ABSTRACT. By tracing the general evolution of Husserl's theory of logic and mathematics, this essay explores Husserl's identification and strategic overcoming of the two forms of psychologism—logical psychologism and transcendental psychologism—that bar the way to rigorous phenomenological inquiry. In the early works "On the Concept of Number" and the Philosophie der Arithmetik Husserl himself falls victim to a particular form of logical psychologism. By the time of the Logical Investigations this problem has been dealt with: the method of eidetic intuition enables an account of the "origins" of logical and mathematical concepts without reducing such concepts to mere predicates of mental acts. The task of Formal and Transcendental Logic is to disclose the more pervasive problem of transcendental psychologism, one that taints even the theory of pure logic articulated in the Logical Investigations. A radical solution is provided through the development of an "ultimate logic" of transcendental subjectivity.

In this essay I will examine Husserl's struggle in his studies of logic and mathematics to overcome the two forms of psychologism that stand between cognition determined by the "natural attitude" and transcendental phenomenology. Husserl confronts the first form, logical psychologism, in the Logical Investigations, by providing an epistemological clarification of the origins of pure logical and mathematical formations. Husserl's later reflections lead to the discovery that a second form of psychologism, transcendental psychologism, remains operative even when, as in the Logical Investigations, the formal a priori or the sphere of pure logic and mathematics is vindicated as a legitimate object domain. Transcendental psychologism pervades all thinking that fails to grasp the significance of transcendental subjectivity as the phenomenological ground of all being. While the overcoming of the first form of psychologism depends on a theory of eidetic intuition, of the intuition of essences, transcendental psychologism is exposed only when the naturalist bias that informs all "straight-forward" thinking, even mathematical and logical thinking, is made evident. This bias arises because of the hid-
neness of the constituted character of all transcendencies, which include not only the natural world (external reality) and ideal objects, but the empirical ego itself. Psychologism is not fully overcome until everything worldly is transformed into an index of the transcendental ego and its acts of meaning-constitution.

II.

Logical psychologism can be broadly defined as the thesis that logical and mathematical formations are not independent or transcendent objects but are dependent on, immanent in, or identical with certain psychic acts of the real empirical ego. The first turn on the way to phenomenology consists in convincing

... the reader that mere prejudices are what keep him in this situation from allowing as valid that which he has indeed and without a doubt before his eyes, which he judges on countless times in everyday life and in science, which exhibits itself to him possibly in self-evident cognition and then does so as truly being—in other words, as something that is an object, that is and yet is nothing real.¹

Numbers and propositions cannot be seen or touched but they are still objects: the meaning of objectivity, in other words, is not coextensive with the meaning of real, sensuous being.

Husserl's defense of the ideal and transcendent character of logical and mathematical entities is continuous with the tradition that, stretching back to the Pythagoreans and Plato, has granted an independent ontological status to non-sensuous beings. The ancient problematic centers on whether numbers and the Forms "exist apart" or "in" sensible things. For modern philosophy the site of immanence and reductionism shifts: at issue is still the "dependence" or "independence" of ideal entities, but in place of the sensible world modern reflection substitutes the subject and its acts of thinking. The modern equivalent of the reduction of the one to the many is the reduction of all objects of thought to the psychological act of consciousness in which they appear. The defense of the ideal in ancient and modern philosophy alike consists in demonstrating the self-contradictory nature of this thesis: if everything is in a constant state of change, if being is identical with the stream of immanent acts of consciousness and nothing "... abides constant in the same condition and in the same respects,"² then experience would be a "Bacchanalian whirl" in which knowledge could never arise. The most fundamental of transcendental arguments stands behind the rejection of both the Heraclitean flux and sensationalism: the condition of possibility of intelligibility is the stability or identity of what is known.

Until quite recently scholars have attributed to Husserl's early works, those prior to the Logical Investigations, some sort of logical psychologism. This interpretation derived largely from G. Frege's influential review in 1894 of Husserl's Philosophie der Arithmetik. In Husserl's own words, this early text provides "a radical analysis of the 'psychological' origin of the basic mathematical concepts" such as "plurality, number, unity and the associated primitive operational concepts for addition, etc."³ Frege argues that Husserl's exploration of the "psy-
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chological origins" of mathematical concepts relies on a psychologistic epistemology, one in which concepts and objects alike are reduced to mere subjective states of mind or representations (Vorstellungen). He concludes that it is impossible for any such theory to do justice to the ideal status of numbers and other mathematical and logical concepts. While it is quite true that a form of psychologism, one stemming from Husserl's use of the theory of psychological reflection to account for the origin of formal concepts, is operative in this early work, it has been convincingly argued by J. Mohanty and D. Willard that Husserl's recognition of the ideality of logical and mathematical concepts, and of meanings in general, is already manifested in these mathematical studies and was achieved independently of Frege's criticism.¹

III.

In Formal and Transcendental Logic Husserl remarks that the Philosophie der Arithmetik was his first "phenomenological-constitutional investigation; and at the same time it was the first investigation that sought to make 'categorial objectivities' of the first level and of higher levels... understandable on the basis of the 'constituting' intentional activities".² W. Biemel supports Husserl's self-interpretation, pointing out that in Philosophie der Arithmetik Husserl achieves the insight that formal relations (such as collective connection) are not given in sensuous intuition and must, therefore, be supplied by an additional act of consciousness: this latter act is interpreted by Biemel as a "constitutive act". More recently Th. DeBoer has argued that a closer examination of the text reveals that "... the act of a higher order has no correlate of its own; there is no object of a higher order". As a result, "... any attempt to regard the collecting act as a constituting act must run aground at this point, for constitution implies that the act has a correlate which it constitutes".³

In Husserl's mature writings 'constitution' implies an act that constitutes, a noesis, and that which is constituted, the noema. Neither the noematic act nor its correlate, however, appear prior to the turn affected by the transcendental reduction: they are, on the contrary, the "residue" of the reduction.⁴ Therefore, it is misguided to speak of a full-blown theory of constitution independently of the phenomenological reduction. This same criticism could be made of readings of Logical Investigations that interpret either the act of categorial intuition or the act of ideative abstraction as constituting acts: neither the intuition of categorial objectivities nor the intuition of essences is equivalent to the act of meaning constitution. Husserl identifies a higher-order object, but insofar as he still conceives of consciousness in "mundane" terms, the deeper questions surrounding the constitution of objectivities in general are not addressed.

The opposite extreme, which would posit a radical discontinuity between texts from different periods, must also be discounted. Certain fundamental concepts and themes are introduced in Husserl's early works and continue to occupy a prominent place, often with little modification, even in his latest writings. What makes a developmental account of Husserl's overcoming of psychologism so difficult is that from the very beginning he operates with an accurate description of the phenomena themselves, i.e., formal objects and relations. What he lacks is a transcendental theory of consciousness on which to ground these de-
scriptions. In the essay "On the Concept of Number", written in 1887, and in Philosophie der Arithmetik, Husserl clearly recognizes that the collective relation that unifies the elements of a set is not given in sensuous intuition. The breakthrough in the interpretation of numbers and formal objects in general comes in the Logical Investigations with the insight that not all acts of intuition are sensuous. Husserl's theory of categorial objects and his revised concept of abstraction enable him to eliminate the theories of psychological reflection and attention that he had previously employed to account for the origin of formal concepts.

A brief survey of Husserl's early treatment of the problem of logical psychology will leave us in a position to evaluate the reasons for the final turn made in the phenomenological theory of logic, the turn that leads to transcendental logic. Writing in Formal and Transcendental Logic about the critique of psychologism given in the "Prolegomena" to the Logical Investigations Husserl states:

The obscurity still generally prevalent today concerning the problem of a universal epistemological psychologism, an obscurity that affects the fundamental sense of the whole of transcendental philosophy . . . is something that, at the time, I myself had not fully overcome; though precisely the phenomenological investigations of the second volume, so far as they paved the way to a transcendental phenomenology, opened up at the same time the necessary avenues to the setting and radical overcoming of the problem of psychologism.8

He achieves this "radical overcoming" only with the elimination, via the transcendental reduction, of the naturalistic presuppositions that inform the interpretation of intentionality in the Logical Investigations. While Husserl does not reject the discoveries of this work, he recognizes the serious limitations of the science of phenomenology conceived of as an eidetic psychology. Though a priori, the investigations in the Logical Investigations are carried out within the sphere of psychological apperception. As a result, the worldly character of psychological experience is not itself examined.

The purpose of the transcendental phenomenological reduction is to make thematic the always accompanying but hidden operations in which the "world" in its manifold forms is constituted in conscious life. The transcendental turn makes clear that intentionality, the fundamental relation between consciousness and object, is not itself a "worldly" relation. It is neither a physical, nor a psychical, nor an ideal relation. Pure consciousness or transcendental subjectivity, is other than all these relations and all the relata given in them. The transcendental turn is successfully achieved only with the recognition that all sense is constituted in transcendental subjectivity, and that the meaningfulness of the world itself is a dependent part of the absolute whole which is the transcendental ego.9

IV.

Husserl's early mathematical studies were motivated by his fascination with the possibility, manifested in the course of everyday life as well as in the more specialized activities of science, of manipulating sen-
suously apprehended symbols and signs according to certain rules (mathematical operations such as addition and multiplication) and, consequently, of obtaining "truths" about numbers and number relations, the things signified. Husserl was intrigued with the fact that we reach these truths in the absence of the things signified, in a merely symbolic and hence in some sense "inauthentic" (uneigentlich) fashion. But it must be possible, Husserl insists, to trace these accomplishments back to their intuitive sources and to experience them in the presence of the things themselves. The foundation for mathematics is not to be sought in "conceptual analysis", which relies upon definitions, but rather in the intuitive clarification of the basic concepts and operations on which mathematics depends.

Husserl's method of intuitive clarification is well-represented by his account of the origin of the concept of number. Sensuous intuition gives to consciousness a presentation (Vorstellung) with particular contents (Inhalten). In the mere presentation of these contents a type of sensuous unity is perceived: one is immediately aware of "a whole with parts". Husserl terms this sensuous quality of "manyness" a figurale Moment. This immediate awareness of a "heap", a "swarm", or a "group" cannot be conflated with the apprehension of a plurality or a determinate set. A plurality is an articulated whole: each of its parts are apprehended as parts unified with one another in a whole. Hence, the parts of the whole dimly perceived in sensuous intuition must undergo a substantial modification before they are, quite literally, counted as elements of a set.

Number statements are predicated of sets, i.e., of the extensions of concepts. In speaking of "three people" one intends Tom, Dick and Harry. Now the number three has nothing to do with this group insofar as it is a group of men: "the collective is no substantial unity grounded in the content of the collected items". The character of "being three" appears nowhere in the sense-data in which we perceive Tom, Dick, and Harry. Furthermore, no matter how carefully one examines the contents of the presentation one cannot discover an essential connection between these contents which necessitates that they be grouped together as three. The "whatness" of the group remains unaltered if we substitute a coat-rack for Tom: there are still three items in the group. The collective relation constitutive of "threeness" is thus very different from the relation of similarity between these persons. It is immediately evident that the three men are essentially related to one another as members of the same species. This relation of similarity is apprehended with that which is related: there is no need to look beyond the contents of the presentation to grasp its truth. A comparison of the "idea" of Dick with that of Tom immediately yields the relation of similarity. This relation is grounded in the nature of the things compared and is given alongside the relata grasped in sensuous intuition. In accordance with the terminology he had taken over from Brentano, Husserl calls this latter type of relation a "physical relation" or a "content relation".

Since no physical relation grounds the collective union of the elements of a set, to account for the genesis of pluralities Husserl posits an explicit act of relating on the part of consciousness. Because we cannot see the "ands" that connect Tom and Dick and Harry, because they are in the things themselves, we must assume that they are provided by the mind. Husserl terms relations of this sort "psychical relations":
On the other hand there stands a second main class of relations, which is characterized by the fact that here the relational phenomenon is "psychical". If a unified psychical act is directed upon several contents, then, with regard to it, the contents are combined or are related to each other. Were we to realize such an act, then, of course, we would seek in vain, among the contents of the representation which it includes, for a relation or combination (unless in addition a physical relation were there). The contents are, in this case, unified precisely by the act alone; and the unification, therefore, can be noticed by means of a special reflection upon the act.

The psychical relation constitutive of pluralities results from an act of collective combination. Husserl reverts to this psychical act because no content-relation is forthcoming from the presentation of a plurality. The concept of plurality is not, therefore, abstracted from anything given in "outer" or sensuous perception. As Husserl comments in the Introduction to the Logical Investigations, he was forced to conclude that "the concept of collection arises through psychological reflection in Brentano's sense, i.e., through 'reflection' upon the act of collecting . . .". The act of collecting is the substratum from which the concept of the collective is abstracted. Husserl later abandons this theory of psychological reflection, realizing that the concepts of plurality and number are "basically different from the concept of collecting which is all that can result from the reflection on acts". The restriction of intuition to the empirical in "On the Concept of Number" and the Philosophie der Arithmetik, however, precludes any possibility of recognizing that formal or categorical relations and objects are themselves intuitively grasped in founded categorial acts.

So far we have examined only the act of collective connection that stands behind the "ands" linking the elements in a set. Yet as Husserl remarks in Formal and Transcendental Logic, it was in his early mathematical studies that he first observed that

... if the concepts, set and cardinal number, are fashioned purely and with the broadest universality, no part of the material contents (the what-contents) of collected elements or counted units can enter into that universality; the material contents must remain variable with absolute freedom—which obviously corresponds thoroughly to the intention of the theories of sets and cardinal numbers. The formalness of these disciplines lies, then, in this relationship to "any objectivity whatever", "anything whatever", with a most empty universality, a universality that leaves every material determination indeterminately optional.

Husserl claims, then, to have hit upon the concept of "empty form" in these early writings, a concept integral to what in Logical Investigations is called "pure Logic" or mathesis universalis and which plays an important role in the overcoming of logical psychologism. To say, for example, that the concept of a set is formally universal is to say that its extension makes no reference to any content. Likewise, the concept of number is distinguished by the fact that it can be predicated of any possible subject-concept, regardless of what it denotes. When one counts, one takes the objects counted as mere "somethings" devoid of any material
content. If this were not the case the unrestricted applicability of numbers, their formal universality, would be compromised.

How is one to account for the origin of a concept such as this that has absolutely no empirical content? In the Philosophie der Arithmetik Husserl provides the following explanation:

One must abstract completely . . . from the particularities of the individual contents collected together, at the same time, however, retaining their connection. This seems to involve a difficulty, if not a psychological impossibility. If we take this abstraction seriously, then of course the collective connection (die kollektive Verbindung), rather than remaining behind as a conceptual extract, also disappears along with the particular contents. The solution lies at hand. To abstract from something means: not paying any particular attention to it (darauf nicht besonders merken).\(^{15}\)

Husserl characterizes the act of abstraction responsible for the concept of "something" with the aid of the theory of attention taken over from the empiricist tradition. In attending to the particular presentation one successively lets go of the manifold contents that distinguish it as a presentation of something of a particular kind. If one pays no attention to the contents of the presentation, one is lead to the reflective awareness of the act of presenting as such.\(^{16}\) The formal universality of the concept of "something" derives from the fact that anything, whether actual or possible, real or unreal, physical or psychical, can become an object of consciousness.\(^{17}\) Therefore, reflection on the act of making present, apart from any content, yields this rudimentary concept.

Husserl is aware of the apparent paradox involved in deriving an empirically pure or formally universal concept from experience. At the same time he is dissatisfied with the innatist and Kantian approaches to logic and mathematics that sidestep questions of origin and evidence through appeals to "transcendental origins". As a result he is forced to treat the concept of "something" as an "external" determination, similar to a relative or negative attribute, which attaches to any possible content and derives from reflection upon the act of presenting as such. As in the case of the categorial concept of the collective, Husserl negotiates the problem of formality by appealing to the universal character of the act, i.e., an act that can collect or posit any possible content. The problem with this solution is that it is impossible to derive the objective concepts of "collective" and "something" from reflection on the subjective acts of collecting and positing—the products of these reflections should be the general concepts of these acts, not their objects. On the other hand, there is nothing intrinsically psychologistic about Husserl's use of the subconcepts of "something" and "collective combination" to analyze the content of the concept of "number". What is psychologistic is the use of the doctrine of inner perception to account for their origin.\(^{16}\) As this passage from "On the Concept of Number" makes eminently clear, a "psychical relation", contrary to what Frege supposed, had nothing to do with mental acts at all:

Every relation rests upon terms and, in a certain manner is dependent on them. But whereas, with all content relations, the variability of terms which is admissible without a change in the species of relation is limited, with the collective com-
bination, any term can be varied completely without restric-
tion and arbitrarily, while the relation remains.19

We find here something very close to what in the Logical Investigations
is termed the evidential "seeing" of the categorial structure of the col-
lective relation. The observation that the terms unified in the collective
relation can be varied indefinitely without changing the relation is a
recognition of the identity that persists through the variation of con-
tents and to that extent transcends those contents. The same type of
transcendence is implied in Husserl's description of the concept of
"something": the "something" is the identity that traverses all possible
contents of a presentation. Thus the doctrine of psychological reflection
is all that stands between this and the explicit formulation of the empty
concept of the object as such (the "anything whatever") as the inten-
tional correlate of any objectifying act of consciousness. Husserl implic-
itly recognizes that the plurality is an identity that transcends the sub-
jective act which connects the contents. Perhaps more significant, how-
ever, is the fact that Husserl describes these formal-categorial concepts
without making an appeal to anything "transcendent"--external to the
experiencing ego--and so follows his mentor Brentano in clarifying these
concepts solely in terms of the contents and character of the intentional
act.

V.

In the previous section I have argued that Husserl's "On the Con-
cept of Number" and Philosophie der Arithmetik are not psychologistic in
the broad sense--Husserl reduces neither objects to acts of conscious-
ness, nor objects to the contents of these acts, nor logical laws to psy-
chological laws or empirical generalizations--but only in the sense that
formal concepts are reduced to "predicates of reflection".20

In the "Prolegomena" to the Logical Investigations Husserl under-
takes a thorough critique of psychologism, in which he painstakingly
demonstrates that all forms of psychologism are ultimately relativistic,
and that relativism is itself a self-contradictory theoretical position, i.e.,
one that undercuts the very premises upon which it is based.21 Husserl
does not question the significance of the empirical science of psychol-
ogy; he does not regard it as an inferior or inconclusive form of in-
quiry. The findings of psychologists, however, have absolutely no bear-
ing on the content of logic and do not illuminate in the slightest degree
questions concerning the origins of the concepts and operations at
work, not only in logic, but all the purely formal sciences. In order to
show that this is true, Husserl clarifies the essential difference and
radical disjunction between factual sciences such as psychology and sci-
ences such as logic whose objects are ideal.

Mathematics and logic are by no means exhaustive of the domain
of ideal being. Perhaps the most revolutionary aspect of Logical Investi-
gations consists in its disclosure of the full breadth of the sciences of
the ideal. The science of phenomenology, as it is called in this text, "ei-
detic psychology", treats both the formal a priori objects of logic and
mathematics, and the a priori structures of the empirical sciences, whose
objects have a "material" content. Nevertheless, the aim of eidetic psy-
chology is first and foremost to articulate the full scope of the formal a
priori, since this is the frame within which all other a priori analyses

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are set. This overarching science of the formal a priori is what Husserl means by "Pure Logic".

"[p]ure" or "formal Logic" is for me only a title introduced to aid in understanding historical traditions and tendencies; one joined to a certain class of propositions which are called "logical" in the fullest sense; and of which I sought to show the following:---that they point to a distinct discipline which is a priori and independent of all psychology, and that this discipline, through a natural extension, also takes in formal mathematics (its theories being a priori, and foreign to psychology in the same sense), and is ultimately identical with mathesis universalis in the generalized sense coined by Leibniz.22

Pure Logic investigates the form of theoretical thinking. It is the science that studies the most fundamental formal categories and formal laws that govern the thinking of the "empty anything whatever", of any and all objecta regardless of their material content. "The Idea of the pertinent 'form' of theory arises", according to Husserl, "if we substitute variables for these given elements, whereby concepts of concepts and of other Ideas, replace straightforward concepts. Here belong the concepts: Concept, Proposition, Truth, etc."23

This pure Logic has two aspects, which are distinguished according to the two "focusing" it is possible to assume with respect to cognition.

In judging we are directed, not to the judgment, but to the "objects-about-which" (the substrate-objects) currently intended to, to the predicates (that is, the objectively determining moments) currently intended to as grounds and the correlative predicational affair-complexes as consequences; and so forth. At any time, however, a change of focus is obviously possible, such that we make our judgments, their components, their connexions and relations, the theme.24

We have, on the one hand, the "subjective" focusing, the focusing on judgments, which reveals the "elementary connective forms" that obtain between basic "meaning-forms" or "signification-categories". This study of the judgment-form, formal apophantics, is an extension of traditional syllogistics and investigates "all the concepts that concern the structure of judgments, simple and complex, and naturally also ... the concept of truth".25 Formal apophantics examines the basic forms of the proposition (conjunctive, disjunctive, hypothetical, etc.), the part-forms constitutive of propositions (subject and predicate forms, plural forms, connective forms), and the basic forms of inference (e.g., modus ponens and modus tollens). Correlative to these basic thought-forms are the "formal objective categories" "such as Object, State of Affairs, Unity, Plurality, Number, Relation, Connection, etc."26 This second aspect of formal Logic focuses on the purely formal correlates of formal apophantics, and is properly termed "formal ontology", i.e., the formal theory of object-categories.

The formal categories of pure Logic are not general concepts and hence are not the products of generalizing abstraction. In the 2nd Investigation of the Logical Investigations Husserl engages in a lengthy
critique of empiricist theories of abstraction, (in particular, the theory of attention that we saw at work in "On the Concept of Number" and Philosophie der Arithmetik), and the nominalist interpretations of universals to which they give rise. The introduction of the new theory of "ideative abstraction" enables Husserl to account for the grasping of essences, of which the purely formal categories of mathesis universalis are a species.

Husserl argues that essences do not stand in a direct relation to the factual instances of themselves. The gulf between them is the gulf that separates the ideal from the real, the eidetic from the factual. The proposition "A or B" is not the genus of the empirical utterance "Red or Blue". Yet this is precisely the argument of logical psychologism: the judgment-form "A or B" (and its logical equivalent "not A and B"), it supposes, is merely a highly refined empirical generalization of the psychic act of excluding the thought of one mental content from the thought of another. "The basic error of Psychologism consists . . . in its obliteration of this fundamental distinction between pure and empirical generality, and its misinterpretation of the pure laws of logic and the empirical laws of psychology". The very possibility of eidetic psychology and the type of a priori studies carried out in Logical Investigations rests on this insight into the essential difference between the factual and the eidetic registers.

Nominalists argue that the universal is no more than a general name. There is no correlate to this general name outside of the many individual things we associate with it on the basis of the similar qualities they possess. The term 'Redness', for example, is interpreted as a tag which signifies a similar quality perceived in many individuals. The abstract idea signified by the general name arises when we attend to an aspect of a thing—the attribute in question—while progressively eliminating whatever individuates that aspect. In the case of the idea of redness, the fact that I am attending to the redness of this particular book, and this redness is extended over a certain amount of space, that this red's hue and intensity vary, etc., all these individualizing factors are ignored.

From this it can be seen that the theory of attention posits "no difference between the meaning of the individual which pertains to the intention of proper names, and the meaning of the universal which attaches to the names of attributes". Whether one means the singular thing (the red book) or the universal attribute (the redness of the book), it is the same concrete whole, the same set of contents, that one attends to: the difference is said to lie only in which contents are attended to.

But this account runs counter to what we actually mean when we refer to a universal, as when we judge, for example, that two things are the same in some respect, e.g., in being red. The color red, as an attribute, is what Husserl calls an abstract or non-independent part of an individual or concrete whole. Redness does not "exist apart" but is dependent on some ousia. If, as the empiricist insists, we restrict ourselves to examining the phenomenal contents of our presentation, drawing on nothing other than what we actually experience, Husserl notes the following: that if we compare this red with that red, we discern a manifest difference in the content of what is experienced. One never perceives exactly the same red, i.e., the identical content, when con-
fronted with two red things. What this implies is that the sameness I think about when I make the judgment "Both books are red" does not reside in the contents of the presentation(s) of the two books. The empiricist fails to recognize that what we judge about or perceive is not identical with that which is sensed. In fact, thematic awareness of one's sensations arises only in a peculiar act of reflection, one that we rarely avert to in our everyday experience.29 We do not make judgments about sensed contents: we make them about meant objects. The meaning "being red" not only transcends the sensed contents of the act in which we perceive two books, but enables us to posit the identity of these contents. Objects, in other words, are not merely given to or impressed upon the mind, and cannot, therefore, be reduced to patterns or complexes of sensations; objects are constituted or interpreted as being what they are in acts of meaning.

Husserl had already recognized in Philosophie der Arithmetik that the act of attending can be directed upon any possible object of consciousness.30 When the crucial distinction is made between the phenomenal content of a presentation and the object meant in the act, we find in the concept of attention the bare outline of the concept of intentionality. But consciousness can attend to far more than individuals. When I attend to the redness of a book my consciousness is directed toward the individual instance of the color. The color is perceived as an attribute of the concrete whole, the book. When I compare the redness of two books lying side by side I am attending to something universal that these two objects have in common. It is quite possible, however, to attend to Redness itself—not to this or that red, but to the Species that transcends and is the identity of these instances. In grasping the Species, however, we take leave of the individual instance.

Thus we directly apprehend the Specific Unity Redness on the basis of a singular intuition of something red. We look at its moment of red, but we perform a peculiar act, whose intention is directed to the "Idea", the "universal". Abstraction in the sense of this act is wholly different from mere attention to, or emphasis on, the moment of red; to indicate this difference we have repeatedly spoken of ideational or generalizing abstraction.31

What distinguishes the act of attending to the red that is a non-independent part or moment of some individual thing from the act of awareness that presents the Species Redness is not the contents of the presentation itself, since the same intuition serves as the "matter" for both acts: we must look for the difference in the object of consciousness on the side of the act. "While the red object and its emphasized aspect of red appear before us, we are rather 'meaning' that single identical Red, and are meaning it in a novel conscious manner, through which precisely the Species, and not the individual, becomes our object."32 An ideative abstraction a new object appears: we no longer have before us the individual but directly intuit the species or the essence itself. This essence does not appear "next to" or "in place of" the moment of redness in the individual thing, but as the eidos that is exemplified by this instance and of which an infinite number of possible instances could serve as examples. Thus the example serves as the perceptual foundation for the "appearance" of the universal:
Where general thoughts find fulfillment in intuition, certain new acts are built on our percepts and other appearances of like order, acts related quite differently to our appearing object from the intuitions which constitute it. This difference in mode of relation is expressed by the perspicuous turn of phrase employed above: that the intuited object is not here itself the thing meant, but serves only as an elucidatory example of our true general meaning. But if expressive acts conform to these differences, their significative intention will not move towards what is to be intuitively presented, but towards what is universal, what is merely documented in intuition. Where this new intention is adequately fulfilled by an underlying intuition, it reveals its own objective possibility or "reality" of the universal.33

The mere significative intention in which the Species Redness is emplytly intended finds its fulfillment in the intention of the Species itself. To the meanings of all general concepts correspond ideal essences. "Just as the datum of individual or empirical intuition is an individual object, so the datum of essential intuition is a pure essence".34 In the case of a material essence such as Redness, a perceptual act that presents an individual red thing is required for the act of eidetic intuition. The essence is not existentially dependent on the individual; the act of ideation does, however, discover the universal "in" the individual. In Ideas this process of adding the universal from the individual example is called "free variation". In ideative abstraction the individual presentation is used as a mere example or illustration of the meant concept's horizon of possibility.35 What we mean or intend is the universal. Holding this meaning before the mind we apperceive how it is fulfilled in the example made present in intuition. What fulfills our meaning-intention is not the individual percept, but the range of pure possibilities instanced in and conceivable on the basis of this presentation. "The 'generality of the word' means, therefore, that the unified sense of one and the same word covers . . . an ideally delimited manifold of possible intuitions, each of which could serve as the basis for an act of recognitive meaning endowed with the same sense".36

Essences are ideal; they are independent, ontologically and psychologically, from real being. This ontological independence is attested to by the difference in the mode of self-givenness between ideal and real beings. Ideal beings "... have no temporal loci to bind them individually. Merely because of an essentially possible alteration of attitude or focus, any clear explicit recollection of an ideal species changes into a perception of it—something naturally excluded in the case of temporally individuated objects".37 In other words, while one can remember five different red objects as they appeared perceptually at some time in the past, one cannot remember either the number Five or the species Redness. Neither Five nor Redness is temporally or spatially individuated and as such, when it becomes the theme of consciousness it is always present itself and not as the correlate of any intentional modification.

This phenomenological difference between the modes of appearance of ideal and real objects points to the impossibility of reducing the act of ideative abstraction to the process of empirical generalization. The meaning-content of the universal, Redness, cannot be fulfilled in the consciousness of this concept's extension. The meaning of Redness is not reducible to the similarity perceived between all red things. Indeed, re-
cognition of similarity is possible only because a self-identical Species transcends the presentations in which the similarity is perceived and serves as the measure of their likeness. Since induction or empirical generalization presupposes a capacity to recognize similar instances, there is a circularity involved in equating this comparative process with the abstraction of universals. The real possibilities that obtain between states of affairs and individuals are discovered in induction. On this basis, the meaning of the concept and, correlative, the range of the concept's extension are modified. The essence, on the other hand, functions prescriptively as the a priori horizon of the concept's possible extension. In the intuition of essences we learn nothing about the facts of the world; we merely recognize the ontological space in which those facts may be realized.

The general concept Redness has its meaning-intention fulfilled in a material essence. Material essences arise from acts of ideative abstraction directed at sensuously given objects or object-moments. Essences of this sort do not enter into the pure formal science of matheesis universalis. While purged of all references to individual or factual being, the material essence retains a content derived from perception. This empirical residue limits the a priori field of applicability of the material essence to real being, i.e., spatio-temporal being.

Formal essences, on the other hand, essences such as Object as such, State of Affairs, Aggregate, Relation, etc., are at once ideal and empty of content. As a consequence they extend necessarily and with formal universality over all possible being. For this reason the study of formal essences results in a formal ontology, by which is meant the science of the a priori possibilities of being as such.

Formal essences emerge thematically in acts of ideative abstraction directed towards categorial objects. Categorial objects are the correlates of the formal components of meaning-intentions. So far we have analyzed the act of ideation that takes a sensuously given object-moment (the color red in an individual) as its target. We have seen that just as the meaning-intention directed at the individual "this red" is fulfilled in the percept of some red object, so the general meaning Redness is fulfilled in the intuition of the pure possibilities documented by any perceptual example of any red object. In the 6th Investigation of the Logical Investigations Husserl forwards the thesis that nominal or nominalized terms are not the only meanings that are fulfilled in intuition. The name is certainly the core term around which adequation or fulfillment is achieved, and furthermore, perceptual objects are in an important sense the foundations of all higher order nominal intentions. But names are only partial aspects of the fundamental unit of thought, the judgment. We need only to consider a simple complete judgment to see that the complex meaning-intention it involves is not exhaustively fulfilled in sensuous intuition. Husserl takes for his example the judgment "Gold is yellow":

In a judgement, a predicative statement, "is" functions as a side of our meaning, just as perhaps, although otherwise placed, "gold" and "yellow" do. The is itself does not enter into the judgment, it is merely meant, significatively referred to, by the little word "is". It is, however, self-given . . . in the fulfillment which at times invests the judgement, the becoming aware of the state of affairs supposed.
The "little word 'is'" is certainly meaningful: it is not extraneous to the judgment. As a meaning it tends of its own accord to move toward fulfillment. But what exactly is the role played by the meaning-intention of "is" when we stand in the presence of a piece of gold and register the fact that it is yellow? Husserl recalls Kant's dictum "Being is no real predicate" to emphasize that being is not something that appears really, i.e., to the senses. While we do not sense the correlate of the meaning-intention of "is" the way we sense a piece of gold, we are nevertheless conscious of the "becoming present" of the state of affairs corresponding to our intention. The meaning of being, so easily glossed over because of our involvement with things seen, heard, and touched, resides principally in this becoming present that attends the conscious-ness of any object or state of affairs.

Categorial intuition is the registration of the "objectivating" function of any formal component of meaning-intentions.

What holds of 'being' is plainly true of the remaining categorial forms in our statements, whether these bind the constituents of terms together, or bind terms themselves together in the unity of the proposition. The 'a' and the 'the', the 'and' and the 'or', the 'if' and the 'then', the 'all' and the 'none', the 'something' and the 'nothing', the forms of quantity and the determinations of number etc.—all these are meaningful propositional elements...

While we could never find the correlates of these meanings in the "sphere of objects of possible sense-perception", the mere fact that they are meanings points to the existence of corresponding intentional acts. And since all intentional acts have objects, it is possible to attend to the fulfillments of our judgments to "see" these categorial forms and to identify the base from which formal concepts are abstracted.

A considerable shift has occurred in Husserl's thinking. In "On the Concept of Number" and Philosophie der Arithmetik formal concepts are said to arise from an act of reflection upon the mental acts of posit-ing, collecting, separating, etc. Husserl does not deny the existence of these same acts in Logical Investigations. Indeed, categorial forms appear for the first time as a result of these higher categorial acts of consciousness. The simple relationship between a part and a whole, for example, is "produced" by a categorial act that isolates the part as a part. Categorial forms, in other words, are not given originally in the contents of a perceptual presentation. The ideal relation between the part and the whole is actualized (though not made "real") in the act that thematically differentiates the part from the whole. These articulating, categorial acts are characterized as founded, which means that they are dependent on straightforward acts of perception which, in presenting primary, i.e., sensuous objects, provide the strata to be articulated and modified.

In the Logical Investigations, then, the act of collective combination is interpreted as a categorial act which brings forward out of the presentation given in perception (or imagination or memory) the conjunctive relations that constitute the plurality. "An aggregate, e.g., is given, and can only be given, in an actual act of assembly, in an act, that is, expressed in the conjunctive form of connection A and B and C
But while the categorial act is responsible for the constitution of the form that was merely latent in the sensuously grasped object(s), it is not from these acts themselves that we abstract the concepts of categorial objects. "But the concept of Aggregate does not arise through reflection on this act: instead of paying heed to the act which presents an aggregate, we have rather to pay heed to what it presents, to the aggregate it renders apparent in concreto, and then to lift the universal form of our aggregate to conceptually universal consciousness". The act of ideative abstraction is directed toward the self-identical categorial object. The general rule is as follows:

Not in reflection upon judgements, nor even upon fulfillments of judgements themselves lies the true source of the concepts State of Affairs and Being ... Not in these acts as objects, but in the objects of these acts, do we have the abstractive basis which enables us to realize the concepts in question.

What is clear from this passage, though it should be stressed, is that the categorial object, while ideal, is not universal, i.e., it is not the formal essence itself. The categorial object registered in categorial intuition must be detached, in the act of ideation, from the "intelligible matter" that binds it to its founding percepts.

As the science of essences, eidetic psychology elaborates the a priori relationships of compatibility and incompatibility that obtain between essences, whether material or formal. Essential relationships are likewise grasped in ideation. Factual instances of a relation can serve to exemplify the a priori relation. But merely imagined examples can serve the same purpose, since the a priori relation is one of pure logical possibility.

Compatibility does not pertain to dispersed individual specimens, but to the Species of contents. If, e.g., the moments of redness and roundness have once been found unified, a complex Species is at once reached by ideative abstraction, and can hence with be given, which embraces both the Species of redness and roundness in its specifically grasped form of combination. It is the "ideal existence" of this complex Species to which the compatibility of redness and roundness, in each thinkable instance, has its a priori foundation, a compatibility which is an ideally valid relationship whether empirical union occurs anywhere in the world or not.

It is interesting to note the essentially Platonic line of Husserl’s thinking. The analysis in the Sophist of the combinatory possibilities of the "greatest kinds" moves at the level of eidetic generality (even if the distinction between formal and material universality is not clear). That the statement "Theaetetus is flying" is necessarily false, that it represents an a priori falsehood, is demonstrated in the dialectical showing of the ideal incompatibility of the eidos Flying and the eidos Human Being.

Husserl’s own ascent to the eide, however, has a distinctly modern genealogy. The insight into the nature of ideal Species relations and with it the "dissociation from psychologism" is given this explanation in the 1913 Introduction to the Logical Investigations:
This transformation was prepared by the study of Leibniz and by the considerations occupying me ever anew of the sense both of the distinction between truths of reason and truths of fact and also at the same time of Hume's exposi-
tions concerning knowledge about "relations of ideas" and "matter [sic] of fact". I became keenly aware of the contrast between this latter distinction and Kant's distinction be-
tween analytic and synthetic judgments, and this became important for the later positions which I took.48

All essential relationships are a priori. It is instructive to examine why it is Hume rather than Kant that Husserl follows in his characteri-
зation of a priori knowledge. Kant, of course, isolates universality and necessity as the logical criteria of all a priori knowledge. An analytic judgment, a judgment whose predicate-concept is contained in the thought of its subject-concept, is a priori because 1) it states a neces-
sary truth, i.e., its denial would violate the principle of non-contradic-
tion, and 2) it is universal, i.e., it requires no appeal to experience for its validation. Analytic judgments, however, are tautologies: they merely explicate what is already implied by the subject-concept. The burden of the Kantian project is to justify the existence of synthetic a priori judgments, judgments that are at once universal and necessary, and am-
pliative, i.e., add to our knowledge of the subject-concept. Since in Kant's view the legitimacy of the sciences is dependent on the possibil-
ity of synthetic a priori knowledge, there follows his elaborate transcen-
dental justification of the possibility of this species of judgment.

By contrast, Hume's insight was that by simply inspecting the "ideas" given immediately in our representation of some object or state of affairs (some complex whole), we can determine the "essential-belong-
ing-together" of these ideas. A priori knowledge is founded on the ex-
amination of the immanent contents of our experience. There is no need to appeal to any higher ground to validate a priori judgments because their eidetic character is documented in self-evidence. In A Treatise of

Human Nature Hume states the general principle behind this insight: "That what the mind clearly conceives includes the idea of possible ex-
istence, or in other words, that nothing we imagine is absolutely impos-
sible".49 Whatever the mind is capable of thinking together "clearly", i.e., not merely significatively, but in an evidential "seeing", is a possi-
ble relation or state of affairs whose possibility is grounded a priori. Or as Husserl says:

Since the actuality and likewise the possibility—the conceivability—of something existent of any sort derives the originality of its sense only from actual or possible "experi-
ence", I must ask experience itself, or clearly phantasied possible experiencing, what I have in it as something experienced. Here "experience" signifies, with the necessary universalization . . . giving of something-itself, evidence as such . . ..50

The Kantian conditions of the a priori are still fulfilled: the relation be-
tween the ideas is universal, because it is grounded in terms of the ideal possibility of their union (i.e., regardless of whether or not any such relation obtains "in reality"), and yet it is necessary, because it is impossible to conceive of a factual violation of this relation.51
It is this concept of the a priori that Husserl exploits systematically in his development of a mathesis universalis. Its special significance lies in its articulation of the intuitive basis of the a priori. With his notion of eidetic intuition Husserl demonstrates that formal logic is grounded in evidence, and as such qualifies as genuine knowledge. Logic ceases to be an empty, tautological science because its truths are verified in the intuitions of the things themselves.

VI.

As our look at the 6th Investigation has shown, pure Logic is directed toward categorial formations, towards the formal meaning-complexes and formal object-complexes, that appear for the first time in founded acts of cognition. The reflective analysis of these founded acts likewise points to the interdependence of formal apophantics and the formal theory of objects, since we learn that these fields trace their origins, respectively, back to the two correlative aspects of the categorial intention, the empty meaning-intention and the fulfilling intention in which the formal object becomes "itself present".

In Formal and Transcendental Logic the two-sided character of logic is examined at length, and in particular, we find a clarified and refined account of the nature of the relationship between formal apophantics and formal ontology. The distinction Husserl makes is a philosophical, as opposed to a logical, one. It is philosophical because it becomes thematic only in reflection. This has already been alluded to above where we identified formal apophantics and formal ontology as the correlates of different "focusings" taken towards cognition. The explicit recognition and description of the difference between these focusings in the work neither of the mathematician nor the logician, both of whom assume a non-reflective or straightforward stance towards the objects of their respective disciplines. Philosophical questions concerning their origin, ontological status, relation to consciousness, etc., occur when thinking reflects on itself: they have no bearing on the logician's ability to perform complicated deductions or the mathematician's ability to solve complex equations. But why? Because, according to Husserl, the successful execution of a logical proof or derivation of a mathematical formula entails no "interest in knowing". By knowledge, Husserl means cognition grounded in evidence, i.e., fulfilled in the actual presence of what is meant. Ratiocination, however, can operate independently of the critical turn that leads to verification in evidence.

To illustrate this point, let us look closely at a logical proof and attend to the character of the cognition involved in its solution.

1. \((A \cdot B) \Rightarrow (C \cdot D)\)
2. \(B \Rightarrow \neg D / \text{therefore } \neg A \lor \neg B\)

Two premises are provided and we are asked to derive the conclusion \(\neg A \lor \neg B\). We note first of all that the premises and the conclusion are purely formal: for the letters A, B, C, and D we could substitute any possible material content. As logicians we are interested exclusively in the form of these judgments, the form that holds good for all possible instantiations of their terms.
We have at our disposal a number of rules that allow us to transform the specific forms of these propositions without affecting their formal meaning-contents. We know, for example, and could prove that the proposition \( \neg A \lor \neg B \) is logically equivalent to the proposition \( A \supset \neg B \). In addition to transformation rules such as this, we are acquainted with a set of inference rules (developed in traditional syllogistics and formalized in propositional calculus) that dictate what may be inferred from what solely on the basis of the forms of the propositions. These rules enable us to bring forth the following deduction as a demonstration of the validity of the conclusion given above.

3. \( A \) therefore \( \neg B \) (conditional proof)

4. \( B \) (indirect proof)

5. \( \neg D \) 2, 4 (modus ponens)

6. \( A \cdot B \) 3, 4 (conjunction)

7. \( C \cdot D \) 1, 6 (modus ponens)

8. \( D \) 7 (severence)

9. \( \neg D \cdot D \) 5, 8 (conjunction)

10. \( \neg B \) (inference from indirect proof)

11. \( A \supset \neg B \) (inference from conditional proof)

12. \( \neg A \lor \neg B \) (conditional exchange)

During the entire course of this proof, we hold the propositions in an objective focus. In other words, though each proposition is a judgment-form and as such, a compound of signification categories, in solving the problem we never actively take these propositions as meaning-unities, i.e., as words that signify corresponding objects and states of affairs, but merely as propositional objects that through consistent, rule-governed manipulation will yield up a conclusion (whose "significance" is equally irrelevant to the proof). Because we never quit the focus in which propositions are taken as objects, because, in other words, logical cognition begins and ends with empty meaning-intentions taken as objects, the question of truth in the pregnant sense, truth as evidence, never becomes a concern. The entire set of operations occurs within a stratum of cognition whose parameters are fixed exclusively by the law of non-contradiction. The proof is "true" only in the sense that it is consistent. No evidential fulfillment of cognition takes place because we never assume a critical attitude with respect to the intended objects (the propositions), i.e., we do not transform the proposition judged about straightforwardly into a supposition about some possible state of affairs.

The analytic logic of consistency or inconsistency is properly termed a "formal mathematics". This is not because it deals exclusively with quantities, but because its object is the a priori relationships between apophantic senses as determined by the law of non-contradiction. The fact that apophantic logic itself makes no critical turn does not im-
ply that it has no bearing on interested cognition. Indeed, the philo-
sophical definition of a proposition is a state of affairs as supposed. The
difference between the apophantic formation and the formal object-com-
plex points in general to the difference between language and being.
Neither exists independently of the other. Meanings are constituted; they
function as predelineations or interpretations of what appears (or may
appear). Being is the correlate of meaning; it is the manifestation of
what is meant. Formal apophantics delineates the essential forms of pos-
sible meaningfulness by dictating a priori what kind of "distinctiveness"
meanings must achieve for objectivities to be given as possible corre-
lates. It prescribes rules of logical, as opposed to grammatical, syntax.
It fails short, however, of telling us anything about objectivity itself.
For this reason,

The aforesaid pure mathematics of non-contradiction, in its
detachment from logic as theory of science, does not de-
serve to be called a formal ontology. It is an ontology of
pure judgments as senses and, more particularly, an ontolo-
y of the forms belonging to non-contradictory—and, in
that sense, possible—senses: possible in distinct evidence.
To any possible object there corresponds its object-sense. 
Every sense-form pertaining to possible objects naturally
occurs among the possible sense-forms dealt with by "extra-
logical" mathematics. But the ... possibility of a sense-form
[as distinctly non-contradictory] does not contain, in and of
itself, the least possibility of objects with a sense corre-
sponding to it; and indeed even this "corresponding" itself
takes us beyond the sphere of pure senses.54

The mathematics of judgment-forms, the "propositional calculus", is
by no means identical with the pure Logic introduced in the Logical In-
vestigations. As the critique of the possible forms of science and hence
of the limits of factual investigations, pure Logic is directed to or inter-
ested in the objects corresponding to the pure senses of apophantic
logic. It moves beyond questions of consistency and distinctness and in-
quires into "the possible categorial forms in which substrate objectivi-
ties can exist".55 Formal ontology is not something separate from formal
apophantics; the difference lies in the attitude assumed towards the
judgment. As in our naive involvement with everyday objects where the
act of judging or meaning is itself not noticed, so in formal apophantics
one is directed through the meaning acts themselves towards the ob-
jects-intended, i.e., the sense-forms or propositions. These are both
cases of straightforward judging, the kind of judging in which the rela-
tionship between empty acts of signification and their correlative acts of
fulfillment are not made thematic.

The formations with which logic is concerned and their uni-
iversal forms are given at first in a straightforward evi-
dence; and this comes first necessarily. But now a thematiz-
ing reflection on this evidence is demanded: a reflection,
that is, on the formative activity, which has heretofore been
carried on straightforwardly and naively, without becoming
a theme.56

The reflective analyses of intentional acts in the 6th Investigation
represent clear attempts at phenomenological reflection. The two-sided-
ness of intentionality is identified both in the description of categorial
objects and of ideational abstraction. But Husserl came to regard these analyses as inadequate; he speaks of the "naiveté" or "positivity" that pervades them and that leaves the account of the relationship between the act of consciousness and its object, between the judgment and the categorial object, "psychologistic" in a fundamentally new way.

Only the thoughts of a much later period made it clear to me that if the naiveté of every positive sciences (including the mathesis universalis in the naive treatment as a positivity directed straight toward the envisioned ideal) required an epistemological "clarification"—i.e., required a deeper grounding of the justification and limits of its authenticity of sense and required the systematic study of subjective and intersubjective modes of cognition that are essentially inseparable from objective ideals—then no positive science of any sort can justify itself. These later thoughts also made it clear to me that only a science that is grounded from the very beginning upon "transcendental phenomenology" and that flows from it to the principal original sources can correspond to the full ideal of an absolutely justified knowledge.57

The shortcomings of the Logical Investigations lie not in its critique of logical psychologism: the recognition and consistent defense of ideal objectivities necessarily precedes the raising of transcendental questions about logic,53 and is thus the first step towards the "radical self-understanding and fundamental self-justification"59 of pure Logic. The problem derives from the inadequate conception of consciousness operative in that work. Transcendental psychologism infects all thinking that occurs outside of the sphere of reflection opened up by the transcendental reduction. The final turn on the way by ontology leads thinking beyond this "universal epistemological psychologism" which stands as the last barrier to a genuine philosophical science.

The contention of Logical Investigations is that an a priori pure psychology or a phenomenological psychology can be established by limiting reflection to "intentional mental processes (those given in pure 'internal' experience), to their essential forms (which become themselves-given in internal eidetic universalization, and likewise to purely psychic abilities . . .)"60 The ideal formulations of logic result from acts of eidetic abstraction directed towards categorial objects. These categorial objects are themselves ideal, in the sense that they are atemporal; they are distinguished from essences, which are not only atemporal, but are phenomenologically independent of real being, i.e., are not "founded" on the sensuously given. The overcoming of logical psychologism is accomplished in this clarification of the absolute separation of the ideal from the factual.

In the Logical Investigations intentionality analyses are performed, but the meaning of the intentional relation itself is not brought into reflective focus. As a result, intentionality is tacitly assumed to be the activity of real psychic consciousness, whose correlative aspects are described in psychological reflection. "[In psychology, 'psychic phenomena'—more precisely, psychological Data—are Data within the already given world; that 'internal experience' is a species of worldly, 'Objective' experience . . .]."61 In other words, because the meaning of intentionality is not itself clarified, a "worldly" or "mundane" content enters
into the description of that which reflection discloses. The phenomenological investigations in the *Logical Investigations*, in failing to make this worldly content thematic, succumb to transcendental psychologism.

In this psychologico-phenomenological judging, a psychological apperception is performed, though what is intentionally co-posted by this apperception, namely, the relation to the organism and thus to something worldly, does not enter expressly into the conceptual content of the judging. Still the psychological apperception has its determining effect on the sense and must be consciously "parenthesized" in order for that content (which is not itself altered by the parenthesis) to acquire *transcendental significance*.¹²

The overcoming of transcendental psychologism depends on an explicit recognition of the difference between transcendental apperception and psychological apperception. The fact that psychological reflection is "worldly"--the content of this recognition--does not dissolve or invalidate the distinctions made in straightforward intentional analyses between the real and the ideal, the factual and the essential. It does, however, lead to the insight that these distinctions are not the final conditions or limits of our cognition of the world, but are themselves meanings constituted intentionally. The meaning of being can be reduced to neither the real nor the ideal, the factual nor the essential. A turn must be made to the logos, to the constitutive acts of transcendental subjectivity, which in making present both the real and the ideal, stands as their condition of possibility.⁶³

Since the real psyche is itself a constituted transcendency and since the data apperceived in psychological reflection retains a worldly content, psychology, as the science of the psyche, is ultimately dependent on the science of transcendental subjectivity. This holds true for empirical psychology, but more importantly, for the pure phenomenological psychology of the *Logical Investigations* as well. Thus pure Logic, the offspring of a priori psychology, is not the final science of being. Pure Logic, with its account of the conditions of possibility of theoretical cognition in general, of the a priori laws that formally underlie all positive sciences, must itself be justified. What is the condition of possibility of pure Logic itself? Logic does not justify itself transcendentially and to that extent remains "positive". As something positive, however, it points back to its constitutive source in transcendental subjectivity.

The truly fundamental cognition in this connection—a cognition foreign to all previous psychology and all previous transcendental philosophy—is that any straightforwardly constituted objectivity... points back, according to its essential sort... to a correlative essential form of manifold, actual and possible, intentionality, ... which is constitutive for that objectivity.⁶⁴

In *Formal and Transcendental Logic* we are led to see that the whole of objective logic, which Husserl has systematically extended as a *mathesis universalis* and whose twosidedness has been phenomenologically clarified in terms of empty and fulfilling intentions, in an index pointing beyond itself to the truly comprehensive whole that is transcendental subjectivity.⁶⁵ The study of the formal structure of meaning—
fulness and objectivity as such gives way at this point to the study of the primordial domain of the essential logoi of the transcendental ego. The final regression to the theory of "logical reason", of the theory that "show[s] its ultimacy by showing that it can answer the question of its own possibility", has been prompted by the recognition that logic itself, which we have so carefully differentiated and freed from factual being, presupposes the world.

This presupposition is evident only from within the sphere of reflection created by the transcendental reduction. Clearly, this presupposition of the world is not due to the fact that logical concepts are grounded in real psychic acts or bear reference to real being: we still maintain the veracity of the Logical Investigations' theories of categorial intuition and eidetic generalization, and the insight into the nature of logical formations they establish. What the transcendental reduction allows us to see for the first time, however, is that the possible world in which logic is at home and which logic articulates as the limit of the actual world, is nevertheless a world, i.e., something given. "[T]he relation of logic to an a priori possible world, no matter how that relation came into logic, signifies a presupposition, and one with no less importance of the critic than the presupposition of the de facto world." By calling into question all that is given beforehand, by granting no standpoint or criterion validity outside of its acceptance by oneself, one reveals to oneself the sedimented or hidden (Husserl also calls them "anonymous") intentional performances that constitute even the truths of logic.

To fully understand the transcendental significance of logical concepts, one must, as Husserl does in Experience and Judgment, inquire into the genetic history of intentional performances that transform originally given prepedicative experience into simple perceptual judgments, these into higher-order empirical generalizations, these latter into judgments about material essences, and finally, a priori material judgments into a priori formal judgments. It is necessary, in other words, to develop a fundamentally new "transcendental aesthetic". Whereas Kant's transcendental aesthetic investigates the forms of givenness demanded by the experience of Objective Nature (Nature as the idealized, categorically-formed product of the positive sciences), the transcendental phenomenological aesthetic returns to the lived-world, to "Nature" as actually experienced, and reflects on the passive forms of givenness presupposed by pure phenomenological experience itself. From out of the lifeworld, from the lived time-flow and kinaesthetic orientation of the transcendental ego, the unity of the world as a possible substrate for categorial experience is passively constituted. In the absence of investigations directed at uncovering the acts constitutive of straightforwardly given perceptual objects, the sensusus world, on which all categorial objects and essences (material and formal) are genetically dependent, appears as an unexplained, unsupported given, and scientific knowledge again ceases to be grounded in philosophical evidence.

ENDNOTES

2 Plato, *Sophist*, 249c.


7 This interpretation of the *noema*, one that I assume in this essay, is found in Sokolowski's article "Intentional Analysis and the Noema". "The word 'noema'", he writes, "is only used from the transcendental standpoint. It is not a sense or a concept or a proposition, not something taken as proposed. It is also not a structural part of an intentional act. It is the objective correlate of an intentional act or state, but it is this objective correlate as contemplated from the phenomenological point of view". *Dialectica* 38, No. 2-3 (1984), 128. It should be noted that this interpretation of the *noema* is disputed by Husserl scholars who have followed the position outlined in Gurwitsch's *The Field of Consciousness* (Pittsburgh: Duquesne University Press, 1964), 173ff.

8 Edmund Husserl, *FTL*, i52.

9 In his article "The 'Logic' of Husserl's Transcendental Reduction", Timothy Stapleton argues that the transcendental reduction itself may be interpreted as a radical implementation of the logic of parts and wholes developed in the *Logical Investigations*. "The movement from part to whole", he writes, "from abstractum to concretum, constitutes 'eidetic rationality'. What it involves is a quest for ultimate concreteness, for the ultimate whole" (373). The absolute concretum, that whole which itself is founded on no prior whole, is transcendental subjectivity. *Man and World* 15: 369-82 (1982).

10 Husserl, *Intro.*, 34.


14 Husserl, *FTL*, 87.


15 Husserl, PA, 80.

17 This insight is carried over into Logical Investigations: "Anything, everything can be objectified as a thing meant, i.e., can become an intentional object". 4th Investigation, 507.


19 Husserl, OCN, 114.

20 The term is borrowed from DeBoer who notes: "This is a different and separate form of psychologism because it does not involve a psychologizing of the content to an act; the reduction concerns only the formal aspect of a content." See DeBoer's The Development of Husserl's Thought, 116.

21 "Two ways can be taken to overcome psychologism. One can 1) follow out the contradictory consequences in which psychologism, as an absurd relativity or anthropology and scepticism, gets entangled. 2) One can, through a direct analysis of the prejudices that mislead psychologism, demonstrate the unsoundness of its position". "On the Psychological Grounding of Logic" in Husserl: Shorter Works, 146-7.

22 Edmund Husserl, "A Reply to a Critic of My Refutation of Logical Psychologism" in Husserl: Shorter Works, 152. In this "Reply" Husserl responds to criticisms of the Logical Investigations that had been raised in Melchior Palagyi's 1902 publication Der Streit der Psychologisten und Formalisten in der Modernen Logik.

23 Edmund Husserl, Logical Investigations, trans. J.N. Findlay (Humanities Press, 1970), 237; referred to hereafter as LI. The process of substitution that yields purely formal concepts is termed formalization. Remarking in FTL on the history of formalization, Husserl notes that while it is Aristotle who introduces the idea of form into the study of judgments, thereby creating the branch of formal logic called "syllogistics", his logic is not altogether empty of material content. Aristotle's "first philosophy" is not, therefore, a formal ontology, but rather a "universal ontology of realities . . ." (FTL, 80). It is only with the development of algebra, as the purely formal science of quantities essentially distinct from geometry and mechanics (both of which retain a material content), and finally with Leibniz's concept of mathesis universalis, that one discovers the idea of a science that "... has thrust off completely every restriction to even the highest material filled universality" (Ibid.).

24 Husserl, FTL, 112.

25 Ibid., 88.

26 Husserl, LI, 237.

27 Husserl, "A Reply to a Critic . . .", HSW, 156.
"That an appropriate train of sensations is experienced, and is in this sense conscious, does not and cannot mean that this is the object of an act of consciousness in the sense that a perception, a presentation, or a judgment is directed upon it." LI, 382.

In the *Logical Investigations* Husserl makes this point explicit: "The range of the unitary notion of attention is therefore so wide that it doubtless embraces the whole field of intuitive and cognitive reference (Meinens), the field of presentation (Vorstellens) . . ., which comprehends both intuition and thought. Ultimately it extends as far as the concept: consciousness of something". LI, 384.


Husserl, *FTL*, 158.

"The relation of participation is not to be confused with that of mere likeness . . . . As against this, it should be emphasized that likeness is only a correlate of the identity of a universal, which in truth can be considered as one and the same and as a 'counterpart' of the individual . . . . All of these particularizations have a relation to one another through their relation to the identical and are then said to be like". *Experience and Judgment*, 327.

In *Experience and Judgment* a number of further clarifications are made. There is a difference between the theoretical activity of amplifying the content of a concept in induction and the essentially passive genesis of concepts in the perceptual association of like with like. In the latter case a foundation for an explicit and spontaneous act of identification is prepared, but through prepredicative syntheses of likeness.

Husserl, *LI*, 782.


Husserl, *LI*, 782.

"The part certainly lies hidden in the whole before all division into members, and is subsidiarily apprehended in our perceptual grasp of this whole. But this fact, that it thus lies hidden in the whole, is at first merely the ideal possibility of bringing the part, and the fact that
it is a part, to perception in correspondingly articulated and founded acts". LI, 794.

44 Husserl, LI, 784.

45 Ibid.

46 Husserl, LI, 783-4.

47 Husserl, LI, 751-2.

48 Husserl, Intro., 36. This is reiterated several pages later where Husserl writes: "[T]he whole approach whereby the overcoming of psychologism is phenomenologically accomplished shows that what the author had given as analyses of immanent consciousness must be considered as a pure a priori analysis of essence. In this way were opened up for the first time, and in far-reaching analyses actually carried out, the immense fields of the given consciousness as fields for 'ontological' investigations. The starting point for all this lay in intensive studies of Hume's relations among ideas compared to Leibniz's truths of reason, to Kant's analytic truths, and, at the same time, to the Lotze studies". Ibid., 42.


50 Husserl, FTL, 280-1.

51 This interpretation of the a priori in Hume and its relation to Kant is indebted to Adolf Reinach's essay "Kant's Interpretation of Hume's Problem", translation published in Southwestern Journal of Philosophy (1976).


54 Husserl, FTL, 144.

55 Husserl, FTL, 145.

56 Husserl, FTL, 176.

57 Husserl, Intro., 40.

58 See Husserl, FTL, 258-9.

59 Husserl, FTL, 153.

60 Husserl, FTL, 254.

61 Husserl, FTL, 253.

62 Husserl, FTL, 254-5.
This radical insight of transcendental phenomenology is summarized in *Cartesian Meditations*, where Husserl writes: "Every imaginable sense, every imaginable being, whether the latter is called immanent or transcendent, falls within the domain of transcendental subjectivity, as the subjectivity that constitutes sense and being. The attempt to conceive of the universe of true being as something lying outside the universe of possible consciousness, possible knowledge, possible evidence, the two being related to each other externally by a rigid law, is nonsensical. They belong together essentially; and, as belonging together essentially, they are also concretely one, one in the only absolute concretion: transcendental subjectivity". *Cartesian Meditations*, trans. D. Cairns (The Hague: Martinus Nijhoff, 1977), 84.

"The presuppositions of being, as they are uncovered at each level, become indices of problems concerning evidence, which lead us into the vast system of constitutive subjectivity. Objective logic, logic in the state of natural positivity, is the first logic for us, but not the final logic. Not only does the ultimate logic reduce all the principles of objective logic, as theory, to their originary and legitimate— their transcendental-phenomenological—sense, and confer the dignity of genuine science upon them: By the very fact of doing so or beginning to strive, level by level, toward the goal, it necessarily becomes amplified. A formal ontology of any possible world, as a world constituted in transcendental subjectivity, is a non-self-sufficient part of another 'formal ontology', which relates to everything that exists in any sense: to what exists as transcendental subjectivity and to everything that becomes constituted in transcendental subjectivity". *FTL*, 271.