Husserl’s Arguments against Logical Psychologism and his Conception of Ideal Objects

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Husserl’s main arguments against Logical Psychologism (LP) are found in the Prolegomena to the Logical Investigations. The core commitment of LP is the thesis that logic is explanatorily reducible to psychology. This was the dominant view of the foundations of logic at the time Husserl wrote the Logical Investigations. The relevance of Husserl’s arguments in the Prolegomena is not, however, restricted to the views of Husserl’s contemporaries. Although it is rare for a contemporary philosopher to explicitly endorse LP (Kusch is an exception), I will point out the ways in which LP is associated with strong naturalism (defined by the thesis that ‘all of the facts are natural facts; all putative non-natural facts are to be i) reduced to natural facts or ii) taken as fictional entities’). If Husserl’s arguments are convincing, then they will pose a problem for deflationary, Strong Naturalist views of apparently ideal sciences. Following Robert Hanna, I will classify Husserl’s arguments against the three major commitments entailed by LP as:

i. The Argument against Modal Reductionism in LP
ii. The Argument against Epistemic Empiricism in LP
iii. The Argument against Sceptical Relativism in LP

I will assess these arguments and consider the conception of ideal objects used to support key premises in them. I will also point out how this early conception is important to the conception in Husserl’s later work (focussing on the The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy for the purposes of this talk).

Introduction

Husserl’s main arguments against Logical Psychologism (LP) appear in the Prolegomena to the Logical Investigations (1900/1901). At the time that the Logical Investigations were written, Logical Psychologism was the dominant interpretation of the foundations of logic. The basic commitment of the view is that logic is explanatorily reducible to psychological investigation. As I will set out, Husserl thought that this core commitment entails other problematic commitments about the nature of logic and our knowledge of it. I will consider Robert Hanna’s reconstruction and defence of Husserl’s arguments against these entailments. I will also set out the conception of ideal objects Husserl uses to support these arguments.

§I:

Husserl defines Logical Psychologism (LP) as the thesis that “the essential theoretical foundations of logic lie in psychology, in whose field those propositions belong–as far as their theoretical content is concerned–which give logic its characteristic pattern”. The prima facie plausibility of the view is supported by the observation that logic is the science of the laws of thought, dealing with

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1 This is a summarised version of a chapter from my MA thesis, “Husserl on Ideal Objects”.
5 Edmund Husserl, Logical Investigations, trans. J. N. Finlay (London: Routledge, 1970). Subsequent references to this work will be set out by referring to the section–i.e. Prolegomena (Pr.) or Investigation Number (i.e. I-IV), sub-section and page number(s).
6 Husserl, Logical Investigations, Pr., §17, 90.
phenomena such as, as Husserl points out, “concepts, judgements, syllogisms, deductions, inductions, definitions [and] classifications.”

All of these are mental phenomena and are, therefore, objects of psychological investigation. As Robert Hanna points out, the basic commitment of LP is, then, that logic is explanatorily reducible to psychology, and is so in two senses:

i. a complete knowledge of the empirical facts and laws of empirical psychology yields a complete knowledge of the existence and specific character of logic

and

ii. the empirical facts and laws with which psychology deals strictly determine the existence and specific character of logic.

This core commitment entails two further commitments, both of which Husserl finds problematic. The two further commitments are:

i. Modal Reductionism about Logic (MRL): that logical laws and logical truths are explanatorily reducible to merely causal laws and merely contingent, probabilistic truths

ii. Epistemic Empiricism about Logic (EEL): that logical knowledge is explanatorily reducible to merely a posteriori knowledge and justification

These two commitments conflict with Husserl’s assertions that i) logical laws and truths are necessary (unrestrictedly true) and ii) that logical knowledge is a priori and certain and justified a priori.

§II:

Husserl’s critique of LP is motivated by his view that logic i) involves a class of ideal entities (it is thus analogous to mathematics) and ii) is founded on pure logic (where pure logic acts as the theoretical basis from which any practical application of logic is derived). While arguing against MRL and EEL Husserl makes several moves to support this conception of logic. I will set out the arguments against the two entailments and then proceed to make clear how Husserl supports his conception of logic.

§II.i

The first argument is aimed against MRL in LP. The core thesis of LP entails MRL for the following reason. Asserting the core thesis of LP and holding that we can account for logical laws and truths by describing the empirical facts about actual acts of thought and the empirical, causal laws pertaining to them, commits us to holding that logical truths and laws are determined through methods which yield no more than probable truths. This is because, as Husserl puts it: “laws of thought, as causal laws governing acts of knowledge in their mental interweaving, could only be stated in the form of probabilities”. The proponent of LP is committed to restricting the scope of

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7 Ibid., Pr., §18, 91.
9 Hanna, “Husserl’s Arguments against Logical Psychologism”, 29.
10 Ibid.
11 Husserl and Hanna discuss three problematic entailments, but due to space constraints I will only treat two here, as they are most relevant to my concerns. The third is Sceptical Relativism about Logic (SRL): that logical laws, logical truth and logical knowledge are explanatorily reducible to either SRL-a) individually held beliefs or SRL-b) species-specific beliefs. These three labels (MRL, EEL and SRL) and their definitions are due to Hanna, “Husserl’s Arguments against Logical Psychologism”; Hanna, “Logical Cognition”.
12 Husserl in fact employs several arguments against Logical Psychologism in the Prolegomena. Treating all of these is outside the scope of this paper. For a summary of all of the arguments, see Kusch, Psychology, 41-62.
13 For example: Husserl, Logical Investigations, Pr., §46, 181.
14 For example: Ibid., Pr., §46, 179 & 181.
15 For example: Ibid., Pr., §20, 97.
16 For example: Ibid., Pr., §22, 101.
logical truth and logical laws to empirical facts about the world and the mere probabilities we can ascertain about them.\(^\text{17}\)

Husserl argues that MRL is untenable. Robert Hanna has reconstructed Husserl’s argument against MRL in LP along the following lines:

i. LP entails MRL— that logical truths and laws are at best probably true

ii. MRL is inconsistent with the (absolute) necessity of pure logical laws and pure logical truths\(^\text{18}\)

iii. Therefore, LP is false\(^\text{19}\)

The second argument is aimed against EEL in LP. LP entails EEL because by asserting the core thesis of LP and holding that empirical laws strictly determine our knowledge of logic and the actual character of logic commits one to treating logic in terms of natural laws. Given that all natural laws are \textit{a posteriori}, one is committed to justifying logic solely in terms of \textit{a posteriori} knowledge. The important premise here is, as Husserl puts it, that “no natural laws can be known \textit{a priori} … The only way in which a natural law can be established and justified is by induction from singular facts of experience”.\(^\text{20}\) Robert Hanna has reconstructed Husserl’s argument against the tenability of this commitment along the following lines:

i. LP entails EEL— that logical knowledge is justified only observationally or by empirical induction

ii. EEL is inconsistent with the \textit{a priori}, non-empirical character of the kind of justification adequate to logical laws and logical truths

iii. Therefore, LP is false\(^\text{21}\)

\textbf{§II.ii}

The most evident problem with the arguments against MRL and EEL is that, as they stand, they are question begging.\(^\text{22}\) They each rely on an acceptance of the anti-psychologistic view of the epistemological and ontological status of logic. Paul Natorp raised this charge\(^\text{23}\) in his review of the \textit{Prolegomena} in \textit{Kant-Studien}.\(^\text{24}\) After reconstructing Husserl’s two arguments Natorp points out that these positions are supported “clearly under the presupposition that one is already convinced that there are strict laws at least in logic and mathematics”\(^\text{25}\) and are thus question begging. To resolve this issue, we would need to find further support for the assertions on which the second premise of each of the arguments rests.

Importantly for my interests here, the arguments against MRL and EEL have the same underlying form.\(^\text{26}\) The general form is:

\(^{17}\) Hanna, “Husserl’s Arguments against Logical Psychologism”, 32.


\(^{19}\) Looking at the argument in this form, it will be noticed that premise two requires further support on pain of begging the question. Later on I will show how Husserl’s arguments rely on further support for his anti-psychologistic view of logic.

\(^{20}\) Husserl, \textit{Logical Investigations} Pr., §21, 99.

\(^{21}\) Hanna, “Husserl’s Arguments against Logical Psychologism”, 35; Hanna, “Logical Cognition”, 263.

\(^{22}\) This is true for both Husserl’s original formulation and Hanna’s reconstruction in standard form.


\(^{24}\) The essay translated as: Paul Natorp, “On the Question of Logical Method in relation to Edmund Husserl’s \textit{Prolegomena to Pure Logic}”.

\(^{25}\) \textit{Ibid.}

\(^{26}\) This is also true for the argument against SRL, which I have left aside. See the arguments against SRL in Hanna, “Logical Cognition” and Hanna, “Husserl’s Arguments against Logical Psychologism”.

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i. LP entails x
ii. x is inconsistent with some apparent property of logical items, y, where y has an ideal character
iii. Therefore, LP is false

With this general form made explicit, we can see that Husserl’s arguments rely on asserting that there are items with an ideal character and that logical items are of this kind. The arguments against psychologism depend, then, on a central distinction in Husserl’s thought at large, i.e. a distinction between the real and ideal. I will look at an argument that Husserl uses to support this distinction in the Logical Investigations and will later consider whether the two specific assertions in the arguments against MRL and EEL follow from this distinction, where the two specific assertions are that (at least some) logical items are i) absolutely necessary (unrestrictedly true) and ii) justified a priori.

§III

The core of Husserl’s defence of the distinction between ideal and real objects and ideal and real sciences is the argument used to refute what he calls the “Second Prejudice” of LP. The first step in this argument is to draw a distinction between the methodological and theoretical sides of any given science. When we consider the methodology of any particular science, we are considering the set of practices and processes prescribing how to properly engage with the field or subject matter of the science. When we consider the theoretical content of any given science, on the other hand, we are considering the truths, rules and laws that the science establishes and the patterns able to be established between these.

The “Second Prejudice” is the denial of the importance of this distinction. On this view, even if we allow the distinction, the purely logical or theoretical aspect of a science still involves mental phenomena, and as mental phenomena, they can be investigated psychologically. The distinction thus has no bearing on the question of whether logic is explanatorily reducible to psychology. To refute the “Second Prejudice”, Husserl uses mathematics and mathematical items as a model for his view of logic and logical items. Using arithmetic as an example, Husserl states:

Arithmetic sets up laws for numbers, for their relations and combinations: numbers, however, are the products of colligating and counting, which are mental activities...whatever may be determined in arithmetical propositions, are merely mental processes, and must as such obey mental laws.

The observation supporting the initial plausibility of LP also applies to arithmetic, since both logic and arithmetic involve mental processes. This supports what could be called “Mathematical Psychologism”–the view that mathematics can be explanatorily reduced to psychology. Husserl uses the following important distinction to undermine the initial plausibility of such a view. There is

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27 Husserl sets out three prejudices of Logical Psychologism in the Prolegomena, in Ch. 8, §41-51. I will set out the first and second here for reference; for the third see Logical Investigations, Pr. §49, 187: i). First Prejudice: “Prescriptions which regulate what is mental must obviously have a mental basis. It is accordingly self-evident that the normative principles of knowledge must be grounded in psychology of knowledge” (Logical Investigations, Pr. §41, 168). ii) Second Prejudice: In summary, this prejudice is “the distinction between purely logical and methodological propositions is pointless, the [Logical Psychologistic] objection affects both equally. Every attempt therefore to extrude even part of logic from psychology, on ground of its pretended ‘purity’, must count as radically mistaken”. Husserl, Logical Investigations, Pr. §44, 177.

28 Husserl first makes this distinction in the course of refuting the “First Prejudice” of Logical Psychologism. I will leave aside the refutation of the First Prejudice and focus on the distinction, as the refutation is not important to my aims here.

29 Husserl, Logical Investigations, Pr., §45, 178.

30 This observation is mentioned in §1: Logic deals with phenomena which occur within the domain of thought and which are, therefore, objects of psychological investigation.
a distinction between the act of thought (in this case the actual act of arithmetical thought) and the object of thought (in this case the arithmetical object and the arithmetical law it falls under). An act of thought is an empirical, real fact that is open to psychological investigation. Since a mental arithmetical operation, such as counting, is a particular kind of act of thought, it is also an empirical, real fact. This is not so for arithmetic and its objects, or, more generally, for mathematics and its objects. Husserl thinks that we should be careful to separate mathematical items (numbers, laws, etc.) from their presentations on the grounds that:

The number Five is not my own or anyone else’s counting of five, it is also not my presentation or anyone else’s presentation of five. It is in the latter regard a possible object of acts of presentation, whereas, in the former, it is the ideal species of a form whose concrete instances are found in what becomes objective in certain acts of counting.

On Husserl’s view a mathematical item is an individual item over and above any acts of thought it appears in. It is, in other words, an ideal, multiply instantiable entity. Any presentation of a mathematical item (e.g. the presentation of the number 5 in the equation 5+7=12) is a concrete instance of this ideal entity. Given that the mathematical item can be presented in many different instances of experience, the mathematical item itself should not be considered, as Husserl writes, “a part or side of a mental experience, and so not as something real”. Husserl uses this distinction between i) the act of thought which presents an instance of the ideal species and ii) the object of the act, i.e. the ideal species, to state that “propositions about arithmetical thought processes belong in psychology”, whereas arithmetical propositions are “concerned with absolute numbers and number-combinations in their abstract purity and ideality”.

Earlier we saw that we can approach any given science in terms of either: i) its methodology or ii) its theoretical content and unity. Applying this to the act/object distinction, the methodological aspect of a science is constrained by the range of our actual acts of thought (as acts of thought are involved in practicing the methods of investigation) and by our physical constitution. Conversely, the theoretical aspect of a science is constrained by ideal species and the ideal logical laws prescribing the proper logical relations between these species. If we apply this to logic itself, there are two ways of approaching this discipline: i) in terms of logic as a technology and ii) in terms of “pure logic” as the theoretical basis for logic as a technology:

i. Logic as a technology, or, the discipline concerned with how logic is to be applied to other domains of scientific knowledge or any rational thoughts, is an application of logic. Since it is concerned with how actual acts are to be carried out in accordance with logical laws, it lends itself to psychological investigation. As Husserl states, “naturally the methodology of scientific research and proof must take full cognizance of the nature of the mental states in which research and proof take their course”.

ii. Pure logic, on the other hand, is not concerned with mental facts. The range of pure logic (as with arithmetic) is ideal species, not empirical facts

There are two consequences to be drawn from this. The first is that pure logic is the basis from which the laws which constrain any given science are derived. When we consider the theoretical unity of any given science, we are considering the laws of pure logic that apply to the science’s theoretical content. These are ideal laws. The second is that the theoretical side of logic is not only constrained by ideal laws, but is also a domain of ideal laws. There is a parallel, then, between

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31 Husserl, Logical Investigations, Pr., §45, 178.
32 Ibid., Pr., §46, 179-180.
33 Ibid., Pr., §46, 180.
34 Ibid., emphasis in original.
35 Ibid.
36 Ibid., Pr., §46, 180-181.
37 Ibid., Pr., §46, 181.
mathematics and logic, where both disciplines have an ideal character and are concerned with ideal species. Because of this, what has been said about mathematics and mathematical items also applies to logic and logical items. Logical items are ideal species which can be presented as instances in acts of logical thought. As the proponent of LP takes the range of logic to be acts of thought with a logical character, they restrict their concerns to logic as a technology, overlooking its pure logical theoretical content.

With the distinction between the real instances and ideal species in place, we can draw two further consequences. The first is that Husserl has refuted the “Second Prejudice” of LP. It is true that the methodological aspect of a science is concerned with mental phenomena, but this is not true for the pure, theoretical aspect of a science. The second is that this distinction can be used to clarify Husserl’s distinction between ideal and real sciences. Mental events, such as the presentation of an ideal species as in the thought that “5+7=12”, are one example from the total class of real empirical items. Sciences of real objects deal with objects in the same general class as mental events—those items with a spatiotemporal determination. Ideal species do not have spatiotemporal locations; rather, they are presented in distinct empirical cases with spatiotemporal locations. A science of ideal objects is concerned exclusively with ideal items and the ideal laws of combination and relation pertaining to them.

§III.i

The final stages in undermining the question begging charge are to show that LP presupposes this conception of logic and to support the assertions Husserl makes about logical objects. The latter are: i) against MRL, logical laws and truths are necessary, and ii) against EEL, logical knowledge is a priori and certain and justified a priori. Husserl supports the charge that LP presupposes his conception of pure logic with the following observation. Just as every science can be considered in terms of its methodology and in terms of its theoretical content and unity, it can be pointed out that psychology has a theoretical content which is constrained by logical consistency and lawfulness. Psychology presupposes what Husserl calls “pure logic”, and to try to found logic on psychology would thus be circular. Husserl states this charge against LP at two points in the Prolegomena. While discussing the distinction between methodology and theoretical content, Husserl states that the proponent of LP should:

Admit that truths which have their roots in the concepts which constitute the objectively conceived Idea of Science, cannot also belong to the field of any particular science…. [These], being ideal, cannot have their home ground in the sciences of matter of fact, and therefore not in psychology.39

Earlier in the Prolegomena, Husserl sets out the critique as:

Logic…can as little rest on psychology as on any other science; since each science is only a science in virtue of its harmony with logical rules, it presupposes the validity of these rules. It would therefore be circular to try to give logic a first foundation in psychology.40

A pointed way in which the proponent of LP could reply to this charge, as Husserl anticipates, is to state that if we accept that any science presupposes the laws of pure logic, then not just psychology but also logic must presuppose these laws, meaning that logic falls into the same problem of circularity. As Husserl puts it:

38 The example just mentioned involves the following five ideal species: 5, 7, 12, the arithmetical relation of addition and the sum resulting from placing the left-hand ideal singulars into the addition relation.
39 Ibid., Pr., §42, 172.
40 Ibid., Pr., §19, 95.
The opposition will reply: That this argument cannot be right, is shown by the fact that it would prove the impossibility of all logic. Since logic must itself proceed logically, it would itself commit the same circle, would itself have to establish the validity of rules that it presupposes.  

This is what Henry Sheffer called the “logocentric predicament”, that “in order to give an account of logic, we must presuppose and employ logic”.  

As Robert Hanna applies this to Husserl’s case, the problem becomes, specifically:

How can pure logic in Husserl’s sense ever be explained or justified, if every explanation or justification whatsoever both presupposes and uses pure logic in Husserl’s sense?

Husserl is well aware of this problem, noting that the logical laws make up both the form and object of logical science, but also thinks it is easily resolvable.

Husserl argues that this apparent problem is due to an equivocation in the sense of “presupposing”. There are two senses in which we may presuppose logic and logical laws. On the one hand, we may presuppose the logical laws in the sense of reasoning “from” them, i.e. using them as premises in arguments to deduce conclusions. On the other hand, we may presuppose them in the sense that we reason “according to” them. Using this distinction, we can point out that Husserl’s explanation and justification of pure logic only presupposes pure logic in the latter sense. This deflates the circularity charge because the circularity problem only arises if we presuppose logical laws in the former sense.

If we take account of the commitment underlying the distinction of reasoning from and reasoning according to logical laws and of Husserl’s positive account of logic set out so far, a problem is raised for the proponent of LP. If a proponent of LP were to admit the distinction in order to resolve the circularity problem, they would be committed to Husserl’s conception of pure logic, as a commitment to the distinction also entails a commitment to the latter. If the logical laws have a character whereby scientific thought, broadly construed, proceeds according to them and is constrained by them, then Husserl’s characterisation of pure logic is (broadly) correct.

Husserl thus supports his view that logic is an ideal discipline which deals with ideal objects, and which set out ideal laws for constraining all cases of science, where these latter are what Husserl calls the laws of pure logic. The pure logical laws are independent laws which constrain scientific thinking a priori, or, as Hanna describes them, “supreme constructive categorically normative meta-principles”. These are the laws “according to” which any given science reasons and are “presupposed” by the sciences in this sense. Husserl’s pure logic and pure logical laws are the necessary, a priori principles underlying all theoretical consistency and any explanation or justification whatsoever. This is what Husserl is asserting when he says that any scientific discipline:

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41 Ibid.
43 Hanna, “Husserl’s Arguments against Logical Psychologism”, 39.
44 Husserl, Logical Investigations, Pr., §48, 186.
45 Ibid., Pr., §19, 95.
46 Where the senses of these terms are set out as: “constructive (i.e., not deductive), categorically normative (i.e., not instrumental, causal, or merely descriptive) meta-principles (i.e., not lower-order principles)”. Hanna “Husserl’s Arguments against Logical Psychologism”, 40.
47 Hanna puts it as that “the lower-order sciences are all…constructed and operated according to these supreme, constructive categorically normative meta-principles”. Ibid.
48 Ibid.
49 Husserl makes this claim in regard to logical technology, but it is clear from the rest of §42, from which this passage is quoted, that he would also support my generalisation of his claim.
as a scientific discipline, must itself presuppose certain items of theoretical knowledge...[i.e., the] essential constituents of all science considered as an objective theoretical unity...the fundamental standards by which we can decide whether anything claiming to be a science...stand[s] in an a priori conflict with the ideal conditions of the possibility of theory and science as such.50

As these laws are the necessary, a priori conditions of possibility of theoretical consistency, they provide the required support for Husserl’s assertions about logical objects as i) necessary and ii) justified a priori.

§IV

There is, however, one further problem. With the distinction between the ideal species and its instances, and thus the characterisation of ideal objects as universals, Husserl appears to be committed to a Platonism about ideal objects, where Platonism is defined as a commitment to non-spatiotemporally existing entities that allow of multiple instantiations in real particulars. At the same time, though, Husserl rejects the interpretation of his position as Platonistic.51 While discussing the ideality of meanings in “Investigation I”, Husserl states that his characterisation of ideal objects as “universal objects” is not meant to imply that they are “for that reason objects which, though existing nowhere in the world, have being in a topos ouranios [heavenly place]...” because “such metaphysical hypostatization would be absurd”.52 Husserl also points out that “the point on which...psychologism differs from idealism”,53 is that the latter realises “the intrinsic right of specific (or ideal) objects to be granted objective status alongside of individual (or real) objects”.54 Importantly, Husserl proceeds to qualify the sense of “idealism” in a way that amounts to a rejection of the interpretation of his position as Platonistic:

To talk of ‘idealism’ is of course not to talk of a metaphysical doctrine, but of a theory of knowledge which recognises the ‘ideal’ as a condition for the possibility of objective knowledge in general, and does not ‘interpret it away’ in psychologistic fashion.55

If the appeal to ideal species is not to be interpreted metaphysically, how is it to be understood? To solve this problem Husserl appeals to Lotze’s revised form of Platonism as the basis for his view of ideal objects. Husserl mentions Lotze’s influence in, for example, his 1903 review of Melchior Pelágyi’s book.56 Here, Husserl states that “Lotze’s reflections about the interpretation of Plato’s theory of forms (Ideenlehre) had a profound affect on...my concept of ‘ideal’ significations, and ‘ideal contents’”,57 and describes ideal or abstract objects as universals.58 Husserl takes universals to

50 Husserl, Logical Investigations, Pr., §42, 172.
51 He does so at several points in his work. I will focus on two examples from the Logical Investigations. There is a further, pointed example from Edmund Husserl, Ideas I: General Introduction to Pure Phenomenology, trans. W.R. Boyce Gibson (London: Allen & Unwin, 1969), 88: “It has ever and anon been a special cause of offense that as “Platonizing realists” we set up Ideas or Essences as objects, ascribe to them as to other objects true Being, and also correlative the capacity to be grasped through intuition, just as in the case of empirical realities. We disregard that, alas!, most frequent type of superficial reader who foists on the author his own wholly alien conceptions, and then has no difficulty in reading absurdities into the author’s statements”. Husserl also mentions here that he thinks that this view of abstract objects existing in a third realm is “perverse “Platonic hypostatization””. Ibid.
53 The sense of “idealism” will be defined shortly.
55 Ibid., my emphasis.

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have “‘ideal’ being or validity”, which is the kind of being “established, for example, in the ‘existence proofs’ of mathematics”.\textsuperscript{59} As such, “they do not have the real being of things, or of dependent, thing-like moments–of temporal particulars in general”.\textsuperscript{60} Given that Husserl explicitly rejects the idea of existing in a third realm as mythical and mysterious in this review,\textsuperscript{61} Husserl’s appeal to Lotzean Platonism in order to avoid full-blown Platonism in his view of ideal objects depends on the intelligibility of the distinction between “existing in a third realm” and “having validity”. Assessing Husserl’s and Lotze’s attempts to draw this distinction is outside the scope of this paper,\textsuperscript{62} but the distinction is central to supporting Husserl’s arguments against psychologism. Without it, we cannot conclude that Husserl’s arguments are successful.

§V

There are two major implications to be drawn from the arguments against LP and the concept of ideal objects in the Prolegomena. Firstly, they are relevant to clarifying other areas of Husserl’s work. The idea of ideal objects as multiply instantiable entities appears in the Crisis\textsuperscript{63} and Phenomenological Psychology\textsuperscript{64} and the idea that ideal objects are non-spatiotemporal entities appears in Formal and Transcendental Logic.\textsuperscript{65}

Secondly, as Robert Hanna points out,\textsuperscript{66} although Husserl’s arguments were targeted at his contemporaries and their project of reducing logic to an introspectionist and empiricist psychology, LP is also a natural ally for contemporary, strong naturalist reductive accounts of logic and other apparently ideal sciences (e.g. mathematics). Where strong naturalism is defined by the thesis that “all of the facts are natural facts”, an adherent of strong naturalism is committed to anti-realism about these apparently ideal objects, either i) treating apparently abstract objects as fictional items or ii) reducing them to particular, empirical phenomena. If these arguments against psychologism are convincing, they create problems for the second approach—a position with wide support in contemporary philosophy.

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\textsuperscript{58} In the passages to be quoted, Husserl is in fact explaining his view of propositions by referring to universals, but we have already seen that he explains mathematical objects in the same way. As such, at this stage of his work (1900-1903) Husserl treats propositions, meanings, logical objects and mathematical objects as sharing the same status as universals.

\textsuperscript{59} Husserl, “A Reply to a Critic of my Refutation of Logical Psychologism”, 37.

\textsuperscript{60} Ibid.

\textsuperscript{61} Ibid.

\textsuperscript{62} Lotze’s approach is to take both “having validity” and the distinction between “existing” and “having validity” to be primitives—that is, unanalysable brute facts. In Book III, Ch.2 of Logic, Lotze states: “As little as we can say how it happens that anything \textit{is} or \textit{occurs}, so little can we explain how it comes about that a truth has Validity; the latter conception has to be regarded as much as the former as ultimate and underivable” Hermann Lotze, Logic, trans. Bernard Bosanquet (Oxford: Clarendon Press).


\textsuperscript{64} Edmund Husserl, Phenomenological Psychology: Lectures, Summer Semester, 1925 (The Hague: Nijhoff, 1977). For example, see Edmund Husserl, “The Task and Significance of the Logical Investigations”, trans. J.N. Mohanty, in Readings on Edmund Husserl’s Logical Investigations, ed. J.N. Mohanty, 198 (The Hague: Nijhoff, 1977): “Irrespective of whether it is I or someone else who thinks or proves the Pythagorean theorem, the latter itself is a unique member of the realm of propositions”.


\textsuperscript{66} Hanna, “Logical Cognition”, 256.