POPPER'S DEFENSE OF TRADITION: WORLD 3, SEMANTICS, AND
THE CONCEPT OF AN OBJECTIVE NORM

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November 25, 1979
Abstract

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Popper's three world doctrine, it has been argued by Feyerabend and Krige, is a rejection of the type of critical dualism of facts and norms articulated in *The Open Society*. Feyerabend argues further that world 3 acts as a methodological prison designed to restrict the free decision of the individual theoretical scientist. It is my position that Popper's concept of world 3 is not a rejection of critical dualism but rather an attempt to allow for the existence of free normative decisions within the context of a binding tradition. The key to understanding this move is the notion of an objective norm. Specifically I argue that Popper's pluralistic epistemology is based on a traditional many-levelled semantics developed originally to combat psychologism and used now to place the issue of the choice of methodological norms within the framework of a theory of tradition.

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To those familiar with Popper's demarcation criterion as articulated in *The Logic of Scientific Discovery*, 1 the patent metaphysical character of Popper's work after 1966 must appear problematic. 2 After his vehement critique of Plato and Hegel in *The Open Society and Its Enemies*, 3 it is paradoxical to hear him now speak of himself as having "much in common with Plato's theory of forms or ideas, and therefore with Hegel's objective spirit." 4 Those familiar with Popper's earlier empiricist views ought rightly be surprised, if not embarrassed, to hear him defend the existence of an autonomous world of intelligibilia as objective as the visibilia which are physical bodies. 5

The reference to intelligibilia has led Henryk Skolimowski to conclude that Popper has developed an entirely new epistemology that is unique in that it attempts to ground the objectivity of scientific knowledge in the "autonomy of the third world entities." 6 Skolimowski makes the further claim that "the independent status of these entities is the


4Popper, *Objective Knowledge*, p. 106.


guarantee of the objectivity of scientific theories." 7 Recent work by John Krige and Paul Feyerabend 8 suggests that Popper's world 3 epistemology represents a radical departure from the doctrine of critical dualism or critical conventionalism as set forth in the Open Society. 9 If they are correct in their analysis, it would appear that Popper has retreated from his earlier decision to treat logical and methodological laws as conventions and has instead granted them an objective validity apart from the decisions of individuals.

In this paper I wish to argue, contrary to Krige and Feyerabend, that Popper's new epistemology is not a rejection of his earlier critical dualism but rather it is an attempt to allow for the existence of free normative decisions within the context of a binding tradition. As long as the individual has decided to work within a given tradition, he is subject to the canons of rationality and norms constitutive of that tradition; in this sense logical and methodological norms take on an objective character. Traditions, being socio-historical products, can be modified and altered but only within certain limits. Just what the limits of such modification are can only be decided upon the basis of a fully developed theory of tradition.

I. World 3, Logical Relations, and Biological Analogues

Popper first formulated his thesis on the ontological reality of what he then referred to as "the third world" in 1967. 10 After 1970, at the suggestion of Sir John Eccles, he began to speak of "world 3." 11 The first published articulation of the thesis distinguishes three worlds or universes: "First, the world of physical objects or of physical states (world 1); secondly, the world of states of consciousness, or of mental states, or perhaps behavioural dispositions to act (world 2); and thirdly, the world of

7Schilpp, Karl Popper, I, 494.
9Popper, Open Society, I, 57-85.
10Popper, Objective Knowledge, p. 106.
11Schilpp, Karl Popper, I, 157, n.7a.
objective contents of thought, especially of scientific and poetic thoughts and of works of art (world 3)."\(^{12}\) In the following year, the same theme is developed with a stress on the relation of world 3 to certain Platonic views:

It introduces a tripartite world, or, as I prefer to say, a third world. ... I wish to make this pluralistic philosophy the starting point of my discussion, even though I am neither a Platonist nor a Hegelian.

In this pluralistic philosophy the world consists of at least three ontologically distinct sub-worlds; or, as I shall say, there are three worlds: the first is the physical world or the world of physical states; the second is the mental world or the world of mental states; and the third is the world of intelligibles, or of ideas in the objective sense; it is the world of possible objects of thought; the world of theories in themselves, and their logical relations; of arguments in themselves; and of problem situations in themselves.\(^{13}\)

The denizens of this independently existing world are not the normal inhabitants of a Platonic heaven-- concepts of things, or essences or natures of things; rather the inmates of world 3 are of the nature of logical relations, arguments, and problem situations. Popper is clear in maintaining that logical and methodological rules play key roles in world 3: "Among the inmates of my "third world" are, more specifically, theoretical systems; but inmates just as important are problems and problem situations. And I will argue that the most important inmates of this world are critical arguments, and what may be called-- in analogy to a physical state or a state of consciousness-- the state of a discussion or the state of a critical argument;..."\(^{14}\) There can be no doubt that Popper wishes to include logical norms within the realm of his world 3.

At this point it is essential to note that for Popper, once a methodological or logical rule or norm is expressed in language, it becomes objective; normative decisions become transformed in Popper's new scheme into objective standards. To cite Popper directly: "This, I assert, is mainly due to the fact that a thought, once it is formulated in language, becomes an object outside ourselves; such a object can then be inter-subjectively criticized-- criticised by ourselves as well as others. Inter-subjective or objective criticism

\(^{12}\) Popper, _Objective Knowledge_, p. 106.

\(^{13}\) Popper, _Objective Knowledge_, p. 154.

\(^{14}\) Popper, _Objective, Knowledge_, p. 154.
in this sense only emerges with human world 3, the world of objective standards and of the content of our subjective thought processes." The notion of objectivity is here being used as equivalent to inter-subjectivity such that normative decisions once expressed can be inter-subjectively binding. It is this notion of an objective standard that has led Krige and Feyerabend to conclude that Popper has rejected his earlier critical dualism.

In this analysis of the concept of an objective norm Popper turns to certain biological analogies. At one point we are told that world 3 is "a natural product of the human animal, comparable to a spider's web, ... or nests built by wasps or ants, the burrows of badgers, dams constructed by beavers, or paths made by animals in forests." For Feyerabend these analogies serve only to indicate that Popper is now treating methodological decisions as facts in the natural world rather than as norms accepted by the free decision of individuals. This position is an over reaction, I believe, to what may have been an unfortunate analogy. The function of these biological analogies is not to argue that normative decisions must be construed on the basis of natural facts but rather to stress the objective nature of human knowledge, and its importance over all subjective concerns. The epistemologist has the choice of dealing with a whole range of subjective problems relating to the manner in which knowledge comes into being, i.e., with the formation of dispositions or beliefs, or he can concern himself with the objective structure of the final product of knowledge apart from its genesis, i.e., the logical relations exhibited within the theoretical structure itself. The main thrust of Popper's world 3 epistemology suggests that the advance and growth of knowledge can best be understood by studying the objective features of theoretical systems while placing all its subjective aspects in the background.

When Popper suggests that world 3 ought to be studied independently of world 2, i.e., that the objective contents of thought ought to be appraised independently of any subjectivity, he is making the claim that in the realm of scientific practice we ought be concerned with inter-subjective standards of preference only. This thought can be traced back to Popper's earlier Logic of Scientific Discovery where he developed what amounts to a Popperian axiom: "If


16Popper, *Objective Knowledge*, p. 112.
we demand justification by reasoned argument, in the logical sense, then we are committed to the view that statements can be justified only by statements."17 Again in the same work Popper remarks concerning the notion of objectivity: 'My use of the terms 'objective' and 'subjective' is not unlike Kant's. He uses the word 'objective' to indicate that scientific knowledge should be justifiable, independently of anybody's whim: a justification is 'objective' if in principle it can be tested and understood by anybody. 'If something is valid,' he (Kant) writes, 'for anybody in possession of his reason, then its grounds are objective and sufficient.' "18 The word 'subjective' is used in its Kantian sense of feelings of conviction or inclinations,—world 2 entities are, for Popper, more the business of psychology than of the logic of appraisal. 19 Given this distinction between the logic of knowledge and the psychology of knowledge, 20 the introduction of an independently existing world 3 can be justified without the least appeal to either subjective or psychological considerations. Logical and methodological decisions ought to be as objective as any empirical claim, that is, once such norms are introduced they ought be as inter-subjectively criticisable as any matter of fact. Once expressed and accepted, such norms become as much a part of a research tradition as small pieces of paper, string, and mud become part of a wasp's nest.

II. Critical Dualism and the Concept of an Objective Norm

The inclusion of methodological laws and of the laws of logic within an objective world 3 has led Krige and Feyerabend to conclude that Popper has abandoned his position on critical dualism. 21 The inclusion of normative values in an objective third realm involves, for both Krige and Feyerabend, a radical departure from vintage Popper. To cite Krige:

17Popper, Logic, p. 93.
18Popper, Logic, p. 44.
19Popper, Logic, pp. 44-45.
20The psychology of knowledge deals with empirical facts and the logic of knowledge is concerned only with logical relations, i.e., with logical justification. See Popper, Logic, p. 30.
21See note 8.
Here, then, it is suggested that standards are denizens of an 'objective' autonomous world, a realm which is subjectless and so beyond the control of the individual. No longer are such norms realized by our free decisions to adopt them, thus 'existing' only in world 2, the world of psychological states or, more generally, the social world. Rather those norms, and that world and its institutions, constrain us whether we like it or not, and we cannot escape from the 'objective' grip which they have on our behaviour. 22

Feyerabend in a strong reaction to what he takes to be a major threat to individual freedom speaks of being "imprisoned even more effectively by third world walls as the laws of logic, the laws of arithmetic, and the laws of counterpoint." 23

It is my thesis that Popper's concept of an objective standard or norm is not incompatible with his articulation of critical dualism. In order to test this thesis it is necessary to return to Popper's remarks in the Open Society. There the position in question is described as a "dualism of facts and norms." 24 At the heart of this notion is a distinction between natural and normative law. Natural laws, Popper informs us, are "laws of nature, such as the laws describing the movements of the sun, ... . Normative laws, on the contrary, are:

Norms, or prohibitions and commandments, i.e., such rules as forbid or demand certain modes of conduct; examples are the Ten Commandments or the legal rules regulating the procedure of the election of Members of Parliament, or the laws that constitute the Athenian Constitution. ... A normative law, whether it is now a legal enactment or a moral commandment, can be enforced by men. Also it is alterable. ... It does not describe a fact, but lays down directions for our behaviour. 26

23Feyerabend, Inquiry, p. 507, n.1.
24Popper, Open Society, I, 63.
25Popper, Open Society, I, 57.
26Popper, Open Society, I. 57-8.
Since methodological rules and the laws of logic are normative laws, we would expect them, contrary to Feyerabend's anarchistic stance, to constrain our behaviour. A brief look at Popper's remarks in the Open Society makes it plain that critical dualism was not conceived as being incompatible with the restraint of individual behaviour. Normative laws like the laws of logic are in fact designed for the purpose of restraining individual behaviour.

Critical dualism is not to be confused with either anarchism or libertarianism. Returning to the Open Society, Popper informs us that "critical dualism merely asserts that norms and normative laws can be made and changed by man, more especially by a decision or convention to observe them or to alter them, and that it is therefore Man who is morally responsible for them; ... Norms are man-made in the sense that we must blame nobody but ourselves for them; neither nature, nor God."27 Popper is here speaking of man in the collective sense; Man as opposed to God or nature has decided to accept certain norms. From this it does not follow that social norms are the result of individual decisions. Decisions can be the result of a consensus. Civil laws, for example, are not the result of individual decisions in the sense that they do not originate with the individual qua individual at least within the context of a democratic and open society. Every law must originate in some psychological state of mind but once expressed its acceptance is not an individual but rather a collective matter.

Apart from the issue of freedom and restraint in relation to the acceptance of norms, there is, I believe, another major misunderstanding at the core of Feyerabend's and Krige's analysis. Essentially both believe that an objective standard is self-contradictory,-- that all standards or norms must be subjective. In order to be individually compelling, both believe, a norm must act on the level of an individual's psychological states. Krige is very explicit in equating the norms of the social world with the world of psychological states. To cite him directly: "As standards constraining our thinking they are merely conventions which we are free to adopt if we so choose. From the perspective of critical dualism, then, the notion of an objective standard is a contradiction in terms. In being objective, truths of logic and arithmetic cannot be normative and psychological, and in being standards they must be subjective."28 All standards

27Popper, Open Society, p. 61.

for Krige must be subjective. Such a view is simply a version of Popper's old enemy, -- psychologism. Krige is correct in holding that all decisions originate with some psychological state but he fails to see that those decisions, once accepted and embodied within a tradition, are no longer world 2 objects. The laws that constitute the Athenian Constitution, for example, originated with a decision ultimately traceable to individual psychological states but once that Constitution was expressed in language and became part of a living tradition, it became objectively binding and normative and thus beyond the control of the individual qua individual to alter it. The point is that world 2 states become objectively embodied in world 3 once expressed and accepted as part of a tradition. At this point in time, norms are no longer merely subjective.

Krige's difficulty seems to be with the concept of an objective decision. The difficulty arises from the fact that the concept of a 'decision' is ambiguous. Popper points this out in his discussion of critical dualism: "We can speak of a 'decision' in two different senses. We may speak of a certain decision which has been submitted, considered, or reached, or been decided upon, (This I take to be the world 3 sense of a decision as an objective content of thought. Let us refer to this usage as 'decision W3'.) or alternatively, we may speak of an act of deciding and call this a 'decision.( This I take to be the world 2 sense of decision. Let us refer to this usage as 'decision W2'.)" Popper goes on to say that a 'decision W2' is a psychological fact, whereas 'decision W3' is a norm or standard and must be distinguished from a fact. Thus if we restrict ourselves to the paradigm usage of 'decision W3', the idea of an objective standard or norm does not imply a rejection of critical dualism as Krige and Feyerabend argue. 'Decisions W2' are world 2 events and as such are private and non-linguistic but they can be transformed into world 3 objects by being embodied in the public linguistic tradition. In this sense objective norms can be understood as communal decisions that are both objective and normative.

III. Critical Dualism and a Return to a More Traditional Semantical Framework

It is my position that Popper's new epistemology can best be understood as the completion of his earlier critical dualism rather than its rejection. In this regard, the distinction between world 3 and world 2 can be seen as designed

29Popper, Open Society, I., 63.
to prevent the reduction of objective norms and standards, in particular logical and methodological norms, to subjective states of mind, to psychological facts. Popper's key move in this anti-reductionist program is to adopt a Fregean semantics in order to argue that objective norms are on a distinct semantical level from psychological facts— the former are residents of world 3, the latter of world 2. The aim of this semantical move is in fact to reinforce the distinction between fact and norm so characteristic of critical dualism.

Whereas psychological facts are private and non-linguistic, objective norms are linguistic and inter-subjective. Within the context of a continued defense of critical dualism, Popper now holds that there is an independently existing and objectively binding tradition that acts as a rein on the individual methodological imagination. This rein is quite clearly the rein of tradition; individuals in the new epistemology, are subject to the canons of rationality real-ized within their own research traditions. These canons, of course, originate in the psychological subjectivity of individuals, but once expressed and accepted, they begin to reside in the public research tradition. Yet instead of appealing to the concept of tradition, Popper argues for the existence of objectively valid norms by an appeal to a traditional continental semantical framework; if one is willing to accept a four-levelled Fregean framework, the concept of an objective norm distinct from a subjective one becomes clearly established.

In regard to this semantical move, Popper explicitly speaks of his debt to both Bolzano and Frege. 30 By analyzing the position of each philosopher in turn and his relation to world 3 I hope to shed light upon the precise nature of an objective norm. In the course of this analysis I shall argue that Popper's postulation of world 3 is a semantic move from a two-levelled scheme that characterizes much of contemporary British and American philosophy since Russell to a more traditional four-levelled semantical scheme characterized by Frege. 31

30Popper, Objective Knowledge, p. 111.

31For a general discussion of semantical frameworks in contemporary philosophy see Guido Kung, Ontology and the Logistic Analysis of Language (Reidel: Holland, 1967).
1. Bolzano

In his intellectual autobiography, Popper speaks of his understanding of Bolzano:

In his *Wissenschaftslehre* (1837), Bolzano spoke of 'Truths in themselves,' and more generally of 'statements in themselves,' in contradistinction to those (subjective) thought processes by which a man may think, or grasp truths; or, more generally, statements, both true and false.

Bolzano's distinction between statements in themselves and subjective thought processes had always seemed to me of the greatest importance, ... Statements in themselves could stand in logical relations to each other ... Subjective thought processes, on the other hand, could stand in psychological relations. ... The two kinds of relations are utterly different; one man's thought processes cannot contradict those of another man, or his own thought processes at some other time; but the contents of his thoughts-- that is, the statements in themselves-- can of course contradict the contents of other thoughts. 32

Briefly put, Bolzano's claim asserts much the same as the Popperian axiom, namely, that only a statement or proposition can logically support or contradict another statement or proposition; logic is concerned with the objective content of propositions and their interrelations only.

The general framework of Bolzano's work can best be understood in terms of his desire to distinguish logic, characterized as dealing with forms or patterns of inference, from psychology. 33 Science, according to Bolzano's understanding, is the sum of objective truths that fully describe the world. The unique feature of Bolzano's work is the notion of *Sätze-an-Sich* in terms of which the world can be fully described. The notion is defined as follows: "By a 'Sätze-an-Sich' I mean any statement whatever to the effect that something is or is not, irrespective of whether the statement be true or false, irrespective of whether any person ever formulated it in words, and even irrespective of whether it ever entered into any mind as

A close look at this passage presents us with a fairly clear idea of Bolzano's intention. Sätze-an-Sich refer to the objective content of thought fully divorced from any subjective origin. Oddly enough Bolzano is led to postulate the existence of propositions that have never been formulated by persons. This move is apparently motivated by his desire to separate thought from all its subjective moorings.

Yet I would like to argue that Bolzano's position is not as absurd as it may initially sound. One understanding of his claim that propositions in themselves exist even if never articulated is that such propositions exist in the mind of God. This is a position that Bolzano in fact held. But without appealing to the mind of God, it is possible to understand Bolzano's claim in another sense: since already formulated and expressed propositions can give rise to an infinite number of logical consequences, it follows that not every member of the consequence class need be expressed. Some of these consequences would of course be true and others false. If, for example, it is possible to derive any proposition from a contradiction, it follows that any two logically contradictory propositions can have an infinitely large consequence class, many propositions of which have neither been, nor ever will be, expressed. This argument alone proves to my satisfaction that there can be an infinitely large world of propositions in themselves that have never been articulated. This being the case, any talk of the psychological genesis of such propositions would be utter nonsense.

From the above argument it follows that there are true propositions (Wahrheiten-an-Sich) that have never been thought. The beauty of Bolzano's claim is that it allows us to speak of the objective contents of true propositions without the slightest concern for their origin in human subjectivity; logic and psychology have been clearly distinguished. The propositions that are the subject matter of logic are thinkable or expressable but are not necessarily thought or expressed; but Bolzano did believe, as we have seen, that the totality of such propositions was, in fact, known only to God. A fully complete science, I would take it, would be an exhaustive list of all true propositions in themselves.

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35 Kneale, Logic, p. 360.
Kneale suggests that the closest historical antecedents for Bolzano's Sätze-an-Sich are the Stoic doctrine of lekta and the medieval doctrines of dicta propositionum and complexe significabilia. In contemporary logic the following expressions are used as descriptions for Sätze-an-Sich: 'question', 'theorem', 'suggestion', 'theory', 'tenet', and 'dogma'; all of these terms characterize Popper's world 3. One of Popper's favorite examples of thoughts-in-themselves is a book of logarithms or mathematical theorems; interestingly enough, theorems in a book of mathematics may be called 'Sätze' in German. In addition Bolzano's decision to allow false propositions into the realm of Sätze-an-Sich is paralleled by Popper's move to allow false propositions into his account of 'verisimilitude.'

Yet there are significant differences between Bolzano and Popper on the ontological level. Bolzano refuses to grant any ontological status to his Sätze-an-Sich: "They have no real existence, i.e., they are not of such a sort as to be in any place or at any time or in any other manner as anything real." Popper has no such problem. In his autobiography he expresses himself clearly on this issue of ontological status: "Bolzano was, I think, doubtful about the ontological status of his statements in themselves, and Frege, it seems, was an idealist, or very nearly so. I too was, like Bolzano, doubtful for a long time, and I did not publish anything about the third world until I arrived at the conclusion that its inmates were real; indeed, more or less as real as tables and chairs." Popper, the staunch empiricist of the Vienna Circle, has taken the plunge that Bolzano was reluctant to take.

2. Frege

Popper gives the greatest credit for his world 3 views to the logician Frege: "My third world resembles most closely the universe of Frege's objective contents of thought."

36 Kneale, Logic, p. 360.
37 Popper, Objective Knowledge, p. 115.
38 Popper, Objective Knowledge, pp. 47-60.
39 Kneale, Logic, p. 363.
40 Schilpp, Popper, p. 146.
41 Popper, Objective Knowledge, p. 106.
Frege in fact, Popper informs us, referred to the realm of the objective contents of thought as the 'third realm', a locution almost identical to Popper's third world. An understanding of Frege's realm of the "objective contents of thought" ought greatly increase our understanding of world 3. In this section I intend to analyze the semantical framework of Frege's *Ueber Sinn Und Bedeutung* with the intention of comparing that framework to the semantical framework found in Popper's work. In order to do this I shall borrow from a mode of analysis used by Guido Kung.

For semantic reasons Frege found it necessary to distinguish the subjective and the objective content of thought. Given this distinction, he arrived at what I shall refer to as a four-levelled semantical framework described in Table 1. It was the problem posed by identity sentences that led Frege to posit a fourth semantical level—Sinn as distinct from Vorstellung and Bedeutung. Frege's problem is best proposed by introducing the identity sentence 'the morning star = the evening star'. How is such a statement to be understood? Frege was ultimately to conclude that the only way that such a statement could be understood was to multiply semantical levels. Both the morning star and the evening star do in fact refer to the same object, namely, Venus, but their "mode of representation" is different. The expression 'the morning star = the evening star' is not merely a tautology in the sense that no meaning would be lost if we uniformly substituted for one expression and arrived at the statement 'the morning star = the morning star'. The expression, cannot be a tautology but the result of an actual scientific discovery made after much observation.

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42 Schilpp, *Karl Popper*, p. 144.


Table 1

Frege's Four-Levelled Semantical Framework

1. Zeichen (Sign)  
   An event or object having a specific form

2. Vorstellung (Idea)  
   A wholly subjective idea expressed by only one individual in principle

3. Sinn (Sense or Meaning)  
   A fully objective idea devoid of all subjective content yet not the object itself.

4. Bedeutung (Referent for the object)  
   A proper name, the object designated by the sign
The only way that language will be able to account for the full range of our experience, as the problem with this particular identity statement indicates, is to distinguish between what Frege refers to as the sense of a proper name, i.e., its mode of representation or Sinn and the reference of that proper name. In this particular identity statement, the reference of both names is the same but their mode of representation is distinct. If our semantical framework is to do justice to our experience, we must distinguish the referent of a term from its mode of representation. The clearest example in Frege's work is his discussion of the triangle:

Let a, b, c be the lines connecting the vertices of a triangle with the midpoints of the opposite sides. The point of intersection of a and b is then the same as the point of intersection of b and c. So we have different designations for the same point, and these names ('Point of intersection of a and b', 'Point of intersection of b and c') likewise indicate the mode of presentation; and hence the statement contains true knowledge.

It is natural, now, to think of there being connected with a sign (name, combination of words, letter), besides that to which the sign refers, which may be called the referent of the sign, wherein the mode of presentation is contained. In our example, accordingly, the referents of the expressions 'the point of intersection of a and b' and 'the point of intersection of b and c' would be the same, but not their senses.

From this passage it is evident what Frege has in mind: a sense can be understood, it can be grasped by anyone who understands the language, it is what is directly expressed in the sign in so far as it contains the mode of representation of the object.

Frege's main aim in distinguishing Vorstellung from Sinn is to combat psychologism, that is the confusion of subjective and objective contents of thought. The task is to insure that the idea subjectively present in the mind of the hearer will not be confused with its sense or reference. Now from the standpoint of logic only sense (Sinn) and reference (Bedeutung) are important, -- the level of Vorstellung or the subjective idea is totally irrelevant.


47Kung, Ontology, pp. 39-40.
This view of Frege's has become a central axiom of Popper's system. The subjective content of norms, for example, are unimportant for Popper; all that really matters are norms or standards as objectively conceived.

A look at a central Fregean analogy ought clarify this four-levelled semantical scheme:

Somebody observes the moon through a telescope. I compare the moon itself to the referent (Bedeutung); it is the object of the observation, mediated by the real image projected by the object glass in the interior of the telescope, and by the retinal image of the observer. The former I compare to sense (Sinn), the latter to the conception or experience (Vorstellung). The optical image in the telescope is indeed one-sided and dependent upon the standpoint of observation; but it is still objective, inasmuch as it can be used by several observers. At any rate it could be arranged for several to use it simultaneously. But each one would have his own retinal image; on account of the diverse shapes of the observer's eye's, even a geometrical congruence could hardly be achieved, and a true coincidence would be out of the question. 48

Returning to Table 1, level #2, Vorstellung would be analogous to the retinal images of each observer; such images are totally private affairs and are more the concern of psychology than of logic. It is important to realize that Frege introduces the level of Vorstellung simply to dismiss it from the realm of logic. In the same way, Popper introduces the notion of a subjective norm simply to dismiss it from the realm of methodology. Level #3, Sinn, would be analogous to the real image projected by the object glass in the interior of the telescope. It is objective in the Kantian sense that it can be seen and tested by anybody,--it can be used by several observers at once. Sinn is public property, it has an "objective content, which is capable of being the common property of several thinkers." 49 There is a clear parallel here to Popper's concept of intersubjective testability. 50 It is at the level of Sinn that we find objective norms and standards. Level #4, Bedeutung, is then analogous to the moon itself that we presuppose as a

50 Popper, Logic, p. 44.
referent since our intent is not to speak of our idea of the moon but rather about the moon itself.

At this point I would like to draw the following conclusions regarding the identity between Frege's semantical framework as presented in Table 1 and Popper's account of the three worlds: (See Table 2) 1. Popper's world 1, the world of physical objects or physical states is, I argue, analogous to, or plays the same role as Frege's Bedeutung. On the semantical level, both act as referents.*T

2. Popper's world 2 is the realm of Frege's Vorstellung. This world is made up of states of consciousness, or mental states, or dispositions to act. This is the world of subjective norms or of 'decisions W 2'. In fact world 2 defines the realm of psychology. World 2 events are all private and non-linguistic. Of course world 2 events can be embodied in the third world and thus become public, but qua world 2 events they are outside the realm of logic and methodology. In the same manner Frege's realm of Vorstellung is forever excluded from the world of propositional logic, subjective norms are excluded from the realm of methodology for Popper. 3. Popper's world 3 can be identified with Frege's realm of Sinn. Popper, it will be remembered, speaks of world 3 as the world of "the objective contents of thought, especially of scientific and poetic thoughts and of works of art."52 He in fact explicitly remarks that he has taken the phrase "objective contents of thought" from Frege.53

Popper's close connection with Frege ought present us with a clue as to why he developed the notion of world 3 in the period following 1967. Frege, we saw, developed his four-levelled semantical framework in order to combat what he took to be psychologism in logic. Bolzano, as we saw, also moved to his Sätze-an-Sich for the same reason. This being the case it would be reasonable to conjecture that Popper developed his world 3 epistemology to combat what he took to be some contemporary form of psychologism. Does this conjecture square with the evidence? Popper has always been

51 There is good reason to believe that Popper's three worlds are metaphysical categories in addition to being merely semantic; even so I believe that I have made a good case for the identity between Popper and Frege on the semantical level.

52 Popper, Objective Knowledge, p. 106.

53 Popper, Objective Knowledge, p. 109, n. 2.
Table 2

Comparison of Frege's and Popper's Semantical Frameworks

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<td>World 2</td>
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<tr>
<td>3. Sinn</td>
<td>World 3</td>
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an unrelenting enemy of psychologism in all its forms. The German version of the Logic of Scientific Discovery (1934) has an entire section dealing with the "Elimination of Psychologism," in fact it was in that work that Popper traced the myth of induction to the error of psychologism.

The old enemies in the days of the Vienna Circle were the belief philosophers: Descartes, Locke, Berkeley, Hume, Kant, and Russell, all of whom Popper believed had their work flawed by psychologism, namely, the conflation of world 2 and world 3. He addresses himself directly to this issue: "Thus my first thesis is that the traditional epistemology of Locke, Berkeley, Hume, and even of Russell, is irrelevant, in a pretty strict sense of the word. It is a corollary of this thesis that a large part of contemporary epistemology is irrelevant also." It has been argued that the more contemporary "psychologizers" that have gained Popper's attention, and perhaps pushed him into his world 3 epistemology, are philosophers like Thomas Kuhn and Michael Polanyi. These philosophers of science have argued that there are no universal and inter-subjective criteria for scientific knowledge. Kuhn in particular has tried to give a psychological and sociological account of the growth of scientific knowledge.

The issue of psychologism came especially to the fore in relation to his position regarding critical dualism. If subjective and objective contents of thought are not semantically distinguished, it becomes too easy to confuse the notions of objective and subjective standards and norms. It was thus his effort to place critical dualism on a firmer footing by distinguishing two types of norms that led Popper to adopt a semantical framework more compatible with his concept of objectively valid criteria for scientific knowledge. (See Table 3.) By introducing the Fregean distinction between the objective as opposed to the subjective contents of thought, Popper is able to distinguish objective from subjective norms in such a way to allow for the possibility of objectively valid norms that are not reducible to psychological states. In this way he manages to shore up the notion of critical dualism rather than reject it.

54Popper, Logic, Ch. 1.
56Popper, Objective Knowledge, p. 108.
57Schilpp, Karl Popper, I, 490-98, 567-70.
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IV. Toward a New Theory of Tradition

For the epistemological anarchist, the highest good appears to be human freedom and spontaneity. The one thing he opposes is universal objective standards. To cite Feyerabend's review of Popper: "Nobody can be forced to accept any result, however 'rational', and anyone can escape the force of the most stringent argument by simply saying 'I don't like it.'" If pushed far enough, the anarchist can drop out of the western research tradition entirely and move freely into the world of Carlos Castaneda. He is afforded this freedom as a result of his construal of all norms as subjective.

It is to combat this form of irrationalism that Popper turns to his new epistemology. The key to this move is the notion of an objectively valid norm,-- once a standard is publicly accepted it becomes part of the tradition, part of world 3. The individual is then subject to the canons of rationality of that tradition. For Popper, research is only possible within the confines of a tradition, within the parameters of the objective norms that compose and constitute that tradition. To drop that tradition for another and say "I don't like it" is to guarantee that absolutely no progress will ever be made. Naturally a distinction must be made between dropping a tradition and changing it.

The relation between an objectively valid tradition and progress can be seen clearly in the following passage:

You pick up, and try to continue, a line of inquiry which has the whole background of the earlier development of science behind it; you fall in with the tradition of science. It is very simple and a decisive point, but nevertheless one that is not sufficiently realized by rationalists-- that we cannot start afresh; that we must make use of what people before us have done in science. If we start afresh, then, when we die, we shall be about as far as Adam and Eve were when they died.

59Feyerabend, Method, p. 188.
60Feyerabend, Inquiry, p. 502, n. 22.
61Feyerabend, Method, p. 190.
In science we want to make progress, and this means that we must stand on the shoulders of our predecessors. We must carry on a certain tradition, * * * It tells us that people have already constituted in this world a kind of theoretical framework--not perhaps a very good one, but one which works more or less, it serves us a a kind of network, as a system of coordinates to which we can refer the various complexities of this world. We use it by checking it and by criticising it. 62

Feyerabend's critique of Popper's world 3 is misguided, I believe, because it fails to see the absolute prerequisite of an objective tradition for any scientific progress. The objective norms that make up a tradition, that compose world 3, are simply community decisions that have become binding. In the case of the laws of logic they are community decisions accepted as the most appropriate and effective way of guaranteeing the validity of deductive arguments. In regard to methodological rules, they are community decisions regarding the most effective and fruitful way of coming to understand the physical world. Such group decisions can be altered by critical judgment but in so far as they compose the tradition they are binding on all members of that tradition. Without an objective tradition, in Popper's scheme, there can be no progress. From this it follows that one is constrained by objective norms only if one is concerned about progress. An objectively existing world 3 must be seen as the foundation for a binding scientific tradition.

62Popper, Conjectures, p. 129.

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