published) volume of PA and which was published in the same year, and an essay entitled “Psychological Studies in the Elements of Logic” published in 1894. Both essays reflect the movement of Husserl's thought more and more towards the project of *Logical Investigations*. In his review of Schroder’s *Lectures on the Algebra of Logic*, we can see that Husserl’s thoughts about the nature of logic have changed. Recall that at the start of *Philosophy of Arithmetic*, Husserl held an arithmetical conception of calculation, that is, he held a view of calculation as a mechanical technique based upon arithmetic. It was the failure of this to be true that represented both the failure of his project and his major discovery in that work. By the time of his review of Schroder’s work, however, Husserl makes a distinction between a logical calculus and a logic of calculus. Schroder develops a logical calculus but fails to develop “a logic of calculus,” that is, he fails to develop a theory of that calculus (Willard 1980). What this complaint represents is an appearance of Husserl’s newfound view that a logic of calculus is to be desired.

As for “Psychological Studies,” Husserl would later refer to it as his “first sketch” of the *Logical Investigations* (Willard 1984, 6). The essay contained two
studies: one on the relationship between the abstract and concrete, and another on the relationship between the intuition of an object and the representation of it. Dallas Willard reads the “Psychological Studies” as offering a generalization of the problem encountered in *Philosophy of Arithmetic* (Willard, 1984). There, Husserl had run up against the problem of how mathematical knowledge was possible through the sense-perceptible signs that only symbolically represented concepts that were not themselves intuitively present to the mathematician. In “Psychological Studies”, Willard tells us, Husserl came to recognize this same structure in knowledge of any kind (Willard 1984). How is knowledge possible through entities that are not themselves intuitively present to the knower? Notice that it is not the knowledge itself that is in question here; rather Husserl is puzzled by our lack of an account of that knowledge. Just as in Husserl’s previous works, the kind of investigation that “Psychological Studies” undertook was the clarification or analysis (hence their “psychological” nature). But they are “studies in the Elements of Logic” because Husserl had come to see the provision of answers to these questions as a part of the project of developing his general ‘theory of knowledge.’

The first volume of *Logical Investigations* came out in 1900 and consisted entirely of a *Prolegomena* to the six individual ‘logical investigations’ published a year later in two parts. The *Prolegomena* had two aims. It introduced the idea of a pure logic as the aim of *Logical Investigations* and presented arguments against the idea that the fundamental essence of logic was faithfully represented by the conception of logic as an art or technology of correct thought with a normative
function. While allowing that this practical conception of logic had a function, Husserl argued that it presupposed a foundation on the idea of pure logic because all normative or practical disciplines must be based on theoretical ones. The second aim of the work, then, was to show that the theoretical discipline that served as the foundation of the normative conception of logic was not psychology but the autonomous and theoretical science of pure logic. Most of the Prolegomena is given over to this task of showing “the untenability of any form of empiricistic or psychologistic logic, whatever its character,” the result of which is that “the idea of ‘pure logic’, a theoretical science independent of everything empirical, and hence also of psychology, a science [i.e. ‘pure logic’] which first renders possible a technology of scientific knowledge which logic in the theoreticopractical sense is, must be admitted as sound, and the indispensible task of its independent construction must be tackled seriously” (LI 1, 134). Together these two tasks of the Prolegomena constitute an argument for the need and possibility of a pure logic. The final chapter attempts to clarify the idea of pure logic and enumerates the “tasks of pure logic” which are subsequently undertaken in six logical investigations that make up Volume II.

The Prolegomena represented Husserl’s first explicit consideration of “the disputed question as to the relation between psychology and logic” (LI 1, 40) as well as his first expression of anti-psychologistic sentiments. There has been much speculation about the sources of this new focus in Husserl’s thought. Husserl’s own
characterization of this development in his thought is given in the foreword to the
first edition of the *Prolegomena*:

I began work on the prevailing assumption that psychology was the science from
which logic in general and the logic of the deductive sciences, had to hope for
philosophical clarification. For this reason psychological researches occupy a very
large place in the first (the only published) volume of my Philosophy of Arithmetic.
There were, however, connections in which such a psychological foundation never
came to satisfy me. Where one was concerned with questions as the origin of
mathematical presentations, or with the elaboration of those practical methods
which are indeed psychologically determined, psychological analyses seemed to me
to promote clearness and instruction. But once one had passed from the
psychological connections of thinking, to the logical unity of the thought-content
(the unity of theory), no true continuity and unity could be established. I became
more and more disquieted by doubts of principle, as to how to reconcile the
objectivity of mathematics, and of all science in general, with a psychological
foundation for logic (LI 1, 2).

Here, Husserl describes his initial belief that philosophical clarification of the kind
that specifically interested him in *Philosophy of Arithmetic* was the domain of
psychology. This was, we know from the preceding discussion, how he conceived of
the task of analyzing the concept of number. One could elicit the parts of a concept
through examination of the mental states and acts that produce the concept. But
Husserl’s description here of his early thought seemingly accedes even more to the
purview of psychology. For he says that he believed that the clarification of logic
belonged to the domain of psychology. Given the inclusion of these remarks at the
beginning of a work whose aim is to refute psychologism as a theory of logic, it is
tempting to read them as admitting, first, that Husserl initially held the view that the
foundations of logic lay in psychology, and second, that Husserl’s own early views
are the target of the refutations of psychologism that follow. Many scholars have
interpreted the remarks in this way. But it is important to refer here to the change in
Husserl’s understanding of the nature of logic. The idea of pure logic as the foundation of logic as a technology was making its first appearance here in LI. Given what we now know about Husserl’s early views of logic, the claim that his early views appealed to psychological studies for insight about “logic in general and the logic of the deductive sciences” may merely indicate that Husserl believed that logic as it was initially conceived, i.e. logic as a practical technology of correct thinking, could benefit from psychological clarification. This is hardly the claim that logic as a purely theoretical science is founded in psychology. Thus, if Husserl’s initial conception of logic can be understood as psychologistic this is not because he believed that logic belonged to the domain of psychology but because in his view logic had been narrowly conceived as a mere technical device. And this was because his consideration of logic was a product of his initial mathematic interests. My point here is not to suggest that Husserl’s early work is misread if it is understood as psychologistic, but to articulate precisely what that psychologism consists in.

The passage continues by noting that psychological investigations did in fact seem useful to the task of revealing the origins of mathematical presentations and certain ‘practical methods.’ At the time of the Philosophy of Arithmetic, Husserl had not yet appreciated the need for a foundational logic, as the science of science. He conceived of his task as a justification of mathematical analysis by means of the examination of its fundamental concepts and the elucidation of ‘practical methods’ of producing from this the rest of arithmetic in full. The problem Husserl encountered was simply that these practical methods turned out to stand in need of
theoretical foundations for which psychology was unable to provide any insight. Thus, Husserl says that once one had passed from (properly) “psychological connections of thinking” to the realm of the logical unity of thought something beyond psychological investigations was required. His recognition of this arose at the same time that he was discovering that logic as a mere technology stood in need of a pure theory of science.

Dallas Willard has argued convincingly that Husserl’s early views are not the target of his critique of psychologism in the Prolegomena (Willard 1980). In whatever sense Husserl’s early work can indeed be considered psychologistic, what manifests there is not the kind of psychologism that is under attack in the Prolegomena. For Husserl’s early work does not contain the particular views that are under attack in the many arguments Husserl produces there. Never did Husserl think that logical principles were inductive laws of mental acts, for example, or that truth was relative. Nor did he think of numbers as mental objects. Moreover, the distinction between the psychological and logical is built into the very structure of Philosophy of Arithmetic as evidenced by its subtitle, “Psychological and Logical Investigations.”

If in fact Husserl’s own early views are not the target of the refutations of psychologism that follow, then we have yet to answer the question of what motivates Husserl’s anti-psychologistic arguments of the Prolegomena. One further suggestion that must be addressed is the claim that Husserl’s anti-psychologism is a
response to a review of Philosophy of Arithmetic that Frege wrote in 1894.\textsuperscript{6} This position also incorporates the idea that Husserl's early views are those that come under attack in the Prolegomena, or it at least supposes that the views expressed in the Prolegomena come about because of a turn away from those early views. That there seems to be a mismatch between the early views and the succeeding arguments against psychologism only makes the centrality of Frege's influence less plausible. Furthermore, Willard and Mohanty provide additional convincing reasons for rejecting this idea. Without rehearsing those arguments here, I will simply remark that the strongest arguments they offer are built on textual evidence that the changes in Husserl's thought can be dated to various moments in time preceding the review.\textsuperscript{7} The 1891 review of Schroder, for example, already contains the idea of pure logic as defined by ideal objective meanings. In the face of the comparatively paltry evidence in support of Frege's influence, this makes it unlikely that his review was the source of Husserl's turn from psychologism in the Prolegomena.\textsuperscript{8}


\textsuperscript{7} Follesdal 1958 also asks the question, at what point between 1891 and 1896 does Husserl change his views? According to Follesdal, Husserl's papers up to 1894 still exhibit an adherence or appeal to psychology for the clarification of the foundations of logic. Frege's review of PA appears in 1894 and Follesdal concludes or conjectures that the review is the impetus for Husserl's change of mind.

\textsuperscript{8} Kusch, for example, writes, "almost all of Husserl's key arguments against psychologism can already be found in Frege's texts. The amount of overlap makes it likely that Husserl's criticism of psychologism was strongly influenced by Frege, indeed that Husserl simply took his arguments from Frege (Follesdal 1958, Mortan 1961)" (Kusch 1995, 60). Many quote Husserl's discussion in the preface to the Prolegomena as evidence of his acknowledgement that Frege is responsible. For arguments against this view see Willard 1980.
So what is the purpose of the anti-psychologism of the Prolegomena? The result of Philosophy of Arithmetic was that Husserl became aware that the concept of quantity was not fundamental to the method of arithmetic in its most general form. Rather it was based upon a formal understanding of calculus. Husserl had come to feel that the logic that was available couldn’t account for the rational structure of deduction or the unity of the science. He formed the conviction that a logic as the theory of knowledge, as the science of science, was needed and the Prolegomena is an effort to clear a path toward that work. It was part of the project of showing that the current logic didn’t suffice and that a pure logic was needed. Thus, just as the sense in which those earlier views were “psychologistic” is appreciated by understanding the role Husserl accorded to psychology as the source of philosophical clarification of scientific knowledge, the sense in which he left off his earlier ‘psychologism’ is appreciated by understanding his abandonment of these ambitions for psychology.

Throughout the rest of Husserl’s career, his work is characterized by this interest in the foundation of the sciences. Although there is some debate over the question of whether certain psychologistic tendencies manage to creep back into Husserl’s view in the later works, I won’t spend any further time explicating the development of Husserl’s views past the publication of Logical Investigations in 1900/1901. My focus here has been to characterize the development of Husserl’s interest in taking the particular anti-psychologistic position that he does in Logical Investigations and my claim has been that this position developed out of the
particular nature of the problems he encountered with his early project to reform mathematics. With that, I will now turn to a more detailed look at Husserl’s arguments against anti-psychologism.

**Husserl’s Anti-psychologism**

I will here mainly focus here on the *Prolegomena* to the *Logical Investigations* as Husserl’s most extended and explicit treatment of the issue of logical psychologism. I will consider here only a representative sample of the most salient of the many arguments offered there since the aim of this examination is to glean from them an idea of what, in particular, Husserl finds objectionable about the position. ⁹

The majority of Husserl’s arguments adopt the argumentative strategy of assuming the correctness of psychologism, observing the consequences of this assumption, and refuting this assumption by rejecting the consequences as false. Husserl commences the discussion, however, by considering a certain set of counterarguments to the view that he finds unsuccessful. His analysis reveals something important about what he thinks is the right way to approach and criticize psychologism.

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⁹ Hanna 2008 discerns 3 main arguments in the *Prolegomena* corresponding to the “three cardinal sins” of logical psychologism, while Kusch 1995 counts over 10 claims that represent Husserl’s “case” against psychologism. There is no indication that this should be understood as an exhaustive list and Kusch himself references many more than 10 arguments. For general analyses of Husserl’s arguments against psychologism see Kusch 1995, Hanna 1993 and 2008, Mohanty 1982 and 1997, Farber 1943.
What makes psychologism plausible, Husserl notes, is that the objects of logic as a practical and normative technology, the objects of regulation, are mental activities. Now a common form of opposition to this is to argue that the separation of logic and psychology can be based precisely on this normative quality of logic. Variously, the anti-psychologists argue that while psychology concerns the way thinking is, logic prescribes the way thinking should be. To this the psychologists can simply answer: logic as the study of how thinking should be is merely a special case of how thinking actually is in fact. Anti-psychologists also argue that even if the objects of logic are the same as the objects of psychology, the task each undertakes with regard to them is different. While the task of psychology is to explore the causal laws that govern thinking, logic is never concerned with causal relations but with truth. It is the science of how thinking ought to proceed in order to produce true judgments. The psychologists merely respond that though the tasks of each are different, logic nevertheless is not entirely removed from the causal laws of psychology and, moreover, the fact that psychology doesn’t deal with the normative aspects shows nothing—the relationship between logic and psychology is part to whole. Finally, anti-psychologists will argue that by accepting logic as a science, even the psychologistic logician accepts the validity of fundamental logical rules. It would be circular to try to found logic in psychology. The response from psychologistic logicians is that this would prove the impossibility of logic, since logic would commit the same circle. Now, this is occasion for Husserl to point out an equivocation in the term ‘presupposing’ and the distinction between arguing
according to logical rules, and arguing from them. A circle only occurs if psychology presupposes the rules of logic in the sense of arguing from them as premises. The conclusion Husserl draws is that a middle path must be taken between these two positions. Psychology does in some way participate in the foundation of logic but there may yet be another science that participates in it as well.

With this initial caveat, Husserl first observes the consequences of the psychologistic position. The great number of consequences he considers can be divided into the following categories: empiricistic consequences, consequences of the psychological interpretations of the fundamental logical principles (such as the law of contradiction), consequences of the psychological interpretations of less fundamental principles (such as the laws of syllogistic inferences), and the ultimate consequence that psychologism leads to skeptical relativism. I will analyze these consequences next. Husserl's final section examines the psychologistic arguments themselves in order to reveal that they are based on the so-called 'psychologistic prejudices.'

In considering the first kind of consequence of psychologism—empiricistic consequences—Husserl provides a brief and, he thinks, universally recognizable general description of psychology: psychology is a factual and empirical science that has so far lacked exact laws. Its so-called 'laws' are in fact merely generalizations from experience. Equipped with this picture of psychology, he produces the following three arguments:
1. First, since psychological laws are vague, it would have to be the case that the laws of logic are also vague. Only vague rules can be based on vague theoretical foundations. But, Husserl points out, the laws of logic are of “absolute exactness”, therefore they are not psychological (Li 1, 46).

2. Even if it is denied that psychological laws are vague, natural laws (i.e. psychological laws) cannot be known a priori. They are established by experience, which can only establish the relative probability of the laws. If logical laws were natural psychological laws they too would be merely probabilistic in this way. Nothing could be more obvious, according to Husserl, than that logical laws are a priori and established by apodictic evidence.

3. Finally, if logical laws were normative correlates of factual psychological laws, then they would also have to be psychological in content. That is, they would be laws for mental states and therefore also imply the existence of these mental states. Logical laws do not, however, imply any matters of fact.

Each of these arguments draws out a fundamental disagreement between the character of logic as we know it and the image of what logic would have to be if it were based in psychology. If grounded in psychology, the laws of logic would have to be vague, a posteriori, and probabilistic. Moreover, they would have to entail certain matters of fact regarding mental states. But logical laws do not entail any matters of fact.

Husserl considers a possible objection to these arguments which points out that not every natural law, or law that applies to facts has an empirical and inductive
basis. Logical laws might be empirical but not inductive and therefore not merely probable. They might be, for example, abstractions from psychological experience. Husserl admits that our knowledge (insofar as this means the mental acts of knowing) is based in experience, but he makes the distinction between the psychological presuppositions of the *knowledge* of a law and the logical presuppositions of the law itself (LI 1, 54). Just because a law has its psychological origin in experience (and is in this sense dependent on psychology) does not mean that psychology functions as the logical or justificatory grounds of the law. “All knowledge begins with experience, but it does not therefore ‘arise’ with experience” (LI 1, 54).

The second kind of consequence Husserl considers is that of the consequences of psychological interpretations of the fundamental logical principles. He takes Mill’s interpretation of the law of contradiction as his first representative. Mill categorizes the law as a generalization from experience and in particular, from such facts as that light and darkness exclude one another. First, Husserl points out that these facts of exclusion are ‘not contradictory propositions at all’ (LI 1, 56). It is not even clear how these facts can relate to the law of non-contradiction. Mill’s mistake is that he confuses the impossibility of two contradictory propositions being true with the ‘real incompatibility’ of two opposed acts of judgment, that is, with the impossibility of believing two incompatible things to be true. This is because Mill believes that only acts are the bearers of truth and falsity. Many problems arise from this confusion, just one of which is that if the incompatibility of
acts is what is responsible for the law of non-contradiction, then Mill’s analysis of this is, at best, incomplete. It would require an explanation of the instances of false reasoning or madness, in which two incompatible beliefs are in fact held. Here, Husserl identifies a basic error of empiricism: it destroys the possibility of the rational justification of mediate knowledge and so destroys its own possibility as a scientifically proven theory. Husserl explains: given that proof relies upon principles that govern its own procedure, the justification of proof involves an appeal to those rules. Now, if further justification of those rules were required, then we would find ourselves rapidly approaching either a circle (if the rules are the same as the first set) or a regress (if they are different). What this means, Husserl asserts, is that the demand for justification only makes sense if we recognize that there are certain fundamental and immediately evident principles that all justification ends in. Husserl’s claim is that empiricism, since it fails to recognize these fundamental principles, has no recourse for justification of any kind.

It is interesting to consider this argument alongside Frege’s reasons for thinking that psychologism could not be refuted. Though both cases involve the recognition of the necessity of the psychologist’s accepting fundamental logical principles, at some point, Husserl counts this as an argument against the psychologist’s denial of the autonomy of logic, where Frege simply expects that they will have to assent. For Frege, if the most fundamental logic principles fail to garner assent, there is nothing more to which one can appeal.
The final form of consequences of psychologistic views that Husserl addresses are those that follow from the interpretations of syllogistic inferences. Empiricistic doctrines are less often applied to laws of the syllogism since they are reducible to the fundamental logical principles. Husserl mainly argues that the same objections that apply to the psychologistic interpretations of the fundamental principles apply here. These interpretations inherit them from the others: “here as elsewhere [psychologism] lacks the capacity to make sense of the claim made by logical truths to objective validity, and therewith also their functioning as absolute norms of correct and false judgment” (LI 1, 71). Thus, both here and in the previous discussion of the consequences of psychologism, Husserl’s main objection is that psychologism destroys the possibility of the rational justification of mediate knowledge and thereby destroys its own possibility as a scientific theory.

“The worst objection that can be made to a theory,” writes Husserl, “and particularly to a theory of logic, is that it goes against the self-evident conditions for the possibility of a theory in general” (LI 1, 70). Such is the general objection that can be made to psychologism on the basis of the fact that it leads to relativism. Husserl distinguishes two kinds of relativism: individual skepticism and species relativism. He refers to individual relativism also as ‘Protagorean relativism,’ since it is accurately captured by the Protagorean formulation ‘man is the measure of all things.’ This is the idea that truth is relative to the subject, to each individual person, and that what is true for one may not be true for another. Husserl’s argument against this form of relativism is brief: “Refutation presupposes the leverage of
certain self-evident, universally valid convictions. Such are those trivial insights on which every skepticism must come to grief, insights which show up skeptical doctrines as in the strictest, most genuine sense nonsensical” (LI 1, 78). Individual relativism or skepticism, in order to produce any argument or theory of its own, must invoke and make use of the principles it means to deny. Individual relativism denies the existence or fulfillment of the conditions of the possibility of any theory and so denies itself the possibility of producing one.

One interesting thing about Husserl’s comments in this section is that he articulates skepticism as such an obviously nonsensical position that almost no one has held it in modern times. But he qualifies this by admitting that it is obvious “only for one who recognizes the objectivity of all that pertains to logic” (LI 1, 78). This may itself not be much of qualification but what makes it interesting for us here is that it echoes again, in some small way, Frege’s acknowledgment that in the face of a failure to recognize the source of the truth of logical laws there is only the appeal to other logical laws and “where that is not possible, logic can give no answer” (BLA, 204).

The second kind of relativism, species relativism, is the idea that truth is relative, not to an individual person, but to a species of thinking beings. So true judgments here are grounded in what is specific to the species. Where humans are the species considered, this is called anthropologism. The main problem with this relativism is that it involves a contradiction between the sense of its thesis and that
which is a part of any thesis as a thesis. Husserl dedicates 6 different arguments to demonstrating this in detail:

1. First, the position that what is true for a given species is what must count as true by that species’ laws of thought, is absurd and involves a misuse of words. This position claims that the same proposition is true for one species and false for another. But this means that the same content is both true and false. It is a part of the meaning of the words ‘true’ and ‘false’ that this cannot be so.

2. To the suggestion that the relativist means something different by truth, and regarding the possibility of a species that is not bound by the principle of contradiction and excluded middle, Husserl responds that this can mean either (a.) that the judgment of this species produces truths that do not conform to those principles, or (b.) that the judgment of this species is not in fact regulated by these principles. The latter is something that applies even to the judgment of human beings. The former again involves a misuse of the words ‘true’ and ‘false’.

3. What constitutes a species is a fact and therefore anything that derives from it must also be factual. If truth were based on constitution, it too would be factual and consequently temporally determinate. Although what is posited by a truth (viz. a fact) may be temporally determined, truth itself is eternal. Truths are not causes and effects. A true judgment might seem to be the effect of a judging subject, but this would be to confuse a judgment as an act, with a judgment as the content of the act (LI 1, 80).
4. If it were true that truth had its source in the constitution of the species, then where there was no species, i.e. no human existence, there would be no truth. It would then be true that there were no truth. This is absurd. If species relativism were true, then this would be false but not a contradiction.

5. According to species relativism, it could be true (on the basis of a constitution of a species) that such a constitution didn’t exist at all. But this would be absurd.

6. The relativity of truth entails the relativity of the experience of the existence of the world. The world corresponds to the system of truths. The object of truth only exists if the world does. Thus, the world could not exist if truth were made subjective.

The upshot of each of these arguments is that the species relativist always encounters an absurdity. Husserl insists that these theories, in deducing logical laws from facts, confuse the real and ideal senses of the words they use to make their arguments (LI 1, 83). The laws of logic are founded in the very sense of the concepts of truth, proposition, object, and law. When these laws are violated by a theory that derives logical laws from matters of fact, they do not merely render the theory false but inherently absurd. They are, as Husserl says, “self-cancelling” (LI 1, 82).

Finally, after this extensive analysis of the consequences of psychologism, Husserl turns to the arguments made in favor of psychologistic theories. His strategy is to show that the arguments of psychologism are based on what he calls “psychologistic prejudices” (LI 1, 101). There is not room here for a full discussion
of Husserl’s arguments that or how these prejudices inform and influence psychologistic views of logic. I merely offer them here as further evidence of what he thinks is mistaken about the position. There are three thoughts that he believes (mis)inform psychologistic views in general:

1. Prescriptions that are mental must have a mental basis.

2. The subject matter of logic is composed of psychical experiences and objects.

3. The conception of logic as a theory of evidence: Truth pertains to judgment, which is only recognized as true when inwardly evident. The laws of logic are psychological propositions that express the psychological conditions of this recognition of inward evidence.

Regarding the first prejudice, Husserl reiterates his view that the laws of logic are not themselves normative. There is an important distinction between laws that serve as norms and laws that have normativity as a part of their content. Logical laws are never of the latter type. Rather, logical laws are descriptive laws concerning only what is ideal. One consequence of the second prejudice that Husserl believes reveals its mistakenness, is that mathematics too would be a branch of psychology. If the subject matter of logic is psychological experiences and objects then the objects of mathematics would also be psychological experiences and objects. But this mistakes the nature of mathematics entirely. Mathematics, like logic, concerns only what is ideal. Finally, regarding the third prejudice, Husserl
contends that logical laws say absolutely nothing about inner evidence. The existence of these truths is prior to any cognition of them.

When we survey the arguments that Husserl makes against psychologism a few themes emerge. First, the arguments illuminate the essential features of logical laws, namely, their *a priori* exactness, and certainty, as well as their objectivity and universal applicability. Like Frege’s, Husserl’s arguments also emphasize the distinction between the psychological origins of knowledge and logical ground of knowledge. Husserl identifies a similar confusion between the bases of the *knowledge* of law and the bases of the laws themselves. Predominately, though, Husserl’s concern is with how psychologistic theories destroy justification, and in particular, the possibility of the rational justification of mediate knowledge. By failing to recognize the status of the most fundamental laws of logic, psychologistic theories fail to be able to account for “the claim made by logical truths to objective validity” and for how they function in our subjective thinking.

The focus of this analysis thus far has been on the arguments that Husserl makes to attempt to refute psychologism. These arguments provide a clear picture of what Husserl takes to be the problems of psychologism. But Husserl’s anti-psychologism also manifests in his own positive view of the nature of logical objects. He presents his views on the matter in the first investigation, in which he argues for the necessity of the ideality of meanings, as well as in the second investigation, where the view is generalized and the existence and validity of universal objects is argued for. In Investigation I, Husserl argues that only the ideality of meanings can
account for their essential identity across variances in the acts of meaning. What is merely psychologically constant in acts of meaning will not sufficiently separate out the essential logical content from the inessential psychological components. It is rather the meaning that constitutes the logical content of any act of meaning. As such meaning is not a real part of the act of meaning but an ideal unity. But the ideality of meanings is merely a particular case of the ideality of species. Investigation II undertakes the question of the particular status or nature of ideal objects. The relation between an ideal unity of meaning and a particular instance or act of meaning, is the same as that between the species Red and a red object of intuition. In each case, a universal is instantiated in the concrete instance. Since meaning as a species arises out of concrete presentations by means of abstraction, the problem of abstraction becomes central to Husserl’s argument in the second Investigation. I will return to this conception of the nature of logical objects in greater depth in part II of this paper. What is important here is to understand that both Investigations are attempts at clarification of the essential terms in preparation for the epistemological criticism and clarification of pure logic, that is, for the clarification of the possibility of knowledge in general. Husserl’s Platonism can thus be characterized as aimed at providing an answer to the question of how objective things are presented or apprehended in knowledge “and so end up by becoming subjective” (LI 1, 169). Husserl’s Platonism attempts to provide an explanation of the fact that an ideal unity such as a law or concept “enter[s] the flux of real mental states and become[s] an epistemic possession of the thinking person” (LI 1, 169).
**Comparison of Frege’s and Husserl’s Anti-Psychologisms**

The central concern motivating Frege’s anti-psychologism is the preservation of the objectivity of mathematical and logical truths and thereby the objectivity of knowledge. This is because his project is focused on securing the nature of justification for the purposes of mathematical reform. Thus, the criticisms he makes of logical psychologism tend to highlight the subjectivism that follows from various kinds of confusion regarding the distinctions between the origins of proposition and its justificatory basis, between logical content and ideas, or to put it another way, between a concept and its presentation, between logical laws and natural laws, between being true and being held as true, between the empirical and the logical. Confusion of the terms in each case results in every element of thought becoming subjective and this is Frege’s biggest concern.

The source of Husserl’s worries about logical psychologism is slightly different. What had emerged from the failure of his attempt to ground arithmetic solely in the concept of number was a new appreciation for the role of a formal calculus. Husserl realized that arithmetic had its foundations in logic and that what was needed was a theory of logic as a technology. By the time of the first volume of *Logical Investigations* the central task of a theory of logic was to provide an answer to that central question of epistemology, the question of how to relate the subjective acts of knowing to objective knowledge. With this grounding Husserl’s concerns, his critique of psychologism is less about the threat of subjectivism than is Frege’s, though as we have seen, Husserl does believe that the view has relativistic
consequences. For Husserl, the main question is what kind of theory can adequately account for the possibility of knowledge, given that we know that such knowledge must be characterized by timelessness, invariance, and objectivity. What matters for Husserl is the particular ways in which empiricistic and psychologistic theories fail to be able to account for this knowledge and fail, furthermore, to account for the possibility of rational justification of any kind. Hence Husserl’s claim that the worst objection that can be made to a theory, particularly of logic, “is that it goes against the self-evident conditions for the possibility of a theory in general” (LI 1, 70). Such is the fundamental error of logical psychologism on Husserl’s view.

These different conceptions of the problems posed by psychologism can help explain the difference in Frege and Husserl’s positive views about the nature of logic, especially the difference in the extent to which those views are developed regarding the nature of the connection between essentially subjective acts of knowing and the abstract or ideal objects of knowledge. When we turn to the accounts of the nature of logic that Frege and Husserl each provide in place of psychologistic ones, as we will in the next section, we find that Frege has little to say about the connection between subjective acts of knowing and the objects of knowledge. At the same time, Husserl takes the problem as one of the centerpieces of his work *Logical Investigations*, and explicitly attempts to provide an account of this connection.

**Part II: The Problems of Anti-psychologism**
The preceding consideration of the ways in which Frege and Husserl each address psychologistic logic identifies the many problems that psychologism presents to the project of providing solid foundations for arithmetic and thereby lending rigor to mathematical analysis. As a theory of logic, psychologism threatens the entire justificatory structure of knowledge by reducing objective features of knowledge to subjective features of the acts of thinking. The laying out of these problems with the psychologistic view by Frege and Husserl serves, then, as a set of criteria for what a conception of logic must be in order to secure truth and be the true science of knowledge. There is, nevertheless, still the question of precisely what conception of logic to put in its place, of how to treat logical form. In what follows I consider first what Frege had on offer in this regard and raise a problem with that view. As we shall see, Frege holds a kind of Platonism about logical objects. However, he has characteristically little to say about the nature of the connection between senses as abstract entities and the actual cognition in which they play a role. He characterizes this connection metaphorically in terms of ‘grasping’: in thought we ‘grasp’ or apprehend the senses which make up the content of thoughts. Beyond this characterization, Frege doesn’t seem to have any account of how the objects of thought relate to cognitive acts. I will try to say something about why Frege is so silent on this issue. It is one characteristic problem of anti-psychologistic conceptions of logic that by drawing so severely the distinction between acts of cognition and knowledge as the ideal object of thought, they make it difficult to explain how our ordinary thinking connects with objective logical laws. Although
Frege was mostly silent on this problem, it was already one that figured centrally in the development of Husserl’s views of logic. Thus, I turn to a consideration of how the view of logic that Husserl offered in place of the psychologistic account attempts to address the problem before offering some conclusions about how satisfying Husserl’s solution is.

**The Fregean Conception of Logic**

I said in the previous section that Frege's anti-psychologism consisted as much in the way he conceives of logic as in any specific arguments he makes. Now it is time to consider those features of his system that express this in more detail. In particular, Frege’s anti-psychologism is born by the status he gives to the various kinds of logical objects.

In the *Begriffsschrift*, Frege introduces what he calls ‘conceptual contents.’ Nowhere does Frege explicitly refer to conceptual contents as abstract objects. However, as that and only that which is relevant to logical inference, conceptual contents in Frege’s script are the kinds of thing that could be expressed by many separate sentences that shared the same logical consequences. They are the essential core of expressions that is “independent of the particularity of things” (BS, 49). Two sentences might be formulated differently but have the same sense. As such, conceptual contents exhibit the kind of essential unity and intersubjective availability that generally attributed to abstract objects.
Recall also that Frege’s claim of the plausibility of the idea that arithmetic is reducible to logic was demonstrated by the accomplishment of defining number in purely logical terms (FA, 99). For Frege, numbers, as we see in *Foundations of Arithmetic*, are objects that are neither the properties of external things nor merely ideas. I already quoted a passage from Frege’s argument that numbers were not merely ideas. If they were then they would be private and the number of numbers (my two, your two...) would be continuously increasing. But neither are these mathematical objects something that belongs to the external world. They are not sensible, not spatial or temporal (FA, 34, also see section 61).

The senses which represent the logical elements in ‘On sense and reference’ are similarly objective. The same sense has different expressions in different languages and even in the same language. While a *bedeutung* is perceivable by the sense and an idea is an internal and private image, a sense is neither. It is not merely subjective like an idea, but rather public and may be the common property of many people. It is the objective content of a name or thought.

Finally, the thoughts in Frege’s essay ‘Thoughts,’ are similarly neither physical things nor ideas. Rather, thoughts belong to a ‘third realm’ of non-sensible but public things. Frege makes a number of other claims about them. Thoughts have an eternal or timeless nature. He claims that we discover these thoughts (and also numbers and truths) rather then create them. Thus in some sense they ‘pre-exist’ our acts of knowing. Moreover, Frege points to thoughts as the basis of our inter-subjective communication.
Now, as we have seen in the discussion of Frege’s anti-psychologism, the conception of each of these things—concepts, numbers, senses, and thoughts—as non-physical, non-mental objects, is essential to avoiding the subjectivist pitfalls of psychologism. However, these same features of their status seem to require certain metaphysical commitments to the existence of non-spatiotemporal objects. If Frege’s central logical objects are neither sensible objects of the physical world, nor subjective ideas but rather belong to some third realm, then what exactly is the ontological status of this realm? What is the ontological status of these objects?

Moreover, certain epistemological problems seem to arise from this conception of logical objects. These non-physical, non-mental objects are introduced precisely as the objects of knowledge. There is the question then, of how to account for the connection between our cognitive faculties and the objects known, given that they are non-sensible objects.

One challenge to the view that Frege’s work in fact exhibits this kind of (problematic) Platonism is presented by Joan Weiner.\textsuperscript{10} Weiner provides interpretations of his Platonism according to which this is not a problem for Frege’s views. Weiner, for example, reads Frege as holding that there is a logical faculty for apprehending logical truths, although, she points out, there is nothing special about this faculty. It is not a \textit{deus ex machina} introduced to solve the epistemological

\textsuperscript{10} See chapter 5 of Weiner’s \textit{Frege in Perspective}, 1990. A related question is that of whether and in what sense Frege can be considered a realist. For arguments that Frege’s concern with realism is not truly a concern with realism as it is currently understood, see Sluga 1980, and Diamond 1984, and Currie 1982.
problem above, but is in fact involved in all thought including our judgments about physical objects. She argues that the production of the epistemological problem described above as a problem depends upon a comparison of our knowledge of physical things via the senses to our knowledge of these abstract objects. “Why is this difference significant?” she asks (Weiner 1990, 182). Finding a problem with the nature of abstract objects and our access to them, she asserts, depends upon the assumption that an account of our access to these objects is a requirement for defending claims to objective knowledge (Weiner 1990, 182). According to Weiner, Frege rejects one of the basic assumptions of the view that finds this a problem at all.

Weiner’s interpretation is a valuable reminder not to impute modern concerns and the salient problems of our day to Frege’s work when we read it. The suggestion that the metaphysical and epistemological questions of how we access abstract logical objects is one that was already precluded in some ways by Frege’s understanding of the self-evidence of logical laws is an important one. For one, it shows us that it would be inappropriate to impute to Frege some kind of hasty overlooking of the problem. But there is another related question that comes into view when we consider anti-psychologistic positions in general: whether or not they can provide a satisfactory account of how logical objects actually feature in our thinking.

One thing is clear: Frege has very little to say about the connection between our actual thinking and the ideal objects that enable that thought. In ‘Thought,’
Frege famously describes how we access these objects in terms of ‘grasping’: “we do not have a thought as we have, say a sense impression, but we also do not see a thought as we see, say, a star. So it is advisable to choose a special expression; the word ‘grasp’ suggests itself for the purpose” (T, 341). We see, then, that Frege introduces the term ‘grasp’ as an alternative to the words we use for the acts that go with both ideas—which we ‘have’—and physical objects – which we ‘see’. He notes that ‘grasping’ is merely a metaphor, but it is one that serves his aim of marking off logical objects such as thoughts as essentially different from both ideas and physical objects. Frege is very clearly here not answering any epistemological question about how logical objects feature in thinking. Again, Frege seems to broach the question a few pages later in ‘Thought’ when, in considering the eternal status of thoughts, he writes, “And yet what value could there be for us in the eternally unchangeable, which could neither be acted upon nor act on us? Something entirely and in every respect inactive would be quite unactual, and so far as we are concerned it would not be there. Even the timeless, if it is going to be anything for us, must somehow be implicated with the temporal” (T, 344). This at least appears to be a recognition of the difficulties produced by a view of logic that appeals to timeless abstract objects: how then does it make sense that these objects are of any use to us? Frege’s answer, however, does not here explain the relation of grasping; it appeals to it. Frege writes, “what would a thought be for me if it were never grasped by me? But by grasping a thought I come into a relation with it, and it to me” and then “How does a thought act? By being grasped and taken to be true” (T, 344).
All of this accords with Weiner’s interpretation of Frege. In her analysis of another passage where Frege seems to broach the question, she points out that Frege’s response to the question is a nonstarter. The passage is from section 62 of *Foundations of Arithmetic*, in which Frege asks, how are numbers to be given to us if we cannot have any ideas or intuitions of them? The answer he provides is that we must define the sense of a proposition in which a number occurs. Such a response does not seem to provide an account of the means by which we access logical objects or how they figure in our thinking.

So Frege clearly doesn’t seem concerned with this issue; can we explain why? I think this can be partially explained by recalling Frege’s central philosophical aim: to introduce the rigor that characterizes logic into mathematical analysis. His interests are focused on the justification of arithmetical knowledge. For this, he needs to be able to explain that and to some extent how truths are objective—that is, he needs to have some account of the objective nature of the truths—but his central aim is still the derivation of arithmetic. To give an account of the connection is something of a separate task. To put it differently, Frege assumes the status of logic and generally believes that when that status is pointed out to us we will recognize it. That is what makes the logicist project seem at all attractive. He only barely feels the need to defend that view of logic. Hence, the minimal level of argumentation, as we have seen, that defends this view of logic in the face of psychologistic alternatives. Even essays such as ‘On sense and reference,’ which have so commonly been interpreted as giving some kind of account, albeit
insufficient, of how we use logical objects in statements of meaning were written in service of the logicist project and not as theories of logic or meaning really.\textsuperscript{11} When understood as a part of the logicist project, their insufficiencies as theories of logic, are evaluations which mistake the aim of the works. By deep contrast, Husserl came to find himself facing this very problem of how our subjective thinking relates to objective thought content head-on. I gave an account of the emergence of this problem in my discussion of the development of Husserl’s philosophy in Part I.

That we can come to understand why Frege didn’t consider this mysterious grasping to be much of a problem, or why he didn’t focus on that problem does not mean that there does not remain a question, for anti-psychologistic positions, of how the objective content of thought actually features in our thinking.

\textit{Husserl’s Theory of Logic}

As I have already mentioned, Husserl attempted to confront this problem directly. It is precisely the project of the \textit{Logical Investigations} to answer that central epistemological question which Husserl frames variously as, “How can the ideality of the universal \textit{qua} concept or law enter into the flux of real mental states and become an epistemic possession of the thinking person?” and “How are we to understand the fact that the intrinsic being of objectivity becomes ‘presented’,

\footnote{See Weiner, 2006.}
‘apprehended’ in knowledge, and so ends up by becoming subjective” (LI, 169). According to Husserl, these were questions that must be answered by any pure logic as the science of science or theory of theory, i.e. any theory of what makes a science into a science. To understand why, consider that a science is not merely a collection of unrelated statements. It is a theoretical unity, a systematic interconnection of truths. Any theory of science in its most general and pure form must account for the unity of science. What does this unity consist in? If science is an interconnected unity of truths, then its unity is essentially a unity of meaning. This is why Husserl formulates pure logic as a science of meanings: “If all given theoretical unity is in essence a unity of meaning and if logic is the science of all theoretic unity in general, then logic evidently is the science of meanings as such” (LI, 225). Now, logic is the science of meanings as ideal objects but an account is yet needed of how those ideal objects can function in the attainment of knowledge, how to understand "the fact that the intrinsic being of objectivity becomes ‘presented’” and becomes “an epistemic possession of the thinking person.” With these as the direct aims of the Logical Investigations, Husserl’s work can be seen to go further in this direction than Frege’s.

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12 Willard calls this the “paradox of logical psychologism”. While non-normative logical statements made by logicians are in some sense about and applicable to particular events in the lives of particular people, they do not “draw their evidence” from the examination of those events. The paradoxicality, Willard says, is this: “how can claims about a certain sort of thing fail to draw their evidence from the examination of such events?” See Willard, 1972.
The Investigations themselves each represent a part of the “epistemological or phenomenological groundwork” of pure logic (LI, 166). Their task is to clarify the concepts and ideal laws that are the sources of ‘the objective meaning and theoretical unity of all knowledge’ (LI, 166). Husserl sometimes also puts this in terms of the ‘epistemological criticism’ of pure logic (LI, 166) in the Kantian sense of delineating what constitutes the unity of the science of pure logic.

Since the tasks of pure logic are to examine the logical objects Husserl begins with a discussion of expressions and meanings. He explains, “linguistic discussions are certainly among the philosophically indispensable preparations for the building of pure logic: only by their aid can the true objects of logical research – and, following thereon, the essential species and differentiae of such objects – be refined to a clarity that excludes all misunderstandings” (LI 2, 165). Since knowledge comes to us and is preserved in expressions, it is through them that we can investigate the objects of logic. “Propositions are themselves the elements of inferences” (LI 2, 225). Thus, “If meaning, rather than the act of meaning, concept and proposition, rather than idea and judgment, are what is essential and germane in science, they are necessarily the general object of investigation in the science whose theme is the essence of science. Everything that is logical falls under the two correlated categories of meaning and object” (LI 2, 226).

Now, this clarification of the objects, concepts, and laws of logic is undertaken in a special way—through the phenomenological investigations of the experiences of thinking and knowing. In light of the foregoing discussion of Husserl’s
deep insistence upon distinguishing the objects of knowledge from acts of knowing and his insistence upon the project of logic as a pure science of knowledge, that he now turns to experiences of thinking and knowing may seem like a reversion to psychological methods. However, by ‘phenomenological’ he means researches that reveal the essential structure of these experiences. They are not psychological but analyze the ‘pure generality’ of the essence of these experiences. Husserl’s focus on experience here is explained by his belief that we must inspect thinking and knowing themselves (i.e. the experiences of thinking and knowing) in order to maintain the “freedom from presuppositions” essential to any scientific endeavor.

We must make clear the essential nature of acts by appeal to intuition and to the ‘things themselves.’ Now, phenomenological investigations are capable of providing a clarification of logical objects because they seek the essences of experiences of meaning and these experiences essentially have reference to what it is that is meant by them, i.e. to objectivities. Thus, when Husserl undertakes the investigation of meanings he does so by looking at the experiences of meaning.

Husserl analyzes meaning experiences into the following elements: there is of course a sensible expression, for example, the sounds of an utterance. The expression indicates an act of meaning. Husserl distinguishes two acts: meaning-intentions or meaning-conferring acts, and meaning-fulfillment. These are unified. Then there are the contents of these experiences, that which an expression or act of meaning expresses or means. These meanings are the elements that exhibit the anti-psychologistic features of Husserl’s theory. These are or take the form of
propositions. Finally, there are the objectivities that expressions and meanings are about.

Meanings themselves are ideal.\textsuperscript{13} They relate to acts of meaning as the ideal content of real acts. It is only the acts that are real. Meanings or propositions have no spatio-temporal existence. Rather, they are what stays constant across variations of acts of meaning. They are unchanging entities, not created by acts of knowledge but there for our discovery. In all of these ways, Husserl’s conception of meaning is very like Frege’s conception of senses and thoughts.

Unlike Frege, Husserl has an account of how these meanings function in our acts of thinking. As the ideal contents of meaning-intentions, meanings are instantiated in individual acts of meaning. But as ideal unities that “neither spring forth nor vanish in the act of [meaning]” their relation to acts of meaning is merely contingent. Husserl explains that there are “countless” meanings that are, in this relational sense, merely possible since they are never instantiated (LI, 233). Thus, a meaning retains logical independence from the acts in which it is instantiated. In this sense, an ideal meaning is one member of an ideal set of logical objects.

In this framework, meanings are not, however, the objects of acts. Husserl distinguishes between the content of an act and the objectivity to which it makes reference. Though meanings are in some sense logical objects or unities, it would be incorrect to think of them as the objects of acts of meaning. A thought is not about its meaning but about some object. Meaning is instead the ideal content of the act of

\textsuperscript{13} See sections 11, 12, and 13 of LI 1, Chapter 1, pp. 195-198.
meaning. The relationship of the content to the act of meaning is that of being a character or quality of those acts.

What advantages does the view of logical objects as universals have? Why is instantiation better than ‘grasping’? First of all, it is at least an account of the relation of our thinking to the thought objects. Second, Husserl’s conception of logical objects as it is described here is less vulnerable to charges of problematic Platonism, than Frege’s thoughts are. For Husserl’s meanings are not objects but contents of acts of thinking.

Thus, Husserl tries to address the gap between the status of logic and the fact of our use of it by conceiving of logical propositions as universals with ideal status and then by parsing our use of logic in terms of the instantiation of those universals. Propositions are not objects of acts but qualities of those acts. Now, truths that apply to the universals have a relationship to truths that apply to the instantiations of those universals – that is truths about the acts. This is how logical truths apply to those acts while remaining universal.
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**Husserl’s Works**


Other Works


