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Towards Exploring an Enduring Liberal-Communitarianism in Karl Popper Through His Intellectual Biography

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Abstract
This paper offers here some new insights into the philosophy of critical rationalism through some accounts of Popper's biography. In particular, it elaborates on the features of an enduring liberal-communitarianism in Popper that many commentators upon Popper do not see. The two important features are the individual and social aspects of Popper's critical rationalism. These are, in my view, very essential to understanding Popper's philosophy of science and Popper's political philosophy. Events of Popper's life together informed the development of his philosophy of science and his political philosophy. An essential balance in both can best be grasped by newly considering Popper's biography and its context.
Keywords: rationalism, liberal-communitarianism, individual, social, biography, Popper

Introduction

Karl Popper (1902-1994) officially esteemed both open criticism of any idea and boldness of theoretical thought. As a thinker Popper was himself audacious enough to denounce the highly revered Republic of Plato (c.428-c. 348 BCE), to attack the ostensibly "scientific" interpretation of history of Karl Marx (1818-1883), terming it unscientific, to question the scientific status of the theory of psychoanalysis of Sigmund Freud (1856-1939) and of the "individual psychology" of Alfred Adler (1870-1937), to upset the verification principle of the Vienna Circle and then to stand intellectually opposed to logical empiricism. Popper himself boldly advanced new ways to think about the nature of science, about cosmology and whether the world is deterministic, about what probability is, about the meaning of quantum mechanics, and about the qualities of freedom and security in an intellectually open society. It is well known that criticism is the touchstone concept of Popper's philosophy. Every element of human thinking should be open to potential criticism, Popper believed. Likewise Popper believed that every element of human practice should be open to potential criticism. Yet, however roundly Popper valued the ability to dispatch a formerly received way of thinking or to invent a bold new form of theoretical thought, he at the same time professed the need to be cautious in action. Ambitions that are utopian or revolutionary seemed to Popper always unacceptable. We must always be open to reforming our practices, but we must attempt this slowly and piecemeal. Every change that we make we must hold open to criticism. It should always remain possible for us to judge that some past reform of ours was a misstep.

Popper's contribution to the philosophy of science, particularly to scientific methodology, is very remarkable. Bryan Magee (1930-) cited the mathematician and theoretical astronomer, Sir Hermann Bondi (1919-2005) saying that "there is no more to science than its method, and there is no more to its method than Popper has said"[1]. Yet when people know only in caricature what Popper's philosophy of science is, claims like these seem incredible. To make the high praise of Popper by Magee or Bondi credible, you need to study the complex balance of ideas in Popper's philosophy.

Popper, philosopher of science

Particularly after he moved from the Canterbury University College, Christchurch, New Zealand, to the London School of Economics in 1946 as the first Professor of Philosophy of Science and Logic, Popper's primary claim to fame has concerned the philosophy of science. His lectures influenced Imre Lakatos (1922-1974), Paul Feyerabend (1924-1994), and John Watkins (1924-1999) who number amongst the most prominent philosophers of science in the twentieth century. His lectures and books continue to have prolific and significant influences on many contemporary philosophers. It is significant to admit that Popper perhaps continues to be the most widely recognized philosopher of science by actual scientists. The acknowledgements by two pre-eminent scientists, J.C. Eccles (1903-1997) and P.B. Medawar (1915-1987) (each a winner, respectively in 1963 and in 1960, of a Nobel Prize) on the influence that Popper had on their work helps ensure Popper's standing as the twentieth century philosopher of science most influential upon science.

To study the origins of Popper's philosophy of science is partly to consider the key personal commitments and life experiences which influenced the development of Popper's philosophy of critical rationalism. Yet, another aspect that is personal to Popper concerns how those intellectual experiences helped to shape the moral core of his thinking and helped him to balance two critical aspects of his philosophy: the individual and social aspects. Typically, discussions of Popper's critical rationalism consider chiefly the

[1] Bryan Magee, *Karl Popper (*New York: The Viking Press, 1973), 2-3.

individual aspects. However, this paper delves the more into Popper's enduring communitarianism. With respect not only to Popper's political philosophy but equally his philosophy of science, it is important to emphasize that a kind of balanced philosophy, a liberal-communitarian philosophy that is constituted by both individual and social aspects, can be properly called Popperian. Popper's life experiences, such as his encounters with Marxian socialism and the theories of psychology of his fellow Viennese Freud and Adler, as well as the intellectual influences on him, such as that of Immanuel Kant (1724-1804), Ludwig Wittgenstein (1889-1951) and the members of the Vienna Circle, shaped both the individual and social aspects of his critical rationalism.

Popper's first published book *Logik der Forschung* (1934) which was later translated into English as *The Logic of Scientific Discovery* (1959) can be regarded as laying a foundation for a deductive method in science (by hypothesis and test) while *The Open Society and its Enemies* (1945) and *The Poverty of Historicism* (1957) are viewed as relevant only in the political realm. Yet it is the ideas in these various books in combination that make up Popper's critical rationalism. According to the philosophy of critical rationalism, it is not only in politics but also in science that the individual and social elements are intertwined.

Popper did centrally consider the individual, both in science and in the political sphere. In both science and politics the freedom that he lauded (and demanded that we protect) is that of the individual. An element of the background for this is that Popper lived his formative years during what still seemed a heroic age in science. At the early stage of his intellectual life, it still seemed that significant discoveries in science proceeded out of the crucible of individual minds. This is why Popper is sometimes perceived as shaping his understanding of science accordingly, as though the scientific method is one that is wielded by the individual researcher, and science ends up being just what a good scientist does, times the number of scientists that there are. Such a caricature of Popper on scientific method possesses a grain of truth, but on the other hand Popper did recognize both earlier and more deeply than any of his contemporaries in philosophy of science the need to acknowledge social or communitarian aspects of the scientific process.

Popper's outlook on science is no doubt significantly individualistic, but there is also a communitarian balance. He emphasized the fallibility of every conjecture and the need for inter-subjective criticism and severe testing of every idea that is advanced. One aspect of Popper's communitarianism is his insistence that scientific conjectures are all brought to the public domain where peer-review is allowed and is essential.

Having lived near the end of what was a heroic age in science the significant effect of this on Popper's understanding of the relationship between individual and community can be found in his reaction to the current dominant strand of thought of his time, namely logical empiricism. Contra logical empiricism Popper developed a different variant of the concept of the unity of method. The logical empiricists had argued that science follows one and the same universal method across all its sub-disciplines and alone is meaningful. Any other kind of inquiry is meaningless, the logical empiricists insisted. However, Popper held that even though falsification is a single specifiable method which can be taken as a criterial for the standing as a science of all the sciences it does not preclude other modes of inquiry. Popper had in several of his writings stated that his philosophy of science was not averse to metaphysics. W. W. Bartley III has written that Imre Lakatos's "Methodology of Scientific Research Programs" merely takes Popper's own methodology of metaphysical research programs and changes the name 'metaphysical' to 'scientific'. Bartley's citations of Popper in that essay defends the claim on Popper as a methodological pluralist. Popper also held that "there can be non-scientific, metaphysical inquiry, that later emerges as a mode of scientific inquiry. We are not to condemn the metaphysical phase, for that might have been a necessary step to get a new science going" [1] This is an argument for plurality of methods; and it is social in character.

From this perspective, the development of Popper's philosophy of science can be said to have come as a reaction to some of the doctrines of science upheld at that time. Although his views radically challenge many strands of thought in his time, his philosophy is still an offshoot of some of them.

I will argue next that Popper learned significant lessons from Kant concerning the need to consider science to be communitarian. Popper does not let go of individualism entirely, but he nevertheless balances this with equal emphasis on the community. Thus the image that science had begun within and still remained within a heroic age, while it was undoubtedly part of Popper's intellectual context and influenced his philosophy, by no means completely took over Popper's thinking.

Some influences of Kant

Popper had high admiration for Kant. Popper in fact referred to himself as "an unorthodox Kantian"[1]. A Kantian

[1] See Karl Popper, *The Logic of Scientific Discovery* (London and New York: Routledge, 1959), 19, 38, 252. William W Bartley III, "Theories of Demarcation between Science and Metaphysics," in *Problems in the Philosophy of Science,* eds. Imre Lakatos and Alan Musgrave (Amsterdam: North-Holland, 1968), 40-64. William W Bartley, "Reply to Karl Popper". *Problems in the Philosophy of Science,* eds. Imre Lakatos and Alan Musgrave, (1968), 113-119. Karl Popper, "Remarks on the Problems of Demarcation and of Rationality," *Problems in Problems in the Philosophy of Science,* eds. Imre Lakatos and Alan Musgrave, (1968), 93-98.

is one who accedes to the principles underlying Kant's philosophy without significant revision. "Unorthodox" is of course a caveat on "without significant revision". His philosophical interest in Kant led Popper to devote an entire chapter to Kant in *Conjectures and Refutations: The Growth of Knowledge*[2]. This strong influence of Kant on Popper is discernible both in Popper's idea of individual freedom and his socio-communitarian elements.

Let us be clear that Kant models balance between individualism and communitarianism. In his *Grounding for the Metaphysics of Morals* (1785), Kant viewed the human individual as a rationally self-conscious being with "impure" freedom of choice. He considered that for an individual will to be regarded as "free", it must be understood as capable of effecting causal power without being caused to do so. Kant himself averred, however, that the idea of a lawless free will, that is, a will acting without any causal structure, is unintelligible, and consequently unacceptable. Therefore, a free will must be a will that acts under laws that it gives to itself[3]. Popper found this Kantian idea of ethical individualism to be convincing; and it was a doctrine that Popper developed into his idea of individual freedom. So, in one aspect of his political philosophy Popper favored individual freedom. His liberal political philosophy upheld the ultimate freedom, well-being and rights of the individual. This individualism that he derived from Kantian ethics permeates all aspects of his philosophy — from science to politics. As Anthony O'Hear acknowledges[4], Kantian ethical individualism was a presupposition of Popper's *The Logic of Scientific Discovery*.

Yet Popper's ethical individualism is balanced by Kant's prioritization of inter-subjectivity to subjectivity. Just as there is a socio-communitarian aspect of Popper's philosophy, there is good reason to see this as coming from Kant. Kant's categorical imperative denotes a moral unconditional requirement that all individuals must follow in all circumstances; it is justified as an end in itself. Kant[5] offers three basic formulations of this categorical imperative:

1. Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction.
2. Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end, but always at the same time as an end.
3. [A]ct as if [you] were through [your] maxim always a legislating member in the universal kingdom of ends.

Kant held these three formulations to be fully equivalent to one another. In which case, the three formulations of the categorical imperative are, in Kant's view, one principle, namely the supreme principle of morality.

Although the first and the second formulations do not seem broadly concerned with the idea of community of agents, the third formulation roundly delivers a socio-communitarian aspect of Kantian philosophy. The first formulation of the categorical imperative demands that the form of an individual's action is one that could be universalized. This formulation at first blush seems merely formal and in that way devoid of any communitarian import. However, that would be a wrong interpretation, if the first formulation really is equivalent to the other two. The second formulation narrowly exhibits a communitarian tendency, as it is concerned with the idea of the self whose action is considered in relation to some specific other person. The third formulation is roundly communitarian. Its moral proposition entails that every individual action must be considered in such a way as it concerns the entire community of agents and what it would be for that community to harmonize.

To consider the Kantian backdrop this way helps to make social element in Popper's philosophy comprehensible. The argument can be made that, from Kant's categorical imperative, Popper developed a social element for his liberal politics and in that way curtailed his individualism. It can then be averred that the central element of Popper's critical rationalism entails both individual and social aspects. The individual aspect upholds the sanctity of human freedom. However, such a commitment to human freedom does not in any way entail a disregard to community values of social relation. More importantly, the essentials of both individual and social aspects of Popper's philosophy are grounded in his epistemological and ethical arguments of the relational embeddedness of the 'self' with others.

What is noteworthy in both elements of Popper's idea of freedom is the fact that he was concerned about securing the community from possible hijack. He averred that we need to strengthen our democratic institutions. Although he advocated for modest (piecemeal) state interventionism, he warned against increasing the power of the state without being watchful. No change through which we would lose our freedom could truly advance us towards being more secure. State intervention should be limited to what is compatible with the protection of freedom. The consideration that people must be ever vigilant against possible suppression of human freedom is a plea for the piecemeal approach to social engineering. It is the basis for Popper's opposition

[1] Popper, *Unended Quest: An Intellectual Autobiography* (London: Routledge, 1974), 82
[2] Popper, *Conjectures and Refutations* (1963), 33-59
[3] Immanuel Kant, *Groundwork for the Metaphysics of Morals* (1785), trans. James Wesley Ellington (Cambridge, MA: Hackett Publishing, 1993), 3-6.
[4] Anthony O'Hear, *Karl Popper: Philosophy and Problems* (Cambridge: Cambridge University Press, 1995), 283
[5] Kant, *Groundwork (*1993), 30-43.

to utopian or holistic methods of social engineering. Only piecemeal measures are tractable and compatible with protection of human freedom. Utopian or holistic methods of social engineering would suppress freedom and ultimately render every human insecure[1].

The above assertion reveals that Popper balanced against his capability of audacity an anti-revolutionary tendency. He portrayed a positive regard for security: his philosophy is liberal-communitarian in how the two poles work together; his individual freedom with a necessity to make security secure, and the need to secure in society (the community) with the possibility for individual freedom.

Interaction with Wittgenstein

A second intellectual influence upon Popper which to Popper seems instructive mostly by negative example is that of Wittgenstein's philosophical consideration of language. Wittgenstein is notorious for having significantly changed his views, which establishes that we need to distinguish "the early Wittgenstein" from "the later Wittgenstein". However, Wittgenstein very much concentrates upon the nature of language in both periods. Wittgenstein wants to know the nature of language, how language represents the world and the implications of its nature for logic and mathematics.

In the *Tractatus (published in German in 1921),* the early Wittgenstein treated philosophy simply as an activity for clarification of thoughts through the analysis of language. The ideas are centered on a distinction between genuine (atomic) propositions that are meaningful and metaphysical propositions that are meaningless. Meaningful atomic propositions describe basic facts that can only be verified by experience. They describe 'possible state of affairs' or the general state of things that can be verified in the world. However, propositions that do not correspond to an actual state of affairs or rather those that cannot be verified by experience remain pseudo-propositions; as such, they are meaningless or nonsensical[2].

The later Wittgenstein developed a case that no language is possible except that is public and shared. In the *Philosophical Investigations,* Wittgenstein developed his "private-language argument" — namely, an argument that no truly private language is possible. Wittgenstein continued his examination of what it is for an utterance to be meaningful. In Wittgenstein's view, meaning of language must look beyond the individual sensational understanding of the speaker. Language is meaningful in principle only when it is subject to public standards. Wittgenstein's argument is against the possibility of a language in which "words … are to refer to what only the speaker can know — to his immediate private sensations …"[3] Such a private language would, Wittgenstein argued, be neither genuinely a language nor in any true way meaningful. There could not be such a language. The truth function of language is essential to what language is. An utterance truly is linguistic only if it bears that kind of relationship to understanding that establishes the possibility of judging the correctness of its use, "so the use of a word stands in need of a justification which everybody understands"[4].

It can be clearly interpreted that Wittgenstein's rejection of a private language may imply that language is something which must be shared by both the speaker and the listener. A genuine and meaningful language entails an objective/subjective distinction with respect to what is communicated and how it is received. The objective/subjective distinction embraces the fact that there is no language outside the context of the other speakers of the same language[5]. For this reason, one can view Wittgenstein's reproach of the very idea of a private language as an argument which embraces a social dimension to the meaning of language.

In the *Philosophical Investigations,* Wittgenstein is of the view that agreement in judgement is a condition of possibility of linguistic norms. This seems to suggest a social account of language. This perceived social character of language in Wittgenstein denotes that the linguistic meaning of words by agreement by all members of a community would provide the basis upon which words make meaning within the community. In other words, meaningful language is identified with how it is understood and accepted by public standards. Language is identified with how words can connote the same meaning to all members of the linguistic community.

With Wittgenstein's interpretative idea of the social character of language one is disposed to think that Popper also derived from Wittgenstein, much as he did from Kant, the communitarian element of his philosophy. Contrary to such expectation, Popper was very critical of Wittgenstein. Popper was contemptuous of Wittgenstein's fascination for language and only language.

First, Popper was critical of the notion that had emanated partly from Wittgenstein that verifiability as a criterion demarcates meaningful statements from meaningless ones. Such a view reduces all statements to ones which recount mere observation. Popper's contention was that Wittgenstein's verifiability criterion of

[1] Popper *The Open Society and Its Enemies: The Spell of Plato* (London: Routledge and Kegan Paul 1945), 122
[2] Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans., D. F. Pears (London: Routledge, 1921), 18
[3] *Wittgenstein, Philosophical Investigations (Oxford: Basil Blackwell, 1953), 243*
[4] *Ibid, 261*
[5] *Silvio Pinto, "Wittgenstein on the Social Character of Language" in CR´ITICA, Revista Hispanoamericana de Filosof´ıa Vol. XXXI, 93 (diciembre 1999): 75–103*

demarcation was an inadequate description of scientific statements. To Popper, scientific statements cannot be reduced to some truth-function of propositions that somehow derives them from observation[1].

Second, Popper considered that the issues and problems of philosophy should be viewed as broader than Wittgenstein had supposed. There is no way to reduce philosophy to mere philosophy of language. Popper even deprecated philosophy of language as narrow and mostly irrelevant. Popper rejected the claim that the source of philosophical difficulties is to be found in the misuse of language[2]. Popper's criticism of Wittgenstein appeared in the preface to the first English edition, (1959) of his The Logic of Scientific Discovery. Popper's position was that it is a mistake to assume that there are no genuine philosophical problems, or rather to assume that if there are any, they are just problems of linguistic usage[3]. Popper's response to this became widely known as 'Wittgenstein's poker'[4] when both philosophers met on 25th October, 1946 at a meeting of the Moral Sciences Club in Cambridge where Popper was invited to present a paper entitled "Are There Philosophical Problems"[5]. In the paper, Popper emphasized that there is more to philosophy than mere analysis of the meaning of words. One problem, according to Popper, concerned a traditional domain of philosophy in which many thinkers in Popper's day remained interested. This was the problem of cosmology[6].

It can be inferred from the above that the fascination and admiration that Popper had for Kant was not extended to Wittgenstein. One way to consider this difference would be in terms of which philosopher, Kant or Wittgenstein, is deeper. Kant did not limit philosophy to language because he considered conditions that there are even on that experience through which people could learn a language in the first place. Kant did not limit knowledge to experience, because Kant considered conditions on experience also to be knowable. The discussion of Kant's that most directly 'goes deeper' than Wittgenstein's no-private-language argument is in his third Critique (Critique of the Power of Judgment). There, Kant argued that unless our apprehension of beauty possesses significant universality then we would not stand together in epistemic community; we could not communicate; we would not be a community of cognizers and so no one individual could in the first place count as a cognizer[7]. This move of Kant's completes his critical system. With the third Critique one is far better able to understand the other two Critiques and their relationship to one another. In particular, looking to the first Critique, the Critique of Pure Reason, one is in able to understand the Transcendental Deduction of the Categories. (The categories are concepts that must precede human possession of a language, for they inform even that reach of experience though which language could be learned in the first place). So, instead of an argument against the possibility of a private language, Kant argued for something deeper, since he concluded that inter-subjectivity precedes subjectivity even within the experience through which language is learned. The other equivalence is Kant's view of the three formulations of the categorical imperative. This is one expression of Kant's concluding that inter-subjectivity is deeply prior to subjectivity. The prioritization of the community to the individual that Kant emphasized in his formulation of the categorical imperative is profound. The emphasis that Kant placed on ends in his third formulation is clearly a conception of community among moral agents.

Wittgenstein's conception of the social character of language might have served as a basis for the communitarian element in Popper's philosophy. Peter Munz (1921-2006) who was a student of both Popper and Wittgenstein has analyzed the Popper-Wittgenstein relationship in a way that brings to fore the inherent complementary ideas that transcend the Wittgenstein's poker debacle. Munz posited that the meaning of a proposed scientific theory (a conjecture) in Popper cannot be known until it is testable. Such a view does require that a conjecture must possess a tentative meaning, in such a sense that Wittgenstein supplied by his discussion of a speech community. According to Munz, Popper added needed recognition that if propositions are to have such meaning, then first the socio-political order in which they are put forward has to be free and open[8]. Munz's view is that the social elements in Wittgenstein's idea that meaningful propositions can be generated only within a social order and Popper's insistence upon the importance that the social order be free and open complement one another.

Popper's critical dealings with Wittgenstein and his contemptuousness of Wittgenstein's concentration upon language relate to Wittgenstein's attempt to reduce philosophy to mere analysis of the meaning of words. I agree with Popper that such attempted reduction is facile. (Moreover, Kant would agree with Popper that such

[1] Popper, *Conjecture and Refutation* (1963), 39
[2] See Popper on "Language and Mind-Body Problem: A Restatement of Interactionism" Proceedings of the 11th International Congress of *Philosophy*, Vol. VII (1953): 101-107
[3] Popper, *The Logic of Scientific Discovery* (London and New York: Routledge, 1959), 15
[4] See Edmonds, David, and John Eidinow. *Wittgenstein's Poker: The Story of a Ten-Minute Argument between Two Great Philosophers*. London: Harper Collins, 2001.
[5] Ibid, 340
[6] Popper, *Conjecture and Refutation* (1963), 40
[7] Kant, *Critique of the Power of Judgement*, trans. James Creed Meredith (Oxford: Oxford University Press, 2007), 74-75.
[8] Peter Munz, *Beyond Wittgenstein's Poker: New Light on Popper and Wittgenstein* (Surrey: Ashgate Publisher Ltd, 2004), 37-43

attempted reduction is facile.) The philosophical question of cosmology (concerning how it is that the universe is comprehensible rather than being incomprehensible) or more specific questions concerning space, time, and even whether there is a God, are not merely linguistic puzzles. There are metaphysical, epistemological and ethical concerns that give meaning to these issues. Indeed what makes these questions philosophical has everything to do with how they are not merely linguistic puzzles.

Nevertheless, we may acknowledge, with Munz, that community is necessary for the very possibility of speech, and that this point (that is from Wittgenstein, but that also is more deeply developed by Kant) duly fosters the communitarian elements in Popper's philosophy. The 'self' whose freedom is so important to Popper is inevitably relationally embedded. This is a condition on there being meaningful conjecture or criticism in the first place. Not only the social aspect of Popper's political philosophy but also even the individual aspect of his philosophy of science ultimately requires a speech community. It requires that the meaning of words follows from commonalities of judgment of thus from a linguistic norm that is to be identified within the linguistic community.

Influence of the Vienna Circle

The third and most significant philosophical tradition in Popper's background that I will discuss is the one that exerts the most profound influence on the development of Popper's philosophy of science. Yet from this tradition also, Popper learned mostly by its negative example. The tradition in question is that of the Vienna Circle, and goes by the name of "logical positivism" or "logical empiricism". The Vienna Circle progenitors were Moritz Schlick (1882-1936), Neurath, and Rudolph Carnap (1891-1970). A somewhat later exemplar of this movement was Carl Gustav Hempel (1905-1997). The verification principle as a criterion of meaningfulness importantly defines the Vienna Circle view, although Carnap later changed his orientation from 'verification' to 'degree of confirmation', and Neurath later abandoned the conception that was normally presupposed, there can be basic or merely observational sentences or statements. The logical positivist movement gained worldwide reputation and helped to professionalize the study of philosophy of science with a series of conferences in the 1930s. The greatest influences on the Vienna Circle were on the one hand *Principia Mathematica* (1910) by Bertrand Russell (1872-1970) and Alfred North Whitehead (1861-1947) and on the other hand Wittgenstein's *Tractatus Logico-Philosophicus* (1921). The logical empiricists used their "verificationist" criterion of meaningfulness chiefly to attack metaphysics as meaningless. They claimed that statements should be regarded as literally meaningless if they could not be confirmed or verified by evidence. Although they exempted the propositions of logic and mathematics from verification, they took metaphysical, religious and moral statements to be meaningless and nonsensical because they cannot be empirically verified by experience[1].

There are quite a number of reasons that caused the logical empiricists to arrive on the world philosophical stage when they did, just as there are quite a number of reasons why these logical positivists believed that their program of logical reconstruction of science should be pursued. Of the various intellectual factors contributing to their emergence, the most fundamental one was that Kant's philosophy had seemingly failed.

Over a hundred years earlier, Kant, in his *Critique of Pure Reason* (1781), had developed a conception of mathematical propositions as synthetic *a priori*. Kant extended his list of kinds of synthetic knowledge known *a priori* to include not only mathematical propositions but also other propositions that in Kant's view help confer the lawfulness of the laws of Newtonian science. Kant's doctrine of the synthetic *a priori* combines rationalism with empiricism. Only by combining rationalism with empiricism, Kant thought, could he explain the foundations not only of mathematics but also of physics. Kant argued that various "antinomies" of pure reason show up the limitation of knowledge to what can be experienced, while mathematics and physics show up the need to acknowledge also that knowledge is possible *a priori* of the *form* of experience. Euclidean geometry for example concerns the form of possible experience. But, Euclidean geometry can be known *a priori*. Similarly, physics depends, Kant believed, upon the law of universal causality. That law can also be known *a priori*, as it concerns the *form* of experience, in Kant's view.

The discovery of non-Euclidean geometry by a number of mathematicians in the beginning of twentieth century rebutted Kant. To make matters still worse for Kant, Einstein's theory of relativity showed that physical space is, in fact, non-Euclidean. Through measurements, physicists revealed that the true geometry of space-time is not Euclidean but "semi-Riemannian"[2]. These new propositions concerning space were, of course, not *a priori* since they were discovered through a process of empirical investigation. Consequently, thinkers such as Schlick

[1] Carl Hempel, "Problems and Changes in the Empiricist Criterion of Meaning," *Revue Internationale de Philosophie* 41 (1950): 41-63.

[2] Philip Catton, "Constructive Criticism," in *Karl Popper: Critical Appraisals,* eds. Philip Catton and Graham Macdonald (London, New York: Routledge, 2004), 66.

took inspiration from Einstein to run with a new, very radical empiricism. Kant's doctrine of synthetic *a priori* knowledge seemed discredited. The new theory of quantum mechanics also challenged Kant, since it challenged the very supposition of universal causality. At the same time, among philosophically oriented mathematicians and mathematically oriented philosophers, a more powerful logic had dawned, such as Kant had not known about. Russell and Whitehead seemed to have showed that using this logic one could explain mathematics as analytic, not as synthetic after all. Russell and Whitehead took themselves to have shown arithmetic truths like "6+8=14", are not synthetic *a priori* but rather are analytic *a priori* truths. Concerning geometry, Einstein himself summarized the view in his essay "Geometry and Experience" (1921). A geometry, according to Einstein, is a "logical system" (Kant would not have said this). Insofar as a geometry is certain, it does not apply to experience. Insofar as it applies to experience, it is not certain. The only way for a geometry to say something about the world is for it to have testable consequences and so to be not certain[1].

The members of the Vienna Circle took inspiration from these considerations to define a new program. The program was to be resolutely empiricist, and based on the new more powerful logic. They thought then that a new philosophy of science was needed, and that this new philosophy of science would actually enhance the qualities and the practical application of scientific knowledge. They wanted to develop a philosophy of mathematics that would establish logic as the foundation not only for mathematics but also for natural science.

The empiricists had ample reasons to think (mistakenly as it turned out) that such a new program could succeed. They also had ample reasons to want it to succeed. A rationalist philosophy during the nineteenth century seemed to have had unsavory effects, not only in philosophy (with extremes of seemingly idle metaphysics, such as the Absolute Idealism of some nineteenth-century rationalists) but also in the world of politics. The positivists were repulsed by political excesses such as Nazism that they blamed on mistaken, rationalist philosophy. They partly wanted empiricism to work for reasons of political reform.

Consequently they adopted the new predicate logic, following Russell and Whitehead, and they devoted this new logic, much as Russell and Whitehead had done to mathematics, to the logical reconstruction of natural science. To them, natural science was essentially connected to observation and experience in a way that logical analysis of it should reveal. Their verification criterion of meaningfulness expressed what they expected that logical reconstruction will show[2]. Metaphysical statements had long seemed suspect (so that Kant for example had dismissed most metaphysical statements as illusory). This criterion of verification was a new way to respond to facile metaphysics: dismiss facile metaphysics as literally meaningless. Only sentences that are grounded in potential observation and experience are meaningful. In the words of a prodigy logical empiricist, Alfred J. Ayer (1910-1989), "a sentence had literal meaning if and only if the proposition it expressed was either analytic or empirically verifiable"[3]. So, since emotive, expressive, and figurative statements are neither analytic nor empirically verifiable, then they are to be categorized as meaningless.

The early Wittgenstein's "picture theory" of meaning strongly influenced the development of the verifiability criterion. Wittgenstein had argued in his *Tractatus that if sentences are to be meaningful they must mirror reality in the same way as a picture does. Like his teacher, Russell, who claimed that for sentences to be meaningful they are to correspond to atomic facts, the early Wittgenstein of the Tractatus also emphasized that only statements about facts are meaningful*[4].

Official logical empiricism is foundationalist and reductionist, looking to the meaningfulness of directly empirical and in that way synthetic of completely analytic sentences to explain all other meaning. However, these doctrines of foundationalism and reductionism soon came under critical scrutiny even of logical empiricists themselves. Neurath, for example, later challenged the general principle of the verificationist criterion. Neurath rejected the foundationalism implicit in the theory of language of the early Wittgenstein and he attacked Wittgenstein's analysis of the relationship between language and reality[5]. Neurath rejected the notion that reality must presuppose singular sentences. In his own words, "the fiction of an ideal language constructed of clean atomic sentences is just as metaphysical as the fiction of Laplace's spirit"[6]. What Neurath proposed was the existence of an 'actual' language that would allow a number of possible analyses instead of a singular ideal language, in Wittgenstein's terms, which permits not more than one possible analysis. So, under the influence of Neurath, Carnap abandoned foundationalism. He shared from Neurath the terminology of 'protocol sentences' but felt that Neurath's protocol sentence raised too many practical complexities. Consequently, Carnap adopted a conventionalist and pragmatist approach toward protocol sentences. For Carnap, by then perhaps under the

[1] See Albert Einstein, Geometry and Experience (1921), 238
[2] See Charles Morris. "Pragmatism and Logical Empiricism", ed. P.A.Schilpp, *The Philosophy of Rudolf Carnap*, La Salle and Chicago, Open Court, (1963): 87 – 98
[3] A.J Ayer, *Language, Truth and Logic*, (Harmondsworth: Penguin Books, 1952), 5.
[4] Wittgenstein, *Tractatus* (1921), 12
[5] See Tom Rockmore, *On Foundationalism: A strategy for Metaphysical Realism* (Maryland: Rowman and Littlefield Publishers Inc., 2004), 113-114
[6] Otto Neurath, "Protokollsatze". *Erkenntnis* 3. (1932): 215-228

influence of Popper, any concrete physicalist statement could be used as protocol or basic sentence[1]. Also, following after the significant criticism of verificationism that Popper mounted, Carnap changed his position once again. He took the degree of confirmation for scientific propositions to be something already logically rich that connects these propositions to experience. Further discussion on Carnap's later change of ideas from verificationism to the degree of confirmation occurs later in this paper.

When Wittgenstein changed his thesis of a "picture theory of meaning" to "language game theory", he had himself become critical of logical empiricism. The later Wittgenstein disagreed with the verification principle, claiming that sentences do not have to picture reality. Thus, metaphysical sentences do not need to be meaningless according to the later Wittgenstein.

Nazism flushed the logical positivists out of German speaking lands mostly into English speaking lands. This did not end but rather changed the context for the mid-twentieth-century prominence in philosophy of logical empiricism. Likewise Nazism flushed Popper initially to England and then to New Zealand. He later returned permanently to England and never again set himself up in German speaking lands. If Hegelianism and Marxism had helped to produce political effects including the rise of nationalism and social radicalism in Europe, they also flushed some of their very significant intellectual critics to far parts of the world. The rise of Nazism and its impact on the European Jewish culture had significant consequences on the personal lives of the empiricists and logical empiricism as a movement as it also had on Popper.

The confidence that Popper displayed to robustly challenge the verificationism of the empiricists is remarkable, especially since he was indebted to them and was somewhat similarly a refugee from the Nazis. The positivists were individuals who wielded significant influence during that period within the diverse fields of science and philosophy, from physics to mathematics, logic, psychology, social science and economics. It is remarkable how quickly and well Popper diagnosed that this influence by the logical positivists was usually not healthy for those fields. Popper's concerns with concepts such as the unity of method in science and with discovering a criterion for demarcating science from non-science are symptomatic both of his indebtedness to the logical positivists and of his wanting to separate himself from them. Popper shared with the positivists' significant high regard for the new logic and for logical analysis.

Popper's *The Logic of Scientific Discovery* (1959) was published as a critique of logical empiricism. Central to this critique was his attack on verificationist criterion of meaning, that is to say, the verification principle. Popper replaced verification by falsification not so as to explain differently the meaning of sentences but rather just so as to demarcate science from pseudoscience. Popper believed that the logical empiricists were mistaken when they conflated two quite different philosophical problems, the problem of meaning and the problem of demarcation. They had used their verification principle as a solution to both the problem of meaning and the problem of demarcation. For Popper, falsificationism is the thesis that a hypothesis can be termed scientific only if it has the potential to be refuted. A theory is scientific only if it is falsifiable. Popper thus used falsification as a criterion for demarcation to distinguish the true scientific attitude from the unscientific. The true scientific attitude, according to Popper, is witnessed in Newton's theory of gravitation as well as Einstein's theories of relativity (so that a contention does not need to be right to be scientific). The true scientific attitude differs from that by Marxists toward their Marxism, or by Freudians toward their psychoanalysis, or by Adler towards his individual psychology, for by their attitude these various thinkers render what they espouse immune from potential falsification. They are dogmatic rather than critical, so what they offer is mere pseudo-science. However, that is not to say that it is meaningless, in Popper's opinion.

Conclusion

Many scholars have wondered why Popper claimed in his *Unended Quest: An Intellectual Autobiography* that "logical positivism is dead... [and] I fear that I must admit responsibility"[2], when clearly logical empiricism exerted a considerable influence on the development of his philosophy of science. It is essential to point out that Popper's claim to have killed logical empiricism was not an indication of rancor and disaffection between him and the empiricists; members of the Vienna Circle were also not unreceptive to falsification theory. Popper acknowledged the support of members of the Vienna Circle, particularly Carnap and Herbert Feigl (1902- 1988), whose several discussions with him helped in the formation and clarifications of thought on falsification and demarcation. Although some logical empiricists, such as Neurath, shunned the theory of falsification after the publication of *The Logic of Scientific Discovery*, many others, such as Carnap, embraced the theory of falsification as an extension of the idea of verification rather than a competitor idea. After all, even though Popper criticized the verification principle, his subsequent replacement of it with falsification theory is clearly in line with an idea that many positivists held, that knowledge can advance only through criticism. "Hypothetico-

[1] See Popper, *Unended Quest* (1974), 89-90. Popper, *Conjectures and Refutations* (1963), 40-41, footnote 5. Sahotra Sarker and Jessica Pfeifer, eds. *The Philosophy of Science: An Encyclopedia*. Vol. A-M (New York: Routledge, 2006):612

[2] Popper, Unended Quest (1974), 88

deductive empiricism" was the common possession of Popper and many of the positivists. The continued discussions Popper had with Carnap in their published correspondences on important issues in philosophy of science such as corroboration versus confirmation and in social philosophy such as on the status as pseudo-science of Marxism clearly indicates that there was mutual respect between them[1]. Yet I have argued above that Popper learned mostly by negative example from the logical empiricists. Popper resembled them in taking as his starting point the need to update and suitably revise the philosophy of science of Kant. However, Popper did not suppose as the positivists did that the chief issue to address was that of meaning. In limiting philosophy to logical analysis, the positivists left themselves no room to concede the enduring significance of some very large problems of philosophy. An illustration of their mistake is Wittgenstein's exploring not half as deeply as Kant the reasons to prioritize inter-subjectivity to subjectivity. I have argued that Popper does recognize deep reasons to prioritize inter-subjectivity to subjectivity, or at least to balance the competing poles of individualism and communitarianism. This balance in Popper is a reflection of Popper's enduring respect for Kant.

Of great importance about Popper's venture into social and political philosophy was his attempt to establish an ideology for human freedom, which he realized was not present in the totalitarian society of Europe at the time. In establishing an ideology for human freedom Popper was motivated by the Kantian ideologies of ethical individualism as well as the three formulations of categorical imperative. Popper also acted as a re-creator of the Kant's essay "What is Enlightenment", stepping forward within the troubled times he lived in much as a figure such as Kant would have recommended. This undoubtedly meant that, with Kant, Popper ever balanced individualism with communitarianism in his thinking. Also, Popper was inadvertently influenced by Wittgenstein's idea of speech community. These ideas generated in Popper the need to establish a liberal ideology that would recognize the primacy of individual freedom, while at the same time it does not require a disregard for the value of community. This forms the basis of the individual and social aspects of Popper's political philosophy. It establishes a balanced philosophy of Popper's liberal-communitarianism.

It is clear that the underlying balanced philosophy of the individual in relation to the social that is both at times explicit and ever implicit in Popper's philosophy are thoroughly evident both in the development of his philosophy of critical rationalism and in the significant impacts of his life experiences. For what it is worth, it can be argued that from the experiences of his life Popper not only developed a penchant for critical attitude but also an ever deepened compassion for others. He was critical of the pre-existing scientific methodology of verification and replaced it anew with falsification. He also became critical of Marxism which he averred motivated the rise of collective totalitarianism in the political society in Europe at the time. He termed Marxism a historicist/holist ideology, and instead introduced an anti-revolutionary cum conservative ideology in the form of piecemeal social engineering. He held Marxism to have encouraged a collectivist philosophy which had no respect for the sanctity of human freedom. Popper therefore made inquiries into the methodology of the social sciences in order to accentuate a liberal philosophy that recognizes the primacy of individual freedom and that gives respect to the nature of human social character. Yet through it all Popper maintained some of the socialist attitudes of his youth. This constancy, this way of being conservative of values even in acts of intellectual boldness, is essential to Popper's courageousness in philosophy and in the world.

Apart from establishing a coherent balanced philosophy of the individual and the social in his critical rationalism, the life of Popper could also be said to have been an exemplar of his philosophy. His migration from Austria to England, later to New Zealand and back to England in a succession of scholastic progress and improvement is a living example of his article, *All Life is Problem Solving* (1999). The very basis of the idea in the article is on the apparent progress of scientific knowledge, and how we are served to understand how the universe seems to improve over time. Such improvement is the life that Popper lived in a succession proceeding by conjecture and refutation as a means of progress.

As a way of concluding this paper, it is important for me to mention that what I say was an enduring liberal-communitarian directedness in Popper would read as novel to many scholars. Most Popper scholars have contended that what is prevalent in Popper's critical rationalism is his idea of individualism. However, for reasons that I have laid down in my arguments on Popper's liberal-communitarianism it seems clear that Popper's critical rationalism consist of both individual and social aspects. Those further arguments will also seem controversial, but they are true to the intellectual in question, who successfully lived a richly complicated life.

Let me also remark that a great number of misunderstandings revolve around reactions to the personality of Popper. Popper lived for his work but many people judged him egoistical and arrogant. Much as Socrates' method of dialectics made Socrates both significant friends and significant foes, Popper's manner of posing philosophical puzzles to his colleagues and attempting falsifying their responses was not always well received. His intention was never to belittle the philosophical positions of others but to stimulate arguments. He

[1] See Jeremy Shearmur and Piers Norris (eds.) eds. *Karl Popper: After the Open Society: Selected Social and Political Writings* (London and New York: Routledge. 2008), 85-108

regarded philosophy as problem solving. He was frequently noted to always be grappling with one philosophical problem or another at any point in time. His fallibilism encompassed both his work and personal life as he constantly reviewed his drafts and questioned the rationalization of certain actions. Although he was not very interested in meta-ethical issues, he was concerned about public policy issues[1]. More fundamentally, he was concerned about how to enthrone the essential liberal-communitarian aspects of his political philosophy that would enhance the openness of society. His thought was that an open society could be achieved by the critical method that characterizes the method of science.

[1] Shearmur "Popper the Person". *Unpublished*. 2011