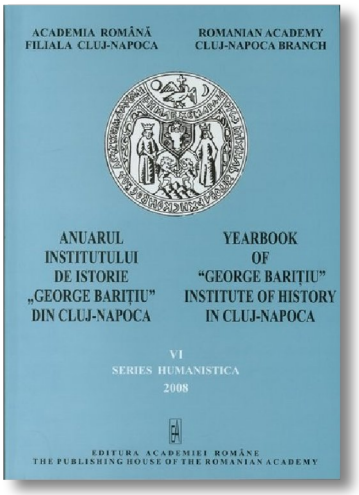

ISSN 1584-4404

Yearbook of the George Barițiu History Institute of Cluj-Napoca Series *Humanistica*

humanistica.ro

Karl Popper, Alfred Tarski and Problems Concerning the Correspondence Theory of Truth

Alexander J. Naraniecki

How to cite this article:
Naraniecki, Alexander J. (2008) *Karl Popper, Alfred Tarski and Problems Concerning the Correspondence Theory of Truth*, Yearbook of the George Barițiu History Institute of Cluj-Napoca, Series Humanistica, Vol. 6, pp. 193–206. DOI: 10.5281/zenodo.22965763

© 2008: The Publishing House of the Romanian Academy.
Humanistica Yearbook is published online since 2003.
Submit your article to Humanistica Yearbook: secretariat.dcsu@acad-cj.ro

KARL POPPER, ALFRED TARSKI AND PROBLEMS CONCERNING THE CORRESPONDENCE THEORY OF TRUTH[1]

Alexander J. Naraniecki

Griffith University, Brisbane, Australia

Abstract. *This paper retraces the way in which the Austrian philosopher Sir Karl Popper came to accept a Correspondence Theory of Truth from the work of the Polish logician and mathematician Alfred Tarski. This paper argues that Popper's theoretical use of Tarski's semantic theory of truth reveals crucial insights into the fundamental characteristics of Popper's criticism of historicism and totalitarianism. Quite deceptively, arguments based upon Tarski's theory of truth appear implicitly throughout the text of* ***The Open Society and Its Enemies*** *(1945). In order for arguments from Tarski to be of value in Popper's political philosophy, some philosophical problems as to how these arguments concerning truth function in Popper's work need to be examined. This paper examines some of the central problems Popper faced to this end and the way he was able to overcome them.*

1. INTRODUCTION

The exchange of ideas between Karl Popper (1902–1994) and Alfred Tarski (1902–1983) is more complex than appears at first sight. It is characterised by an innovative yet problematic application of Tarski's thought to other theoretical fields of inquiry by Popper, and a resulting absence of criticism by Tarski in relation to Popper's interpretations of his work. As a result this study perceives the need to subject Popper's use of Tarski's theory of truth to further scrutiny by critically evaluating whether was Popper correct in his intellectual autobiography *Unended Quest* (1974) correct to claim that: *it was clear that we could learn from Tarski's analysis how to use, with a little care, the notion of truth in ordinary discourse, and to use it, moreover, in its ordinary sense – as correspondence to the facts*? This claim is investigated in relation to Tarski's theory of truth as presented

[1] The author would like to acknowledge Dr. Manfred Lube for his advice and guidance as the *Bibliotheksdirektor* during my time researching at the Karl Popper Archives at the University of Klagenfurt, Austria. I would also like to acknowledge Professor Wayne Hudson, Dr. Bruce Buchan and Dr. Dominic Hyde for their intellectual guidance in the writing of this paper.

in *The Concept of Truth in Formalized Languages* (1931)[2]. On top of this concern this paper explores what influences Tarski's theory of truth can be seen to have had upon Popper's social and political philosophy, irrespective of the theoretical correctness of its use.

It is argued here that Popper was able to integrate a formal language semantic theory of truth from Tarski into an *empractic* semiotic philosophy of language that he had received from his supervisor Karl Bühler (1897–1963) when Popper was a psychology student in Vienna[3]. Out of a synthesis of Bühler's and Tarski's linguistic theories arise many philosophical concerns, the most pressing of which are explored in the different sections of this paper. Firstly a brief background to the importance of Tarski for Popper's though is given. Section II explores, the problem arising out of an application of Tarski's semantic formal language theory of truth to that of scientific statements. Section III looks at the problem of holding a truth predicated for scientific statements and other modes of ordinary language alike. Section IV deals with the increasing distinction in Popper's latter thought between defining truth objectively as 'satisfaction' or subjectively as 'conviction'. Finally an examination is made of integration of Tarski's semantic theory of truth into an evolutionary, action orientated Bühlerian theory of language.

2. BACKGROUND TO THE POPPER-TARSKI CONNECTION

This study builds upon the groundbreaking work of David Miller in identifying the importance of Tarski's theory of truth for Popper's work. In *Popper and Tarski* (1999) Miller made the striking observation that it was Popper's political work *The Open Society* that deals most with the work of Tarski. In this paper Miller referred to Tarski's shock at being quoted in the indexes almost as often as Marx[4]. What Miller's work indicates is that scholars of Popper's political thought who have hitherto avoided discussing Tarski in relation to *The Open Society,* can no longer do so without neglecting an important feature of his argumentation. What is most striking is the minimal direct reference to Tarski in the body of *The Open Society*, which has undoubtedly been deceptive to scholars of Popper's political philosophy in the past. However, the remarkable extent to which Tarski is referred to in the endnotes reveal the extent to which Tarski's thought underpins much of this political tract[5]. By raising the above mentioned four

[2] This article was presented (by J. Łukasiewicz) to the Warsaw Scientific Society on 21 March 1931, and published in Polish two years later. A German translation was published as *Der Wahrheitsbegriff in den formalisierten Sprachen*, in "Studia Philosophica", vol. 1 (1936). This article appears in English in Tarski (1956).

[3] *Empractic* in this sense refers to "built into praxis".

[4] See David Miller, *Popper and Tarski*, in *Popper's Open Society After Fifty Years*, Jan Jarvie and Sandra Pralong (eds.), Routledge: London/ New York, 1999, p. 56.

[5] Miller shows how the positions in Chapter 8 of *The Open Society*, *The Philosopher King*, are a philosophical application of Tarski's theory of truth.

problems related to Popper's treatment of Tarski this paper will show that political philosophers must take the Popper-Tarski nexus seriously in order to treat the theoretical support of the arguments in *The Open Society* with the attention that it deserves.

The way Popper appropriated Tarski's work provides the groundwork to attitudes concerning definitions and argumentation such as his "negativism", that is, his unwillingness to give positive definitions to theoretical concepts, as well as the related notion of *diarrhesis* ('division' or 'distinction') by which meaning is created objectively through the activity between individuals engaged in a particular argument. As these linguistic problems are central to Popper's political philosophy, an investigation into the linguistic theory behind such standpoints is warranted. Joseph Agassi has pointed out that Popper defended liberty through the criticism of theories rather than the criticism of concepts; this can be seen as a result of his admittedly unfortunately named 'negativism', which is his unwillingness to define concepts positively[6]. If this is the case then Popper's appropriation and understanding of Tarski's theory of truth ought to be subjected to greater scrutiny for the bearing it has upon our understanding of his political thought. In this way a renewed relevancy and direction for scholarly research into *The Open Society and its Enemies* can be gained.

3. THE PRAGMATIC PROBLEM: APPLYING TARSKI'S FORMAL LANGUAGE TRUTH PREDICATE TO ORDINARY LANGUAGE USE

Tarski's theory of truth is a semantic theory developed for statements in formal language. The intention of which was to find *a definition of truth which would do justice to the institutions which adhere to the classical Aristotelian conception of truth*[7]. The Aristotelian conception of truth from the *Metaphysics* states that:

> *To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, or of what is not that it is not, is true*[8].

In modern philosophical terminology this is understood as the *correspondence theory of truth*, which was according to Popper, 'rehabilitated' by Tarski. The correspondence theory is defined by Tarski as one in which:

[6] Joseph Agassi, *A Philosopher's Apprentice: In Karl Popper's Workshop*, Rodopi B.V., Amsterdam, 1993, p. 115. For an understanding of Popper's understanding of the definition 'negativism' see *Letter of Correspondence*, Popper to Hayek.

[7] Alfred Tarski, *The Semantic Conception of Truth and the Foundations of Semantics*, in *The Philosophy of Language*, A. P. Martinich (eds.), 4th edn., Oxford University Press: New York. 2001, p. 70.

[8] *Ibidem*, p. 69–91.

The truth of a sentence consists in its agreement with (or correspondence to) reality[9].

David Miller has pointed out that there is a problem for critical rationalists in that *when a speaker utters a declarative sentence in ordinary discourse he does more than use it to say what it says*[10]. As Tarski's notion of truth was developed for the use of formal language in logic it cannot be unproblematically applied to a study of natural languages in general. According to Jan Wolenski, Tarski himself was sceptical of the possibility of a formal semantics of natural language which includes the application of the semantic theory of truth to natural languages[11]. For Tarski, the object of his investigation into the problem of *the definition of truth,* requires a definition which is *a materially adequate and formally correct definition of the term 'true sentence'*. Tarski states that when this definition is applied to colloquial language, the results are *entirely unproductive*. For Tarski with respect to colloquial or ordinary language, not only does the definition of truth seemed to be impossible, but even the consistent use of this concept in conformity with the laws of logic seem also for Tarski to be untenable[12].

Applying the semantic theory of truth to natural or colloquial language was exactly what Popper did. How exactly Popper convinced himself of this possibility remains obscure as the logical distinction is, according to Hacohen, *put to rest* as all statements are made non-verifiable and hypothetical[13]. In his intellectual autobiography we can see that Popper understood very well that Tarski's notion of truth was developed for and limited to, formal languages, which are the constructed languages for 'science', namely formal disciplines such as mathematics. In a given statement of a formal language there consists two languages the *object language* and the *meta-language*, only the latter higher order language could contain the truth predicate. Tarski summarised his results in thesis (A): "For every formalized language of finite order a formally correct and materially adequate definition of true sentence can be constructed in the metalanguage, making use only of expressions of a general logical kind, expressions of the language itself as well as terms belonging to the morphology of language, i.e. names of linguistic expressions and of the structural relations existing between them"[14].

[9] Alfred Tarski, *The Semantic Conception of Truth and the Foundations of Semantics*, p. 70.

[10] David Miller, *op. cit.*, 1999, p. 65.

[11] Jan Wolenski, *Logic and Philosophy in the Lvov-Warsaw School*, Kluwer Academic Publishers, Dordrecht/ Boston/ London, p. 180.

[12] Alfred Tarski, *Logic, Semantics, Metamathematics: Papers From 1923 to 1938*, Oxford, 1956, p. 152–153, 165. Where Tarski concludes §1 with: *the very possibility of a consistent use of the expression 'true sentence' which is in harmony with the laws of logic and the spirit of everyday language seems to be very questionable , and consequently the same doubt attaches to the possibility of constructing a correct definition of this expression*, p. 165.

[13] Malachi H. Hacohen, *Karl Popper – The Formative Years, 1902–1945. Politics and Philosophy in Interwar Vienna*, Cambridge University Press, 2000, p. 230.

[14] Alfred Tarski, *The Concept of Truth in Formalized Languages*, in *Logic, Semantics, Metamathematics* …, p. 265.

In an obscurely presented argument, Popper in his autobiography states that; *despite Tarski's restrictions it was clear that from Tarski's analysis we could apply this to ordinary language and that the application of this was made clear by Tarski himself*[15]. This claim by Popper takes great liberties with Tarski's insistence in *Logic, Semantics, Metamathematics* (1956), in which he argued that such an application to an ordinary language was not possible. From what Popper elucidates it appears that since a formal theory of truth can be obtained for a semantic meta-language in which this language can be seen to correspond directly to reality, the jump to claim that ordinary language when speaking of reality can also be shown to be formally true is made[16].

The consequences of Tarski's understanding of the notion of truth in relation to colloquial language may have had a stronger influence on Popper's social and political philosophy than has generally been recognised. In *The Concept of Truth in Formalized Languages* (1931) Tarski stated that a definition of truth for colloquial language is impossible. Not only can we not hold a positive definition of this concept in ordinary language but even the consistent use of this concept in conformity with the laws of logic is impossible[17]. Tarski was adamant about the impossibility of *defining* truth, particularly in ordinary language, but this does not mean that the semantic conception of truth cannot have any bearing on ordinary human languages, particularly as they appear in scientific statements.

Popper was clearly observant of this fact and saw that we could for test statements (that is our scientific hypotheses) and other assertions of ordinary language "proceed with caution". If under Tarski's proscription a test statement is clear in its content, that is, materially adequate as well as correct in form, we can assert that a statement is consistent with the meaning '*x* is a true sentence'. This holds as long as the premises are intuitively clear and do not, in Tarski's words, lead to obvious contradictions as is the case with the *antinomy of the liar*[18]. Based

[15] K. R. Popper, *Unended Quest: An Intellectual Autobiography*, London, Routledge, 1993, p. 99. Where Popper states that: *…all these precise methods were confined to formalized languages, and could not, as Tarski had shown, be applied to ordinary language (with its "universalistic" character). Nevertheless it was clear that we could learn from Tarski's analysis how to use, with a little care, the notion of truth in ordinary discourse, and to use it, moreover, in its ordinary sense – as correspondence to the facts. I decided in the end that what Tarski had done was to show that once we had understood the distinction between an object language and a (semantic) meta-language – a language in which we can speak about statements and about facts – there was no great difficulty left in understanding how a statement could correspond to a fact.*

[16] Alfred Tarski, *The Semantic Conception of Truth and the Foundations of Semantics*, "Philosophy and Phenomenological Research", nr. 4, 1944, p. 341–376.

[17] Alfred Tarski, *Logic, Semantics, Metamathematics* …, p. 153.

[18] The paragraph that enables the cautious use of the semantic theory of truth in ordinary language, which is the most likely source for Popper's stance regarding this can be seen in the English publication of Tarski's 1931 paper, *The Concept of Truth in Formalized Languages* (1956), p. 157: *Sentences which are analogous to (3) and (4) seem to be clear and completely in accordance with the meaning of the word 'true' which was expressed in the formulation (1). In regard to the clarity of their content and the correctness of their form they arouse, in general, no doubt (assuming of course that no such doubts are involved in the sentences which we substitute of the symbol 'p' in (2)).*

upon these minimal requirements Popper had grounds to assert the applicability of this semantic theory of truth beyond the realm of semantics into the realm of everyday language of scientific statements and statements of a political and social nature. However, this raises further questions. If Popper correctly identified that within Tarski's work such implications for a formal semantic theory of truth were possible in the realm of ordinary language, how exactly should one go about applying this? More seriously how is the semantic concept of truth related to other psychological conceptions of truth that we commonly use in everyday speech?

Within Tarski's prohibition of holding a *definition* of truth in the 'object language' and the possibility of saying of a statement in ordinary language that it is 'true' that is, it satisfies the minimal requirements of being materially adequate and formally correct, lies much of the tension and particular characteristics of Popper's political philosophy. A direct result of this can be seen in Popper's belief in the impossibility of holding fixed definitions for political and social theories, which separates the social from the natural sciences. In a letter to Hayek, Popper describes himself as *a conscious and determined enemy of definitions*.[19] Popper replaced definition with a notion he called *diarrhesis* that he appropriated from Plato's *Laws* (932e), which effectively means a 'division' or 'distinction'. Explaining the advantage of *diarrhesis* over the definition of a word in that *definitions are attempts to lay down some 'absolute' meaning of a term in advance*, knowledge of which for Popper is impossible. *Diarrhesis*, however, holds that the meaning of a concept is always *ad hoc* and pertains to the current problem under discussion[20]. Thus, the distinctions developed and terms used can only be understood in regard to the argument into which they are situated.

For Popper words contain meaning relative to the argument in which they appear. Popper states that *distinctions* (diarrhesis) *may be always refined, that is, carried one step further; but one should only do so if the needs of the discussion require it.*[21] The implication of Popper's understanding of meaning as *diarrhesis* extends past the problems of definition of terms and the positive understanding of notions. It also increases the difficulty of linking the various aspects of Popper's thought into a whole as one cannot simply relate the logical relationship of arguments to certain constant terms, which may evolve in terms of their content but nonetheless refer to the same thing. For example, there is no relationship whatsoever between the notion of 'world' in *The Open Society* to the same notion in *Knowledge and the Mind-Body Problem* (1994), the term is once again understood differently in *A World of Propensities* (1990).

[19] *Letter of Correspondence*: Popper to Hayek, 20th October, 1964.

[20] *Letter of Correspondence*: Popper to Hayek, 20th October, 1964, 1.

[21] *Letter of Correspondence*: Popper to Hayek, 20th October, 1964, 2. This stopping point of the minimum needs of a problem situation, reflects Popper's position of restricting his ontology to "three worlds" rather than allowing for an ontology of worlds 4, 5, etc. See K. R. Popper, *Knowledge and The Mind-Body Problem: In Defence of Interaction*, London and New York, Routledge, 1994.

From an understanding of this notion of *diarrhesis* we can gain important clues into Popper's understanding of objectivity and how objective knowledge grows conjecturally through the 'argumentative' or 'explanatory' function of language.[22] As Tarski emphasised the logical impossibility of the consistent use of a concept in colloquial language, Popper turned to a development of Bühler's theory of language function to develop a theory of objectivity which adheres to the logical prohibitions espoused by Tarski. It is not argued that Popper's 'negativism' is the result of the direct influence of Tarski, rather it is seen as being based upon the presupposition that knowledge grows, yet we cannot hold any positive concepts or definitions as being true in the most absolute sense. Tarski's role is best seen as enabling an epistemological optimism within a sceptical framework. As such, it provides a central component of his critique of the authoritarian understanding of the ability to possess a known conception of truth from which one can remodel humanity and society.

4. THE DISTINCTION BETWEEN SCIENTIFIC STATEMENTS AND OTHER MODES OF ORDINARY LANGUAGES

The acceptance of Tarski's semantic theory of truth raises a further problem for Popper's developing thought system. The problem is of applying a meta-linguistic theory designed for formal mathematical languages to ordinary human languages. A further problem arises when ordinary language is further broken down into the ordinary language of scientific statements and other instances of human utterances, which for Popper are evolutionarily interrelated. One can see that the second mode of ordinary language, that of daily utterances, (and perhaps other non-linguistic expressive forms of communication) were not really what Popper had in mind when applying Tarski's theory to ordinary language, but it nonetheless became a necessary adduction as his epistemology increasingly took on an evolutionary character. However, these daily utterances and expressions as they are a critical part of Popper's evolutionary theory must also be treated in a manner consistent with scientific statements. It is also interesting to note the way that Popper applied a theory from one field of inquiry to that of another.

Tarski's theory of truth makes the distinction between colloquial language in §1 of *The Concept of Truth in Formalized Languages* and the formalised languages of the deductive sciences in § 2, 3, 4 and 5 of this work. It ought to be understood that Popper's work also makes similar distinctions between the deductive psychological work of his early years (in which he aimed to recapture in all of his

[22] For Popper's development of Bühler's theory of language function see: K. R. Popper, *Knowledge and The Mind-Body Problem: In Defence of Interaction*…, p. 84.

epistemological and methodological writings) and his latter work in political and social philosophy which develops arguments through analogous methods of inference. Of the latter *Schöpferische Selbstkritik in Wissenschaft und Kunst* (1979) provides the most poignant example, as the title indicates analogy from the field of science is used to develop an aesthetic theory. Popper's evolutionism is another example of this latter trend in which evolutionary arguments from biology are extended to develop a theory of human institutions which can be seen in his letter of correspondence with Hayek as dated, 28th May 1944[23]. The epistemological distinction that Popper made between the positive possibility of attaining knowledge in the different fields of inquiry led to the differing modes of evidential corroboration and possibilities of falsification. The conclusions that Tarski arrived at to the problem of the *definition of truth* deserve to be analysed further for the restrictions they placed on Popper's ability to develop theories. Thus, we must once again return to the question, to what extent was Popper's theorisation subject to the logical arguments developed by Tarski in relation to the problem of the definition of truth?

A definition of truth for ordinary languages of every day usage is not possible according to Popper, yet he rightly saw that with caution Tarski's semantic theory can confer theoretical benefits on the understanding of human communication beyond the narrow field of semantics. In 1944 Tarski even stated that: *I happen to believe that the semantic conception does conform to a very considerable extent with the common-sense usage*[24]. As mentioned above, in *The Open Society*, Popper enlarged the sphere of this semantic theory and its notion of truth to the field of ethics by attempting develop valid norms which could be used proscriptively in our moral actions[25]. The belief in the successfulness of this method could also have proven to be an effective enough method which would inspire later applications of theories from science and logic to social and political problems. This is a noteworthy instance in Popper's thought in which an argument based upon what Rudolf Carnap understood as implication from analogy is made[26]. In other words, if an argument is successful in one field of inquiry it is reasonable to assume that the argument and empirical evidence also carries validity when applied to another field of inquiry.

[23] *Letter of correspondence*: Popper to Hayek 28th May 1944.

[24] Alfred Tarski, *The Semantic Conception of Truth and the Foundations of Semantics*. See *The Philosophy of Language*, A. P. Martinich (ed.), p. 81.

[25] K. R. Popper, *The Open Society and Its Enemies*, London and New York, Routledge, 1962, vol. 1, p. 64, note 5(2).

[26] See R. Carnap, *Logical Foundations of Probability*, University of Chicago Press, London, 1962, § 44, p. 207. This is another instance in which Joseph Agassi was correct in asserting that Popper's thought contains a "whiff of Inductivism"; see Agassi (1993), p. 118. In the letter from Popper to Hayek 20th October 1964, Popper raises the similarity of the distinction between abstract and concrete societies (the problem in which the notion of *diarrhesis* was related to) with formalised projective geometry, which reveals much about the way Popper used analogy to support his arguments in political philosophy.

5. DEFINING TRUTH AS OBJECTIVE 'SATISFACTION' OR SUBJECTIVE 'CONVICTION'

It is clear that in Popper's methodological thought that he understood the notion of truth as consisting of properties that were also sufficiently expressed in the notions of 'corroboration' and later 'verisimilitude'. In this sense Popper spoke of truth much in the way Tarski did, even though its application was seen to operate in modes other than that of a formal meta-language. Tarski focused on the notion of 'satisfaction' rather than on the notion of truth *per se*[27]. When Popper spoke of truth in statements that are not convictional the meaning of this term seems to closely reflect the way Tarski spoke of satisfaction. However, for Popper truth was seen in relation to a criterion of satisfaction for a hypothesis within the method of falsification. In this sense the criterion for truth or satisfaction cannot be seen as identical for Popper as it was for Tarski. Tarski's notion of truth as Popper developed it may seem restrictive in that it is an objective semantic theory that does not allow for subjective and unutterable convictions and feelings to be admitted as sources of truth in themselves. Why did such a defined and constricting notion of truth appeal to an individual such as Popper whose later works extended into the realm of the subjective? It is clear that both Tarski and Popper both understood very well the complexity and plurality of this notion. Tarski himself claimed that he hoped that nothing he said would be interpreted as a claim that the semantic conception of truth is the "right" or "only possible" one[28]. Tarski understood that in every day language there are many concepts that share the same word 'truth', and that these are often based upon various psychological criteria which allows a particular concept of truth to be said to exist in relation to a particular sate of affairs.

In Popper's only theoretical writings concerning the notion of truth, he only ever referred to the correspondence theory as the one that he supported. This, however, does not mean that Popper understood philosophical concerns with the conception of truth from this theoretical perspective alone. His extensive use of the term 'conviction' as in the expression "it is my conviction that…" or the term 'principles' such as can be seen in the 'Ethical Principles' and 'professional ethics' in *The World of Parmenides* (1998) attest to an appreciation of the non-objective sources of truth, despite the tendency to reserve the name 'truth' to the correspondence conception[29]. Popper's language concerning the notion of truth is problematical, and the words he often uses to describe this notion can easily be

[27] In *The Semantic Conception of Truth and the Foundations of Semantics*, Tarski states in (1) that the main problem is giving a *satisfactory definition* of the notion of truth. The satisfactoriness of this definition rests upon its formal correctness and material adequacy. See article in *The Philosophy of Language*, A. P. Martinich (ed.), p. 69–91.

[28] Alfred Tarski, *The Semantic Conception of Truth and the Foundations of Semantics*, in *The Philosophy of Language*, A. P. Martinich (ed.), p. 78.

[29] K. R. Popper, *The World of Parmenides: Essays on the Presocratic Enlightenment*, Arne F. Petersen, and Jørgen Mejer (eds.), London and New York, Routledge, 1998.

used to denote different concepts. Popper wrote with such conviction of the goodness that exists in scientific discovery, music and art that it is evident that there is a subjective sense in which the individual can speak of the existence of certainty or truth, however this is not what Popper meant by the term *absolute truth*. Popper's *absolute truth* is not absolute in the truest sense of the word, yet the forcefulness of conviction he displayed in matters pertaining to instances of subjectively perceived law-like certainty show that he must have had an understanding of truth capable of encapsulating the non-rational and non-objective.

6. THE PROBLEMATIC COMBINATION OF BÜHLER'S LINGUISTIC THEORY AND TARSKI'S TRUTH THEORY

In *Popper and Tarski* (1999) Miller raises two problems that complicate Popper's treatment of language in relation to Tarski's theory of truth. These problems are the *phenomenon of vagueness* and the *problem of selectivity*[30]. The former problem admits of the vagueness inherent in language as ordinarily used and the way that this is in a state of conflict with the world which is not vague. This then provides a problem in finding a correspondence between a true statement and the world of facts. Miller explains Tarski's solution to the "convictional" holding of a correspondence between a 'vague statement' and the world as follows:

> *The statement "Snow is white" is doubtless vague, but according to Tarski it is true if and only if snow is white. That does not postulate a vague aspect to the world, but states –vaguely, of course – a condition on the world that has to be satisfied if the statement "Snow is white" is to be true*[31].

Indeed, Tarski's lack of a criterion for truth can be seen along with his proscription for the minimal conditions of *satisfaction* of certain minimal requirements. Once again we come to the problem of the discontinuity of speaking of 'satisfaction' and of 'truth', of which Popper despite Miller's statement of the problem of vagueness, is inclined to speak in the bold language of 'truth' rather than the more cautious 'satisfaction'.

Miller's second concern is that of selectivity. This problem put simply is that which describes the distortion in our knowledge of the object of inquiry as we specialise, focus or simplify the 'whole situation' into something manageable. Miller makes reference to Popper's writings on situational models in *The Myth of the Framework* (1994) in which Popper stated that he did not believe that models whether in physics or the social sciences can be said to be true[32]. This is due to the

[30] See David Miller, *Popper and Tarski*, in *Popper's Open Society After Fifty Years*, Jan Jarvie and Sandra Pralong (eds.), …, p. 66–67.

[31] David Miller, *op. cit*., p. 66.

[32] K.R. Popper, *The Myth of the Framework*, 1994, London, Routledge, p. 172.

process of oversimplification in which we choose to focus on certain facts while ignoring others. Miller concludes his paper by emphasising that Tarski's objectivist theory of truth makes obvious the existence of a dualism of facts and decisions. This dualism, as Miller so eloquently put it, "patrols the boundary of the realm of facts itself"[33]. If this remained the case for Popper, and Miller has shown that it could not have been otherwise, then how could Popper overcome this dualism of facts and decisions, of a vague language and a world which is not vague in order to be able to speak confidently of truth? That is deciding upon what sort of objective knowledge enables us to speak of intellectual enterprises or claims as being true and what sort *ought not to be taken too seriously*? [34]. From *The Open Society* it appears that Popper accepted this irreducible dualism, nevertheless he took as he stated *the idea of absolute truth – of correspondence to the facts –as a kind of model for the realm of standards.* Tarski enables us to *seek* for absolutely true propositions in the realm of facts or at least for propositions which come nearer to the truth[35]. We can never *find* a proposition that is true for all time and places, Tarski did not provide us with a *criterion* for stating that a proposition is true and neither does Popper.

I propose that the way Popper was able to overcome this dilemma in order to fulfil his convictional need to speak of truth, and thereby avoiding the moral and political dangers of relativism lies somewhere in the way he integrated Tarski's theory of truth into Bühler's psycho-linguistics. Thus, it is not only necessary to speak of Popper and Tarski in relation to the problem of truth but also of Bühler's influence upon Popper as well. Bühler's theory was the only other theory concerning language that Popper took to heart. If truth is a notion for Popper that is inherently linked with communication, it is necessary to view this notion as Popper would have, that is, in relation to his understanding of linguistics, or more correctly

[33] David Miller, *op. cit*., p. 68.

[34] Besides Popper's letters of correspondence, particularly with Hayek, examples of this can be found in Karl R. Popper, *Schöpferische Selbstkritik in Wissenschaft und Kunst*, Reder zur Eröffnung der Salzburger Festspiele, 1979. Particularly page 29 where it is stated; *Ich möchte betonen, daß alles, was ich darüber sagen werde, spekulativ ist, aus Vermutungen besteht.* Also see K. R. Popper, *Bücher und Gedanken: Das erste Buch Europas*, in *Auf der Suche nach einer besseren Welt: Vorträge und Aufsätze aus dreißig Jahren* (1984), Piper Verlag GmbH, München, 2004, p. 120. English unpublished version titled *Unintended Consequences: The Origin of the European Book*. In this lecture Popper communicates for the first time the thesis that European culture began with the first publication of the works of Homer in book form. He then proceeds to give an account of the effect of this on the publication of the works of ensuing thinkers in ancient Greece. It is interesting to note that at this stage of Popper's career he is happy to develop hypotheses that are non testable yet are and therefore states *should not be taken too seriously*, yet they are seen to be both meaningful and important (Meine Hypothese…ist natürlich nicht uberprüfbar. Historische Parallelen sollte man nie zu Ernst nehmen). The constant use of the expression *I conjecture (ich vermute)* also aides in this illusion, however, one can be assured that this theorising is just as serious as his scientific thought.

[35] K. R. Popper, *The Open Society and Its Enemies*, vol. 2, p. 385.

the extension he made to Karl Bühler's Theory of Language Function[36]. Hence, the way that Popper received Tarski's work on a Semantic Theory of Truth would become for Popper the needed common sense notion of truth which could also be integrated into Bühler's Theory of Language Function[37]. This enabled the survival and evolution of Bühler's work into what would become Popper's late "World Three" ontology. It appears that when Popper appropriated Tarski's criterion for truth he did so with Bühler's notion of the relationship of truth to communicative language in mind rather than as Tarski himself intended the notion to be developed. Following Bühler's *empractic* theory of language (that is built into praxis) Popper came to see the act of communication on a practical common sense problem-solving level as the realm in which truth operates and it is the evolutionary and survival significance of communication that gives truth meaning. The link between language and evolutionary necessitated problem-solving, developed to the point that Popper saw a unity of method that drives the search for truth from the amoeba to Einstein.

7. **CONCLUSION**

An understanding of Popper's intellectual response to his exposure of Tarski's ideas from 1935 onwards provides salient clues for re-interpreting the argumentative oddities in his later thought. From the philosophical standpoint Popper keenly observed that Tarski's work on the problem of finding a definition of truth for semantics had implications that went well beyond the field of semantics or science at large and could be used, with a measure of care, to shape arguments in political and social philosophy as well. The presuppositions associated with this argument contributed to the formidable nature of *The Open Society and Its Enemies*. Despite the care and attention in which Popper achieved this integration of a notion of truth from one discipline to that of another, the implications for his political philosophy can not be said to be unproblematic. The epistemic restrictiveness of holding an objective notion of truth would lead to a strange use of linguistic terminology in the framing of arguments in his latter theorising on aesthetics, institutions and tradition. This indicates the greater importance that ought to be focused upon certain linguistic idiosyncrasies in his non-scientific thought. It can be seen that terms such as 'principles', 'intuitive satisfactoriness',

[36] For Popper's elucidation of, what I call the Popper-Bühler Linguistic Schema, see K. R. Popper, *Knowledge and The Mind-Body Problem: In Defence of Interaction*, London and New York: Routledge, 1994. p. 84.

[37] For the importance of the work of the Würzburg School, in particular the thought of Karl Bühler upon Popper's thought see Alt, Jürgen August, *Die Frühschriften Poppers*, Peter Lang, Frankfurt am Main, 1982. Also see William Berkson, and John Wettersten, *Learning from Error: Karl Popper's Psychology of Learning*, Open Court Publishing, 1984.

'conviction', or 'not to be taken too seriously' have implications for our understanding of the justification behind Popper's political arguments. The use of an objective notion of truth, in relation to the various conceptions denoted by this word (and similar words such as conviction) in Popper's political and methodological discourse is evidence of a highly sophisticated understanding of the role of truth for human knowledge.

The strength of the naturalistic analogical method for Popper's political philosophy can be seen in its ability to provide new criticisms of concepts of truth and freedom. By adhering strictly to a *negativism* originating in Kant's *Critique of Pure Reason*, Popper's political philosophy was most effective in critiquing existing political doctrines rather than positively developing any sort of proscriptive theory. A proscriptive theory would necessary involve making an unfalsifiable hypothesis based upon dogmatic moral convictions, which is hardly a secure way to grow new knowledge. However the knowledge gained through the criticism of existing doctrines can be seen to lead to new knowledge through the elimination of erroneous assumptions inherent in a particular political doctrine. Tarski's theory of truth as applied analogously from formal semantics to everyday usage, gave Popper the argumentative ability to assert whether we can say of a theory that it is 'false' if it does not meet certain methodological standards. It also enables us to talk of a theory or concept as being 'true' (even if only to a certain degree) even when it has failed to measure up to falsification as it conforms to our common daily use of this term. Hence, for Popper it can be said to be true that totalitarian regimes are dogmatic and that such regimes are harmful as what they uncritically take as their doctrines do not allow for a systematic elimination of error.

REFERENCES

Material from the Karl Popper Archives, University of Klagenfurt, Austria
354-9 Letters, Tarski, Alfred 1935 81
3005.13 Letters, Hayek, F. A. 1940–47

Published Sources

Agassi, Joseph, *A Philosopher's Apprentice: In Karl Popper's Workshop*, Rodopi B. V., Amsterdam, 1993.

Alt, Jürgen August, *Die Frühschriften Poppers*, Peter Lang, Frankfurt am Main, 1982.

Berkson, William, and Wettersten, John, *Learning From Error: Karl Popper's Psychology of Learning*, Open Court Publishing, 1984.

Carnap, Rudolf, *The Continuum of Inductive Methods*, Eschbach, Achim (ed.), Chicago: The University of Chicago Press, 1952.

Eschbach, Achim (eds.) *Karl Bühler's Theory of Language Proceedings of the Conferences Held at Kirchberg, August 26, 1984 and Essen, November 21–24, 1984.* John Benjamins Publishing Company: Amsterdam, Philadelphia, 1988.

Hacohen, Malachi H., *Karl Popper – The Formative Years, 1902–1945. Politics and Philosophy in Interwar Vienna*. Cambridge University Press, 2000.

Hacohen, Malachi H., *Dilemmas of Cosmopolitanism: Karl Popper, Jewish Identity, and "Central European Culture"*, "The Journal of Modern History", vol. 71, no. 1 (Mar., 1999), 105–149.

Innis, Robert, Karl, E., *Bühler's Semiotic Foundations of Language Theory*, Plenum Publishers, New York, 1982.
Miller, David, *Out of Error: Further Essays on Critical Rationalism*, Aldershot, Burlington: Ashgate, 2006.
Miller, David, *Popper and Tarski*, in *Popper's Open Society after Fifty Years*, Ian Jarvie and Sandra Pralong (eds.), Routledge: London/ New York, 1999, 56–70.
Petersen, Arne Friemuth, *The Role of Problems and Problem Solving in Popper's Early Work on Psychology*, "Philosophy of the Social Sciences", vol. 14, no. 2, 1984, 239–250.
Popper, Karl R., *Frühe Schriften*, Mohr Siebeck: Tübingen, 2006.
Popper, Karl R., *Wissen und Sprache*, in *Alle Menschen sind Philosophen*, Piper Verlag, Munich, 2006.
Popper, Karl R., *Bücher und Gedanken: Das erste Buch Europas*, in *Auf der Suche nach einer besseren Welt: Vorträge und Aufsätze aus dreißig Jahren*, (1984), Piper Verlag GmbH, München, 2004.
Popper, Karl R., *The World of Parmenides: Essays on the Presocratic Enlightenment*, Arne F. Petersen, and Jørgen Mejer (eds.), London and New York: Routledge, 1998.
Popper, Karl R., *Knowledge and the Mind-Body Problem: In Defence of Interaction*, London and New York: Routledge, 1994.
Popper, Karl R., *Unended Quest: An Intellectual Autobiography*, 1974. London: Routledge, 1993.
Popper, Karl R., *A World of Propensities*, Bristol: Thoemmes, 1990.
Popper, Karl R., *Die beiden Grundprobleme der Erkenntnistheorie*, J. C. B. Mohr (Paul Siebeck), Tübingen,1979.
Popper, Karl R., *Schöpferische Selbstkritik in Wissenschaft und Kunst*, Reder zur Eröffnung der Saltzburger Festspiele, 1979.
Popper, Karl R., *Objective Knowledge: An Evolutionary Approach*, Oxford University Press, 1972.
Popper, Karl R., *The Logic of Scientific Discovery*, 1959. New York: Harper and Row, 1968.
Popper, Karl R., *Conjectures and Refutations: The Growth of Scientific Knowledge*. 1963. London, 1989.
Popper, Karl R., *The Logic of the Social Sciences*, [1961] in *The Positivist Dispute in German Sociology*, Theodor Adorno (eds.), Glyn Adey and David Frisby translation. Heinemann Educational Books: London, 1976, p. 87–104.
Popper, Karl R., *The Open Society and Its Enemies*, vol. 1 (*The Spell of Plato*) & vol. 2 (*The High Tide of Prophecy: Hegel, Marx, and the Aftermath*), 1945. London and New York; Routledge, 1962.
Stokes, Geoffery, *Popper: Philosophy, Politics and Scientific Method*, Cambridge: Polity Press, 1998.
Tarski, Alfred, *The Semantic Conception of Truth and the Foundations of Semantics*, "Philosophy and Phenomenological Research", 4, p. 341–376. 1944.
Tarski, Alfred, *Logic, Semantics, Metamathematics: Papers From 1923 to 1938*, Oxford: 1956.
Tarski, Alfred, *The Semantic Conception of Truth and the Foundations of Semantics*, in *The Philosophy of Language*, A. P. Martinich (eds.), 4th edn., Oxford University Press: New York, 2001, 69–91.
Wettersten, John R., *New Insights on Young Popper*, "Journal of the History of Ideas", 66.4, 2005.
Wolenski, Jan and Eckehart Köhler (eds.), *Alfred Tarski and the Vienna Circle: Austro-Polish Connections in Logical Empiricism*, Kluwer Academic Publishers: Dordrecht, Boston, London, 1999.
Wolenski, Jan, *Logic and Philosophy in the Lvov-Warsaw School*, Kluwer Academic Publishers: Dordrecht/Boston/London, 1989.