

CHAPTER 4

THE GENESIS OF KARL POPPER'S PHILOSOPHICAL IDEAS

4.0 Introduction

Karl Popper was one of the most prominent philosophers in the past century as he has been the most prolific, wide-ranging and the most influential among scientists. This sentence is evident as attested to the statement made by Sir Peter Medawar, a winner of the Nobel Prize for medicine and himself an experienced analyst of scientific thought and practise, that says: 'I think Popper is incomparably the greatest philosopher of science that has ever been.' Medawar's judgment was subsequently affirmed by other eminent scientists, such as Sir Herman Bondi, who wrote, 'there is no more to science than its method, and there is no more to its method than Popper has said'; and in similar vein, Sir John Eccles, another Nobel Prize winner, testified to the impact of Popper's philosophy on his approach to research: 'my scientific life owes so much to my conversion in 1945... to Popper's teachings on the conduct of investigations... I have endeavoured to follow Popper in the formulation and in the investigation of fundamental problems in neurobiology' (Magee 1975). Furthermore, recent survey of scholarly literature on totalitarianism and on social science methodology found him mentioned more often than any philosopher, including Hannah Arendt, Ludwig Wittgenstein, and Thomas Kuhn.⁵⁶ And, in fact, in a time in the

⁵⁶ Peter Hedström, Richard Swedberg, and Lars Udéhn in their "Popper's Situational Analysis and Contemporary Sociology," *Philosophy of the Social Sciences*, 28 (1998), 342-3, survey the five leading sociology journals in the United States, Britain, France, Germany, and Italy (1960-96). They found that Popper was mentioned more frequently than Thomas Kuhn, Carl Hempel, or Ludwig Wittgenstein. He trailed Kuhn badly in the United States but led greatly in Germany and slightly in Britain, and was about equal in France and almost so in Italy. See also Malachi H. Hacoheh, *Karl Popper: The Formative Years, 1902-1945* (Cambridge: Cambridge University Press, 2000), p. 2; and Christian Fleck, "Sieg der Offenen Gesellschaft?" *Heinrich Gomperz, Karl Popper und die Österreichische Philosophie*, Martin Seiler and Freidrich Stadler (Amsterdam: Rodopi, 1994), pp. 201-22 that includes some statistics on references to *The Open Society* and Hannah Arendt's *The Origins of Totalitarianism* (New York: HBJ, 1951).

1970s, leaders of all three major West German parties, notably former chancellor Helmut Schmidt, declared themselves as Popper's followers.⁵⁷

Popper's philosophical life spanned more than 65 years, with little interruption. Throughout these years his philosophical experiment made outstanding, and in some cases revolutionary and controversial, contribution to virtually every field of philosophy: the philosophy of science, the theory of probability, the theory of knowledge, metaphysics, social and political philosophy, philosophy of history, logic, the history of philosophy (especially the pre-Socratics, Plato, and Marx), classical mechanics, classical thermodynamics, quantum physics, evolutionary biology, psychology and music. Popper's list of publications contains over 1200 entries, including reprints and translations, and his archive (up to 1985) occupies 463 manuscript boxes in the library of the Hoover Institution at Stanford University (the University of Klagenfurt in Austria has a complete photocopy; a further copy is held on 473 rolls of microfilm at the London School of Economics) (Miller 1997, 369).

Now, what shall follow here is an attempt to historicise Popper's philosophical experiment by locating him in the socio-political and intellectual milieus of his time as to identify the crucial events in which he developed his views on the scientific knowledge and the problem of its foundations. Before taking up this task, it seems imperative to highlight some difficulties in reconstructing the intellectual biography of Popper. Historians of philosophy will be studying for years to unravel the strands that are woven into Popper's canvas, both from his days in Vienna (1902-1936) and from his times in New Zealand (1937-1945), at the London School of Economics (1946-1969), and in his retirement years

⁵⁷ On this fact, I rely solely on Hacoen's quotation from Helmut Spinner, *Popper und die Politik* (Berlin: Dietz, 1978).

from 1969 up to his death in 1994. The mature Popper is well known to us and a number of his students have provided accounts of the mature philosopher and have done so with a philosophical expertise and personal knowledge of him.⁵⁸ Yet the young Popper, especially in his Vienna days, is still a mystery to most of us. Popper himself did give us accounts of his early life in his *Unended Quest*, but it could not have accurately described his intellectual development (Hacohen 2000, 8), and indeed frustrates the historian's effort to identify the debates and the people he engaged in his work, since his autobiography dehistoricised his life and philosophy. Recently, there have been some attempts by Austrian scholars⁵⁹ and his students⁶⁰ at providing historical study of Popper's early intellectual development. Before going further, I must confess at the outset that I do not begin my reconstruction of Popper's intellectual development *de novo*, but I work through what is prior to me and is therefore authoritative to me. However, due to some difficulties, only five of the existing historical studies of Popper are available at my disposal, and hence my reconstruction of his intellectual biography relies solely on them.⁶¹ I shall now present my version of Popper's intellectual life by imitating the form of Beethoven's revolutionary Symphony No. 9, as Popper was very admiring of him.

⁵⁸ Joseph Agassi, *A Philosopher's Apprentice* (Amsterdam: Rodopi, 1993); David Miller, "Sir Karl Raimund Popper," *Biographical Memoirs of Fellows of the Royal Society* 43 (1997), 367-409; and John Watkins, "Karl Raimund Popper 1902-1994," *Proceedings of the British Academy* 94 (1997), 645-84 (Watkins was working on a fuller memoir at the time of his death in July 1994).

⁵⁹ Young Austrian scholars attempt to reclaim the interwar cultural heritage and proclaim Popper as an "Austrian Philosopher", and they have reconstructed the life of fin-de-siècle and interwar Central European networks, and thereby throwing light on the context for Popper's work. See, for example, Friedrich Stadler, *Studien zum Wiener Kreis* (Frankfurt: Suhrkamp, 1997), chap. 10; Friedrich Wallner, "Popper und die österreichische Philosophie," in *Karl Popper – Philosophie und Wissenschaft: Beiträge zum Popper-Kolloquium*, Friedrich Wallner, ed., (Vienna: Braumüller, 1985); Johann Dvorák, "Karl Popper und die Wissenschaft von der Geschichte in der Epoche des Faschismus," in *Versuche und Widerlegungen offene Probleme in Werk Karl Poppers*, Karl Müller, Friedrich Stadler, and Friedrich Wallner, eds., (Vienna: Geyer, 1986); see also the essays by Müller in the last volume.

⁶⁰ William W. Bartley, III, philosopher and biographer of Wittgenstein, undertook in the 1980s to write Popper's biography. He interviewed many of his early Viennese acquaintances as to explore Popper's early intellectual development. See William W. Bartley, III, "Rehearsing a Revolution: Music and Politics" (extract from "Karl Popper: A Life"), a paper delivered at the Pacific Regional Meeting of the Mont Pèlerin Society, Christchurch, New Zealand, November 27-30, 1980. And as has been confirmed by Mariano Artigas, Professor Brian Boyd of Auckland University, New Zealand, who has been entrusted by the executors with the writing of Popper's official biography, is now working on a Popper biography. He has done already much work, travelling around some 20 countries. Boyd achieved fame with the 1,400-page biography of novelist Vladimir Nabokov. And, according to Artigas, if Popper going to be presented in similar vein, we have to wait, as Boyd's biography will cover Popper's entire life span, which means 92 years. See Mariano Artigas, "Popper's Biography and Something More," *Philosophy of the Social Sciences*, 2002 (32), 379-93.

⁶¹ Throughout my reconstruction of Popper's intellectual biography I refer mostly to: Karl Popper, *Unended Quest*, (New York: Routledge, 2002); Malachi H. Hacohen, *Karl Popper, The Formative Years 1902-1945: Politics and Philosophy in Interwar Vienna*, (Cambridge: Cambridge University Press, 2000); David Miller, "Sir Karl Raimund Popper," *Biographical Memoirs of Fellows of the Royal Society*, Vol. 43 (1997): 369-409; John Watkins, "Karl Raimund Popper, 1902-1994," *Proceedings of the British Academy*, (1997), 645-684; William Bartley, "Rehearsing a Revolution," Pacific Regional Meeting of the Mont Pèlerin Society, Christchurch, New Zealand, November 27-30, 1989.

4.1 First Movement: The Vienna Years

Karl Raimund Popper was born on 28 July 1902 at Himmelhof in Ober St Veit on the Western outskirts of Vienna. His father, Dr Simon Siegmund Popper and his mother, Jenny Popper (*née* Schiff) were Jewish, and right after his father (Israel Popper) died they had renounced their membership in the Jewish community and converted to the Protestant faith in 1900, which probably not only reflected Simon's conviction but also his vulnerability since his office transacting city business under a popular anti-Semitic mayor, Karl Lueger.⁶² Popper's father, whose family came from Kolin, was born in 1856 in Roudnice nad Labem (Raudnitz) in what is now the Czech Republic, and, like his two brothers, was a doctor of law of the University of Vienna. After having earned a law degree, he became the legal partner of Dr Carl Grübl (1847-98), the man who was to be the last liberal mayor of Vienna. After Grübl had died, Simon Popper took over the firm, and the family moved into a handsome 18th century house at the corner of Freisingergasse and Bauernmarkt in the very heart of Vienna where he maintained his successful legal practise (Miller 1997, 370).

Simon Popper worked long hours at his office but remained intellectually engaged. He was a cultivated man and spent his limited leisure time writing political satire, studying history, and translating Greek and Latin Poetry. According to his son, he was 'really more a scholar than a lawyer' (UQ, 6). And Karl Popper regarded his father as an historian (of which he was interested especially in the Hellenistic period, and in the eighteenth and nineteenth centuries), poet (as he translated Greek and Latin verse into German), social theorist (of which he possessed not only the chief works of Marx and Engels, but also those

⁶² Vienna had the highest conversion rate of any European urban centre, and Lutheranism was the religion of choice for upper-class Jewish converts. For more detail see Marsha Rozenbilt, *The Jews of Vienna: Identity and Assimilation, 1867-1914* (New York: SUNY, 1983).

of the critics of Marx: Böhm-Bawerk; Carl Menger, Anton Menger, P. A. Kropotkin, and Josef Popper-Lynkeus). He was greatly interested in philosophy and his son inherited his collections of Plato, Bacon, Descartes, Spinoza, Locke, Kant, Schopenhauer, and Eduard von Hartmann; J.S. Mill's collected works in a German translation edited by Theodor Gomperz; most of Kierkegaard's, Nietzsche's, Eucken's, and Ernst Mach's works; Fritz Mauthner's *Critique of Language* and Otto Weininger's *Geschlecht und Charakter*; and translations of most of Darwin's books (UQ: 6). He has a huge library reaching to the ceiling, requiring even adults to use a moving ladder to reach the books. Before he could use it, Karl spent time there, pondering its mystery. And of his religious outlook, he shared the vehement anticlericalism of Viennese progressives. Despite the fact of his conversion to Protestantism, he preferred the *Aufklärung's* religion, and he was also a staunch anti-Zionist.

Karl Popper's mother, who was born in Vienna in 1864, belonged to a different social class, the Viennese high bourgeoisie, and her family was highly musical. They were supporters of the arts, and her parents were founder-members of the *Gesellschaft der Musikfreunde* that built the beautiful *Musikvereinssaal* in Vienna. Jenny Popper and her two sisters were talented pianists. Karl Popper seemed to have had closer emotional ties to his mother as his father devoted little time with his children. Thus, his father represented the scholarly and political, although he never discussed with him his scholarly interests and only rarely his social views, while his mother represented music and literature. His mother wrote some poetry, and played piano beautifully which had deeply influenced him (Hacohen 2000, 62). She read to him a great deal. At the age of five, she read him a book—for children—by the great Swedish writer Selma Lagerlöf, in a beautiful German

translation *Wunderbare Reise de kleinen Nils Holgersson mit den Wildgänsen* (*The Wonderful Adventures of Nils*) (UQ, 7). This point of fact and what shall follow mark the first remarkable influence on Karl Popper's intellectual development.

Between the ages of six and eleven Karl Popper was educated in *Freie Schule*, a private school established in 1905 by progressives and socialists as way to provide an education free from clerical influence. At this stage, he learned to read and to write. From his own accounts, he was grateful forever to his first teacher, Emma Goldberger, who taught him the three R's. At the age about eight, the young Popper stumbled upon the problem of the infinity of space: he could neither imagine that space was finite nor that it was infinite. His father suggested him to ask his uncle for, according to his father, he was very good at explaining such things. Apart from his parents, his first schoolteacher, and Selma Lagerlöf, the greatest influence on his early intellectual development was his lifelong friend Arthur Arndt. Arndt was a relative of Ernst Moritz von Arndt who had been one of the famous founding fathers of German nationalism in the period of the Napoleonic wars (UQ, 7). Popper met the thirty-year-old Arndt in 1912 when he was ten. Though he was of German descent, he was born and grown up in Moscow and studied engineering at the University of Riga. He was one of the student leaders during the abortive Russian revolution of 1905, where he had known Lenin and Trotsky (Bartley 1989, 26). He was a pacifist as well as a socialist, who taught Popper in both doctrine and had turned him into one, but a strong opponent of the Bolsheviks. He described them as the Jesuits of socialism that capable of sacrificing innocent men, even of their own persuasion, because great ends justified all means (UQ, 8).

Arndt was also deeply interested in the movement which had been started by the pupils of Ernst Mach and of Wilhem Ostwald, a society whose members called themselves “The Monists”.⁶³ They were interested in science, epistemology, and in the philosophy of science. In 1912, Arndt began taking Popper to the Monists, especially on their Sunday excursions into the Vienna woods. On these occasions he discussed and explained Marxism and Darwinism to Popper. Most of these explanations, of course, were far beyond the grasp of the young Popper. Popper read the first book on socialism in his life, around 1914, probably under the influence of Arndt, the semi-socialist utopian novel *Looking Backward*, by American progressive Edward Bellamy. On one of these Sunday excursions by the Monists on June 28, 1914, they heard that the Archduke Franz Ferdinand, apparent heir of Austria, had been assassinated in Sarajevo. And a week or so after, then, the First World War broke out. In his *Unended Quest*, Popper admitted that war years, and their aftermath, were in every respect decisive for his intellectual development. They made him critical of accepted opinions, especially political ones (UQ, 9).

After having completed five years (1908-1912) at the *Freie Schule*, run by the Verein Freie Schule, he entered the Realgymnasium im Dritten Bezirk, where he had been relatively happy, from 1913-1914. The reason he chose Realgymnasium over a conventional humanistic gymnasium was that it put more emphasis on mathematics and natural sciences rather than on classical languages. But, it was far from his home, and thus, after a year, he moved to the Franz Josef Gymnasium in 1914. Yet, he faced another disastrous problem: he encountered there a tyrannical and anti-Semitic Latin teacher, a certain Herr Hofer, who harassed him. He fell ill with rheumatic fever, due to psychological depress, in the winter of 1915. After getting well he was transferred to a gymnasium,

⁶³ According to Popper, there was a connection with the famous American journal, *The Monist*, to which Mach was contributor.

Uranek, for two years (1915-1917). But he found the classes in all three schools had made hardly any progress, not even in mathematics, and the teaching was boring in the extreme, that made him eager to leave school.

At this stage of his life, the war had become from bad to worse. It destroyed the world he lived in; and there began a period of cold and hot war which ended with Hitler's invasion of Austria, and which led to the Second World War. But, in terms of student activism, the later war years witnessed the increasing politicisation of students. Youth group provided a major channel for radical political action during the war. Popper appears to have been a member of one, the *Jung-Wandervogel* (Youth Scout) group led by Karl Frank (1893-1969) (Hacohen 2002, 77). The group consisted of socialist pacifist youth who withdrew from the scout movement after it had adopted, in 1913, an Aryan clause excluding Jews. Their leader in pre-war years had been Siegfried Bernfeld (1892-1953), who combined Gustav Wyneken's ideas on the purity of youth with psychoanalysis and socialism to produce a platform for a *Jugendkulturbewegung* (Youth Cultural Movement) that would reform education and rebuild community. But, after the outbreak of the war, Bernfeld became a Zionist, and then Frank and Max Ermers took over. During the war years, the group went through political radicalisation and became thoroughly Marxist (Hacohen 2000, 76).

In the fall of 1917, Popper changed schools once again, returning to the Realgymnasium im Dritten Bezirk (1917-1918). But he felt that his education was useless. And the social revolution incited him to stage his own private revolution: he rebelled against his parents and left school effectively, late in 1918, at the age of 16, to study on his

own. He enrolled immediately as a non-matriculated student at the University of Vienna, since he did not take the entrance exam, the *Matura*.

It was a time of political upheavals. On November 12, the provisional government declared Austria a Republic, and making it clear that it would later be part of Germany. A crowd of men, women and children, estimated a quarter of a million, have gathered in front of the Parliament building. Members of the new regime and their advisers—Seitz, Renner, Dinghofer, Deutsch, Julius Braunthal, Ignaz Seipel, Otto Bauer, and others—lined up to proclaim the Republic to the people assembled on the streets (Bartley 1989, 18). At just this moment, Karl Popper sneaked into the parliament building through the backdoor, and climbed up quickly to the top of the front stairs, and found himself among the assembled ministers declaring the Republic. And a moment later, when the communist soldiers opened fire that put a quick end to the ceremony, he ducked behind a pillar and back into the building. At this point of history, Karl Popper was not yet a communist. But, he was going around Vienna dressed in an old military uniform, eager to partake in the revolution.

Popper became a member of the *Freie Vereinigung sozialistischer Mittelschüler* (Free Association of Socialist High-School Students), founded on December 14, 1918, under Ludwig Wagner's and Lazarsfeld's leadership, and went to their meetings. They included both communists and socialists—of about 150 members—and cooperated with the *Freie Vereinigung sozialistischer Studenten*, re-established by Frank on October 30-31, 1918. The university students turned into communist within a few weeks, providing the nucleus for the Austrian Communist Party. For about a time Popper was suspicious of the communists, mainly due to the story that Arndt had told him before. But eventually Karl

Frank had managed to turn him into a communist on two main arguments (Bartley 1989, 32). Firstly, he manipulated Popper's pacifism by emphasising the pacifist policy that had been adopted for well over a year in Russia, and was still being vigorously championed by the new Soviet government—a government terrified that the victorious allies would proceed military against the new Soviet Union. Secondly, Frank persuaded Popper that the programmes of Viennese social democrats like Friedrich Adler and Paul Lazarsfeld were inadequate, and one must join the communist in order to be, so to speak, in the forefront of those who are trying to bring about socialism. He then convinced with Frank's arguments and shoved aside his boyhood hero, Arthur Arndt's warning against the communists. And regarded himself as a communist for about 2 to 3 months. This took place in the spring of 1919.

It is not clear, however, whether or not Popper actually became a communist party member. But record suggested that he was working as a volunteer office boy at communist headquarters in the ninth district, north of the Inner City, near the Hotel Union, precisely when the party was staging its coup attempts. Popper's parents and wider family were alarmed about his activities. Thus, his parents brought in his favourite uncle Walter Schiff (1866-1950), his mother's brother and who was then undersecretary of finance and president of the statistics bureau in Bauer's government,⁶⁴ as they believe he could use his socialist and academic credentials to talk him out of communism. They sat down together in the Green Room, the dining room at his parents' home: Karl in his used army uniform while Schiff in his frock coat, and Schiff addressed his nephew in a manner, and on matters, that had never been broached between them before. He pitched his plea to the young Karl as to say: 'Take it on my authority as an economist and as a university

⁶⁴ Schiff was also an eminent economist, professor of Economics and Statistics in the University of Vienna.

professor that Communism does not work. Take it also in the name of the two Mengers (Anton and Carl) under whom I have studied'. Regrettably, Karl Popper was in no mood in taking anything on authority, least of all from his family (Bartley 1989, 38).

Popper's flirtation with communism was not long. He was soon abandoned communism in disgust. The event that turned him against communism was the shooting of some unarmed young socialists workers outside police station in the Hörlgasse during a demonstration engineered by communists as to try to help some communists who were under arrest in the central police station to escape. Several workers were killed.⁶⁵ And he had just missed of being shot. Soon afterwards he became an anti-Marxist as well. In the conversations with Karl Frank he had neglected, or may be not fully understand, two central points of Marxism with respect to violence and dictatorship of the proletariat: who were the proletariat? Lenin, Trotsky, and the other leaders? (UQ, 34) But he was against dictatorship and violence.

The reaction against communism made him first a sceptic, and it immediately led him to react against all rationalism,⁶⁶ and then he became an existentialist, an irrationalist, and a follower of the Danish existentialist philosopher and theologian Søren Kierkegaard. This part of his life story has never been told, yet is crucial to the understanding of his intellectual development (Bartley 1989, 52). Karl Popper's encounter with Kierkegaard's thought in mid-1919 was unusual in its timing for he was not popular and was just beginning to be known in Germany or Austria compared to such figures as Marx, Adler,

⁶⁵ Hacoen reports that twelve workers were dead and eighty were injured (2000, 82), while Bartley accounts amounted to eighty were died and another fifty were seriously wounded (1989, 49).

⁶⁶ Popper later found that this is a typical reaction of a disappointed Marxist (UQ: 34).

and Freud who were the fashion of the hour in Vienna.⁶⁷ Therefore, Karl Popper should have encountered Kierkegaard's works due to Simon Popper's large library included his works. Although much of Kierkegaard's writing were beyond him, but the *Stages on the Way of Life*, wherein Kierkegaard recounted the transition from aesthetic to ethical and to religious life, *Journals*, and *Fear and Trembling*, left a deep impression on him. For a few months, Karl Popper adopted the existentialist credo: nothing could be known by reason and that religious faith was necessary. Consequently, this was not only made him to reject Marxism's claim of knowledge of the laws of historical development, but he had to reject the central tenet of European rationalism. Bartley claims that the trace of this credo is somewhat obvious in *Open Society*, where he declared the commitment to rationalism "irrational"—indeed, this is why he called his viewpoint as "critical rationalism": it is a rationalism that knows its limits (Bartley 1989, 63-70).

During this time Karl Popper continued to spend time with communist youth, and remained a socialist for several years, even after his rejection of Marxism. But his political experience in Hörlgasse prompted him to study thoroughly and critically Marx and Engels and Marxist literature. And it took him several years before he felt confident that he had grasped the heart of Marxian argument. He did share his views on Marxism with his close friends, but it took about sixteen years later, in 1935, that he began to write his critique of Marxism. This led to the publication of two books, *The Poverty of Historicism* in 1935 and

⁶⁷ It was only in the next four decades that Kierkegaard was to attain the peak of his European fame and influence, albeit nearly a hundred years after his death. While English and American interest in his work is entirely a twentieth-century phenomenon. But the same case is not true in Scandinavia, where within ten years of his death his work had influenced Henrik Ibsen (1828-1906), a major nineteenth century Norwegian playwright and poet, and the father of modern theatre. In Germany, however, there was little serious discussion of Kierkegaard's work before the end of World War I. Bärthold had published several works about him in German in the 1870s, and Brandes published a study in 1879; but the only influential, if superficial, works in German were written by a professor of philosophy in Copenhagen, Harald Høffding. And a few literary critics and essayists, notably Georg Lukács and Rudolf Kassner, did use Kierkegaard's ideas in the decade prior to the outbreak of war. See William Bartley, "Everybody's Kierkegaard," *The New York Review of Books*, April 1966.

The Open Society and Its Enemies, in two volumes, in 1943—I shall come back to both books in a moment.

Apart from Popper's breaking up with Marxism, the year 1919 also brought his first encounter with Einstein—who became the most important influence of all on his thinking. In May, 1919, Einstein's revolutionary theory of gravitation successfully passed Eddington's "star-shift" tests. These tests brought about a new theory of gravitation and a new cosmology that give a real improvement on Newton and precipitated a revolution in physics. He attended a lecture by Einstein in Vienna which left him baffled as it was quite beyond his understanding. Fortunately, a fellow student patiently explained relativity to him, as he recalled it: 'I was fortunate in being introduced to these ideas by a brilliant young student of mathematics, Max Elstein, a friend who died in 1922 at the age of twenty-one' (UQ, 38). Popper found in Einstein the true scientific attitude which was utterly contrary to the dogmatic attitude of Marx, Freud, Adler, and their followers.⁶⁸ Thus, by the end of 1919, he came to the conclusion that the scientific attitude was the critical attitude.

During the early 1920s Popper was studying at the University of Vienna. It was the time where he first encountered Otto Neurath (1882-1945), a progressive-socialist reformer and, later, a Vienna Circle leader. He saw Neurath for a few months at Akazeinhof, a pleasant not-for-profit eatery (*Gemeinschaftsküche*) that Schwarzwald opened near the University for students and professors, a meeting place for the radical intelligentsia,

⁶⁸ Einstein was looking for crucial experiments whose agreement with his predictions would by no means establish his theory, while a disagreement would show his theory untenable. Einstein once wrote: 'If the redshift of spectral lines due to the gravitational potential should not exist, then the general theory of relativity will be untenable'. See Karl Popper, *Unended Quest* (London & New York: Routledge, 2002).

including Hungarian émigrés.⁶⁹ At the university, he sampled courses in different fields: history, literature, psychology, philosophy, and even medicine. But soon he found most courses disappointing and gave up going to lectures as he found that ‘reading their books was an incomparably greater experience than listening to their lectures’ (UQ, 40). As has been noted earlier, Popper entered the University as non-matriculated student for three years. His first attempt at the *Matura*—the entrance examination for the University—in 1921 was unsuccessful, as he failed in two subjects: Latin and logic. In Latin, he had the difficulties in oral translation of an unseen Horace ode. While in logic, he was examined by Edgar Zilsel, later a member of the Vienna Circle, with whom he had a disagreement about Aristotelian logic (Miller 1997, 370). He only passed the *Matura* on his second try in 1922.

Popper remained at the University until 1928. But he found that only department of mathematics offered really fascinating lectures. He spent long hours in the library of the Vienna Mathematical Institute. Popper studied mathematics formally with Hans Hahn (1879-1934), Wilhem Wirtinger (1865-1945), Philipp Furtwängler (1869-1940); physics with Eduard Helly (1884-1943), Ernst Lecher (1856-1926), Felix Ehrenhaft (1879-1952), Hans Thirring (1888-1976), and Kurt Reidemeister (1893-1971)—all of them are world-renowned mathematicians and physicists at the Institute. During this time and the years that followed, Popper also started fighting his way through Kant’s works: *The Critique of Pure Reason*, *The Critique of Practical Reason*, and *Prolegomena to any Future Metaphysics*. But he did many things besides. He worked in Adler’s child guidance clinic, and later as a

⁶⁹ I found this interesting fact in Hacohen’s (2002). In his brief memoir fifty years after his encounters with Neurath, Popper recalled him as: ‘a most unusual personality... a man who believed passionately in his social, political and philosophical theories, but who believed even more in himself... a man who was immensely attractive, but cared nothing about it; who would not look behind him or, when rushing ahead care very much about whom his big stride might knock down.’ See Popper, “Memories of Otto Neurath,” in *Empiricism and Sociology*, (Boston: Reidel, 1972) p. 52.

social worker with neglected children. And for a time between 1920-1922 Popper thought seriously of becoming a musician.

In the fall of 1919, Popper became a member of the Society for Private Performances (*Verein für musikalische Privataufführungen*) founded by Arnold Schönberg (1874-1951). The Society was founded on November 23, 1918, and dedicated to performing compositions by Schönberg and his students such as Alban Berg (1885-1935), Anton von Webern (1883-1945), and other contemporary advanced composers like Maurice Ravel (1875-1937), Béla Bartók (1881-1945), and Igor Stravinsky (1882-1971). But after two years he became disenchanted as he found that he had succeed in getting to know something—about a kind of music which he liked even less than he had to begin with (UQ: 58). And in later years he even described the inner circle of Schönberg's group as 'something like a communist cell, full of conspiracy' (Bartley 1989, 14-5). Thus, he left the Society in late 1921, and then in 1922 or 1923 he became a student of church music in the Vienna *Konservatorium* (Academy of Music). He was admitted on the basis of an organ fugue in F sharp minor. In passing, this fugue was first publicly performed in 1992 by Dame Gillian Weir, and Popper recalled that it was an attempt to honour Bach through its second subject, 'a quotation from Bach's *Passion Music According to St Matthew*'. A noted composer, and also a pianist, Julien Musafia, who has arranged the fugue as a piano work for four hands, described it as 'a composition of romantic impulse vested in baroque form—it would have been a most creditable piece of work to have submitted at the end of his studies at the Konservatorium, let alone at the beginning' (Miller 1997, 371). But he gave up musical career a year later as he felt in the end that he was not really good enough. Yet, the connection between music and his intellectual development was so close that he

claimed that at least three ideas which influenced him throughout his life: one, that was closely connected with his ideas on dogmatic and critical thinking, and with the significance of dogmas and traditions; second, a distinction between two kinds of musical composition, which he then felt to be immensely important, and for which he appropriated for his own use the terms “objective” and “subjective”; and third, a realisation of the intellectual poverty and destructive power of historicist ideas in music and in the arts in general (UQ, 58-9).

In 1924, he passed his second *Matura* at a teachers’ training college, which qualified him to be a teacher in primary school. At about the same time he became apprentice to an old master cabinetmaker in Vienna, Adalbert Pösch. The old master was proud to have a university student as an apprentice, while Popper learned more, as he believed, about the theory of knowledge from the old man than from any other of his teachers. During this time Popper was preoccupied with epistemology and it distracted him from cabinetmaking. After few months he, therefore, concluded his apprenticeship in October 1924, with a diploma. Then, he took up again social work with neglected children for a year and found it very difficult.

Back now to his intellectual development. During 1920s Popper began to expand his intellectual network beyond socialist youth. In early 1924, he became a friend of economist and social theorist Karl Polanyi (1886-1964). They first met when Polanyi gave lectures on guild socialism at the socialist students’ headquarters (Hacohen 2000, 119). As the attendance at the lectures declined, Polanyi moved the seminar to his apartment. Popper joined others, including the Hungarian émigré Aurel Kolnai, and younger Austrian students

Peter Drucker, Felix Schafer, and Hans Zeisel at Polanyi's home gatherings.⁷⁰ The subjects that they frequently discussed were socialism and the methodology of economics and social science. Popper said nothing more about their relationship than Polanyi's significant contribution to his intellectual development, especially on social science methodology (UQ, 17-18).⁷¹

The most long-lasting and sympathetic philosophical influence during these student years was Julius Kraft (1898-1960), a philosopher of law from Göttingen, who had come to Vienna in 1924 after completing a dissertation, under Leonard Nelson (1882-1927), on the method of legal theory in Kant and Fries. During his Vienna days, Kraft and Popper developed a close friendship and they had many informal, but intensive, conversations during 1924-25, on politics and philosophy. On politics, their discussions were centred on Popper's critique of Marxism and Social Democratic policies, and they had reached agreement quite soon as Kraft was also a non-Marxist socialist. On philosophy, their discussions were about the theory of knowledge, mainly Kant's so-called "transcendental deduction", his solution of the antinomies, and Nelson's "Impossibility of the Theory of Knowledge". They had fought a hard battle on these issues, which went on from 1926 to 1956, and they did not reach anything approaching agreement until a few years before Kraft's death in 1960 (UQ, 82-3). The core of their disagreement was this: Kraft accepted Fries's critique of Kant and his alternative foundation for knowledge, while Popper dismissed Fries's proposal as psychologistic and, by the early 1930s, disposed altogether of foundationalism. As to understand this disagreement, let us pause a moment to the origin of

⁷⁰ See Kari Polanyi-Levitt. *The Life and Work of Karl Polanyi* (London: Black Rose Books, 1993).

⁷¹ In fact, Polanyi had introduced him to philosopher Heinrich Gomperz, and tried to help him publish his first book, *Die beiden Grundprobleme der Erkenntnistheorie* in 1932, although Popper felt that Polanyi did not help him sufficiently in getting the book published. See Popper's letter to Polanyi, 17 September and 18 October 1932, Hoover Archives (339, 1); and Popper to Gombrich, 4 December 1934, Hoover Archives (300, 2). Even Polanyi was very helpful with Popper's New Zealand appointment, see Gombrich to Popper, 29 October 1943 (300, 2); and Hacoheh 2000, 119-20.

this debate. Nelson discovered the nearly forgotten Kantian philosopher Jakob Friedrich Fries (1773-1843). Fries considered himself Kant's true successor. He formed a critique of Kant's transcendental proofs in epistemology, ethics, and religion. Kant held that certain propositions had an a priori validity because no conception of reality or morality was possible without them. Fries thought that these synthetic a priori propositions, which holds that we can know what we do know about the world of experience only if some of the most fundamental things we know (for instance that space is three-dimensional and Euclidean) are available to us independently of experience (Miller 1997, 372), left too much of the world closed to the human mind and, at the same time, ran the risk of subjectivism. He developed a methodological procedure for grounding knowledge in a universal human psychology, thereby eliminating much of Kant's agnosticism and subjectivism.⁷² In his dissertation, Nelson defended Fries against contemporary Neo-Kantians,⁷³ and in his voluminous work in epistemology, ethics and jurisprudence carried the imprint of Fries's "Kantianism with a greater confidence of reason."⁷⁴ Like Kant and Nelson themselves, Kraft and Popper were anxious to avoid the sceptical abrogation of rationality into which Hume had stumbled, but they were in stark disagreement about how to avoid it (Miller 1997, 372). Popper shared Fries's and Nelson's critique of Kant but declined their solution, and offered his own: ever uncertain knowledge. His sharp arguments with Kraft over Fries and Nelson set the context for his epistemological revolution as attested to his *Die beiden Grundprobleme der Erkenntnistheorie* (1933). Hacohen suggests that the influence of Nelson on the early formation of Popper's thought was impressively powerful (Hacohen 2000, 120-131). Nelson shaped Popper's view of the history of philosophy in which Nelson

⁷² Hacohen 2000, 123. See also Jakob Freidrich Fries, *Neue oder anthropologische Kritik der Vernunft* [1828-31], *Sämtliche Schriften*, 26 vols. (Aalen: Scientia, 1969), Vols. 4-6.

⁷³ Leonard Nelson, "Jakob Friedrich Fries und seine jüngsten Kritiker" [1904], *Gesammelte Schriften*, 9 vols. (Hamburg: Felix Meiner, 1970), 1: 79-150.

⁷⁴ Quoted in Hacohen 2000. See Leonard Nelson, "Die kritische Methode und das Verhältnis der Psychologie zur Philosophie" [1904], *Gesammelte Schriften*, 1: 33. See also, Leonard Nelson, *Über das sogenannte Erkenntnisproblem* (Göttingen: Vandenhoeck und Ruprecht, 1908).

identified progressive philosophy with Kant and Fries, and dogmatic regress with Hegel and the romantics, and from which a new philosophical tradition was formed under the banner of “critical philosophy”.⁷⁵ Popper inherited this tradition, and employed Nelson’s criticism to later-day opponents such as positivism, Marxism and Neo-Kantianism.⁷⁶ Nelson’s influence on the young Popper was evident in his early writings: Popper utilised Nelsonian terminology in his incomplete 1927 paper on the psychology of lawfulness, wherein he employed Nelson’s distinction between critical and dogmatic thinking to child psychology, arguing that dogmatism prevailed in children’s mental life;⁷⁷ and in his second published article, “On the Philosophy of the *Heimat* Idea”, he was using Nelson’s cosmopolitanism to reinforce his own cosmopolitanism in which he argued for an internationalist standpoint in the education of youth.⁷⁸

In 1925 Popper enrolled in the Pedagogic Institute which was newly founded by the City of Vienna. During his years at the Institute, Popper expanded his social and intellectual circle. There he met Robert Lammer, who would help him write his first book and to whom he owed the habit of writing and rewriting, clarifying and simplifying his ideas (UQ: 93); Otto Haas, to whom he would entrust his papers upon leaving Vienna (Hacohen, 2000: 135); Ludwig Krenek; and Fritz Kolb, who after the Second World War served as Austrian Ambassador in Pakistan (UQ, 80). They were his life-long friends. The years at the Institute were the most significant for his personal and intellectual life as he met his future wife, Josefine Anna Henninger (1906-1985) there. She was training as a

⁷⁵ See Leonard Nelson, *Socratic Method and Critical Philosophy*, trans. Thomas K. Brown, (New Haven: Yale University Press, 1949), and *Progress and Regress in Philosophy: From Hume and Kant to Hegel and Fries*, Julius Kraft ed., trans. Humphrey Palmer, 2 vols., (Oxford: Basil Blackwell, 1970).

⁷⁶ Popper and Kraft inherited this tradition from Nelson, and they applied his criticism as can be seen from Popper’s *The Open Society and Its Enemies*, and Kraft’s *Von Husserl und Heidegger* (Frankfurt: Öffentliches Leben, 1957), wherein he relentlessly attacked on phenomenology, existentialism, and Hegelianism, and he accused them responsible for the current intellectual crisis and associated them with authoritarian politics.

⁷⁷ Karl Popper, “‘Gewonheit’ und ‘Gesetzlebens’ in der Erziehung: Eine pädagogisch-strukturpsychologische Monographie,” submitted as *Hausarbeit* to the Pedagogic Institute, Vienna 1927, Hoover Archives (12, 11).

⁷⁸ Karl Popper, “Zur Philosophie des Heimatgedankens,” *Die Quelle* 77 (1927), 899-908.

physical education teacher, and was to become one of the severest judges of his work. Popper was soon became an intellectual leader to fellow students and giving unofficial seminars, reviewing class material and helping them prepare for exams. He found that an academic milieu at the Institute conducive to a systematic development of his theoretical interests. But he said that he learned very little from the teachers there save for Karl Bühler (1879-1963) and Heinrich Gomperz (1873-1942), who were important for his intellectual development.

Karl Bühler was a Professor of Psychology at the University of Vienna. He first obtained a medical degree in 1903, and two years later, he joined psychologist Oswald Külpe in Würzburg. The Würzburg school was known for its *Denkpsychologie* (psychology of thought, or now known as cognitive psychology), which concentrates on the investigation of high-level thought process. At that time, he was known as a leading child psychologist due to his book *The Mental Development of the Child* (1918). And he was also one of the first *Gestalt* psychologists. Bühler was the first university professor Popper managed to get acquaintance with during his years at the Institute. He attended in all his university lectures in logic and psychology and managed to join his colloquium as early as in the first semester. Through Bühler he discovered the doctrines of the Würzburg school especially, those of Külpe and Otto Selz (1881-1943). He read all the major works of Gestalt and Würzburg psychologists. And it was through the dialogue with Bühler's work that Popper began to systematically explore the psychology of learning (Hacohen 2000, 140).

The 1925 also marks the beginning of publishing period in Popper's intellectual development, in which shows Popper's evolution from a student of pedagogy into a serious philosopher of science ten years later—his first essay was published in 1925, and in 1934-35 he presented his revolutionary philosophy. In his first published essay entitled *Über die Stellung des Lehrers zu Schule und Schüler: Gesellschaftliche oder individualistische Erziehung?* ("The Attitude of the Teacher toward the School and Pupils: Social or Individual Education?") Popper dealt with the issue of the individuality of student, wherein he argues that each student should be regarded as an individual as much as possible, rather than as kinds.⁷⁹ Popper held this attitude for the rest of his life, but this brief essay plays no important role in his intellectual development. Meanwhile, the essays that emerged between 1927 and 1931 are of the highest significance as they first led to the writing of *Die beiden Grundprobleme der Erkenntnistheorie* (written between 1930 and 1933 but first published in 1979) and then fully developed in *Logik der Forschung* (1934). These essays comprise of two articles, "Zur Philosophie des Heimatgedankens" (1927) and "Die Gedächtnispflege unter dem Gesichtspunkt der Selbsttätigkeit" (1931), both published in *Die Quelle*; and three theses, *Goewohnheit und Gesetzerlebnis in der Erziehung* (1927), *Zur Methodenfrage in der Denkpsychologie* (1928), and *Axiomen, Definitionen und Postulate der Geometrie* (1929), all of which only became available to scholars after Popper's death in 1994. I shall come back later to discuss these essays in turn. Before that, however, we should look first at his intellectual acquaintances in 1926.

Popper was in his second year at the Pedagogic Institute when Karl Polanyi introduced him to Heinrich Gomperz in 1926. Gomperz was then a professor of philosophy

⁷⁹ Karl Popper, "Über die Stellung des Lehrers zu Schule und Schüler: Gesellschaftliche oder individualistische Erziehung?" *Schulreform*, 4 (1925), 204-8. See also John Wettersten, "New Insights on Young Popper," *Journal of the History of Ideas*, Vol. 66 No. 4 (2005), 603-31; and Stefano Gattei, *Karl Popper's Philosophy of Science: Rationality without Foundations*. (New York: Routledge, 2009), 8.

at the University of Vienna, and he immediately became his new mentor. He invited him from time to time, for the next two years, to his Viennese villa, and let him talk. During their eight to ten times of meeting, they discussed about psychology—the psychology of knowledge or of discovery. It was through his discussions with Gomperz that Popper began to shift his attention to the problems of the logic of discovery (UQ, 83-4). And it was in discussions with Gomperz that he began to emphasize his own realism: his conviction that there is a real world, and that the problem of knowledge is the problem of how to discover this world. He usually gave Gomperz a portion of manuscript to read, and receiving it back with few comments. Popper also took Gomperz's course on Plato in the spring of 1926⁸⁰ and read all his writings, and amazed by his outstanding historical approach: 'he could follow a historical problem through all its vicissitudes from Heraclitus to Husserl, and (in conversations anyway) to Otto Weininger, whom he had known personally, and regarded as almost a genius' (UQ, 83). Above all, his writings enlightened Popper on the subjects such as epistemology, psychology, and the methodology of science.

In 1927 Popper came out with his second published essay, "Zur Philosophie des Heimatgedankens" (On the Philosophy of the Idea of Homeland), written after a seminar on the *Heimat* idea at the Pedagogical Institute. In this essay, Popper developed an idea that was central not only in his pedagogy, but also in his psychology and his theory of the open society. The idea was about dogmatic thinking: that human beings have the natural propensity to be dogmatic, and they have to learn to overcome dogmatism through the conscious appeal to reason in order to be rational. We can trace some influences that helped in shaping his view on this subject from Bühler to as far as Nelson. His arguments pertaining to pedagogy and psychology which he argues that the teachers' task is to help

⁸⁰ Quoted in Hacothen from Transcript, Hoover Archive (335, 19).

children abandon the restricted views of their home to broader and rich perspectives about culture, aesthetics, art, ethics, law, and rationality were highly indebted to Eduard Burger,⁸¹ Karl Bühler,⁸² and Charlotte Bühler⁸³ (Wettersten 2005). He used Nelson as to criticize the concept of *Heimat* on the grounds of its educational limits that would foster patriotism and of political dangers that would bring about fascism, and to support his cosmopolitanism especially in his internationalist stance in the education of youth.⁸⁴

Upon completing his two-year programme at the Pedagogic Institute, Popper submitted a protothesis, “*Goewohnheit*” und “*Gesetzerlebnis*” in der *Erziehung: Eine pädagogisch-strukturpsychologische Monographie* (“*Habit*” and “*Experience of Lawfulness*” in *Education: A Pedagogic-Structural-Psychologic Essay*). The thesis was an attempt to provide a psychological explanation for the children’s natural need of dogmatism. Hacoheh suggests that Popper employed Nelsonian terminology in this essay where he applied Nelson’s distinction between critical and dogmatic thinking to child psychology, arguing that dogmatism prevailed in children’s mental life (Hacoheh 2000, 126).

Now it was an obvious fact that this essay marks Popper’s first attempt to develop his philosophy of science. As Wettersten (2005) and Gattei (2009) suggest, Popper espoused a philosophy of science that was very close to Hans Vaihinger’s with a strong inductivist element, even though its methodology is deductivist. He tried to apply this method in his psychological research of dogmatism in children. On the one hand, Vaihinger’s theory is deductivist in that it assumes that theory must lay the basis for any

⁸¹ Eduard Burger, *Arbeitspädagogik* (Leipzig, 1923).

⁸² Karl Bühler, *Die geistige Entwicklung des Kindes*, fünfte Auflage (Jena, 1929).

⁸³ Charlotte Bühler, *Das Seelenleben des Jugendlichen* (Jena, 1922).

⁸⁴ For a more detailed account on *Heimat* and Popper’s critique, see Hacoheh (2000) and Stefano Gattei (2009).

empirical research by identifying its object of inquiry. On the other hand, however, Popper wanted to find a way to employ theory to guide research without allowing it to influence the researcher's view of his facts. Thus, he stated that facts themselves should be observed in a purely neutral way, and independent of any theoretical prejudgments. It is clear from the above account that Popper adopted an inductivist approach in his 1927 essay, but he would relinquish this approach later on (Gattei 2009, 10).

Popper submitted his doctoral dissertation, *Zur Methodenfrage in der Denkpsychologie*,⁸⁵ to the University of Vienna in summer 1928. It was examined by Bühler and Moritz Schlick (1882-1936), and passing with the highest grade. However, he regarded it as reckless affair, written at the last minute as a methodological introduction to his psychological work based on years of research (UQ, 87).

The purpose of the dissertation, according to Popper, was to outline some of the methodological preconditions for scientific practise in cognitive psychology by which he discussed the use of philosophical anthropology as a guide for research in psychology. By doing so, we can see that Popper thoroughly and significantly moved from psychology to philosophy of science. He asked, in particular, whether one should assume—as Schlick and the Gestalt psychologists did—that psychological processes can and must be reduced to physical and/or biological processes. This is a new version of the methodological problem that he previously dealt with in *Gewohnheit und Gestzterlebnis*: how can one employ a theory as a guide for research without presupposing how the facts should be seen? In this dissertation Popper left aside the more sophisticated theory of Vaihinger but followed the very same line of argument he did in his earlier essay: in order to guide research one must

⁸⁵ *On the Methodological Problem of Cognitive Psychology.*

employ theory, but one must not presuppose the case in favour of the theory one employs. In this stance Popper was not only following Vaihinger but also Whewell, who had earlier introduced this idea into the philosophy of science.⁸⁶

In developing his thesis, Popper took into consideration the work of three thinkers: Schlick, Bühler, and Else Köhler. Bühler followed the non-reductionism of the Würzburg School, while Köhler's works strongly defended reductionism of psychological processes to physical one as recommended by Schlick. Popper took his stand on the Würzburg School's side, but in a cautious manner, and presented Schlick and Köhler as enemy. Psychological processes, he argued, may or may not be reducible to physical one, but it is important not to decide the issue *a priori*, as Köhler and Schlick (as opposed to Vaihinger) wanted to do.

Popper also added to Bühler's theory of three functions of knowledge (expressive function, signal or release function, and descriptive function) what he called the argumentative function of knowledge which he regarded as the basis of all critical thought.⁸⁷ This indicates that he has abandoned the theory of judgment as an adequate theory of critical thought processes as he had in *Gewohnheit und Gestzterlebnis*. This, in a way, shows that he was not an associationist, since the associationist programme sought to show how thought structures were built up out of sense impressions (Wettersten 2005).

⁸⁶ For a comprehensive evaluation of Whewell's inductivist approach, see John Wettersten and Joseph Agassi, "Whewell's Problematic Heritage," in *William Whewell: A Composite Portrait*, eds. Menachen Fisch and Simon Schaffer, (Oxford, 1991); John Wettersten, "William Whewell: Problems of Induction vs. Problem of Rationality," *British Journal for the Philosophy of Science*, 45 (1994), 716-42; "William Whewell," *A Companion to the Philosophy of Science*, ed. W. H. Newton-Smith (Oxford, 2000), 564-67; James A. Bell, ed., *Whewell's Critics: Have They Prevented Him from Doing Good?* (Amsterdam and New York, 2005).

⁸⁷ See also in his *Conjectures and Refutations* (New York: Routledge, 2007).

There are two other aspects of this doctoral dissertation and both are of some interest for the story of Popper's intellectual development. Firstly, Popper borrowed from Schlick and Külpe the theory that the philosophy of science should describe what scientists really do; and secondly, his defence of the views of the Würzburg school in psychology and in particular his interest in Otto Selz.⁸⁸

In 1929 Popper submitted additional thesis to the Pedagogic Institute, entitled *Axiomen, Definitionen und Postulate der Geometrie*,⁸⁹ which qualify him to teach mathematics and physics in secondary school. Although Popper admitted in his autobiography that this thesis was written as merely to obtain a qualification to teach mathematics and physics in secondary school, it is most probably that his aim was actually to gain familiarity with and to master the disciplines—as an important preparation for his later work.⁹⁰ The thesis indicated Popper's shift of interest from psychology to the logic and methodology of science, wherein he first came to terms with mathematics, logic and the philosophy of the natural sciences.

The thesis dealt with the problem of the impact of non-Euclidean geometries on two groups of problems in the philosophy of science, wherein Popper assessed the history of geometry, elucidated the axiomatic principles, explained non-Euclidean geometry, and presented conflicting views on the foundation of geometry (issues pertaining to the axiomatic development of geometrical theories, such as the problem of the independence and necessity of the axioms, of the completeness and consistency of axiomatic systems, as

⁸⁸ See John Wettersten, "Külpe, Bühler, Popper," in *Karl Bühler's Theory of Language*, ed. A. Eschbach (Amsterdam and Philadelphia, 1988); Michel ter Hark, "Searching for the Searchlight Theory: From Karl Popper to Otto Selz," *Journal of the History of Ideas*, Vol. 64 No. 3 (2003), 465-87; and Christina Erneling, "Between Selz and Popper," *Philosophy of the Social Sciences*, 40 (2010), 311-18.

⁸⁹ *Axioms, Definition, and Postulates of Geometry*.

⁹⁰ Hacohen suggests that Popper's breadth of knowledge and theoretical sophistication clearly too more superior for the teaching requirements for secondary school as the secondary school students were gymnasium dropouts who did not plan on further academic study. Thus it seems that Popper's advance geometrical knowledge is of little use here.

well as whether definitions should be explicit or implicit), and those concerning the truth and falsity of geometrical assumptions, including the problems of the applicability of the various geometries to the real world.⁹¹ The thesis culminated with the latter discussion, and led to the first formulation of the problem of scientific rationality, and this undoubtedly the most important issue in his future philosophical progress.

Popper finally obtained a teaching job at the Schwegler Hauptschule in the fifteenth district. It was in 1930. His girlfriend of five years at the Pedagogic Institute, Josefine Henninger (Hennie), obtained a teaching job, too. And they could now marry. The ceremony took place on 11 April 1930. It was the beginning of a remarkable relationship, each devoted to the other, which lasted until Hennie's death in 1985.

He continued to read, think and write without respite. He was reading Kant intensively, and also works by contemporaries such as Rudolf Carnap, Kurt Gödel, Hans Hahn, Karl Menger, Hans Reichenbach, Richard von Mises, Friedrich Waismann, and Ludwig Wittgenstein. He read avidly the programmatic literature of the Vienna Circle, and of the *Verein Ernst Mach*. He attended Carnap's seminar in about 1929, and Gomperz introduced him to Viktor Kraft (1880-1975), who was the first member of the Circle whom he had met and the author of a book *The Basic Forms of Scientific Method* (1925) which he found most valuable. Popper met him several times in the *Volksgarten*, a park near the University. Kraft, like Popper, was influenced by neo-Kantian currents, and was ready to pay attention to his criticisms against the Circle. They became closest friend, and remained friends until Kraft's death.

⁹¹ For a thorough evaluation of this 1929 thesis, including influences that shaped his thought on the subjects, see Malachi Hacoen, *Karl Popper: The Formative Years 1902-1945* (Cambridge: Cambridge University Press, 2000) pp. 172-8; John Wettersten, "New Insights on Young Popper," *Journal of the History of Ideas*, Vol. 66 No. 4 (2005), 603-31; and Stefano Gattei, *Karl Popper's Philosophy of Science*, (New York and London: Routledge, 2009), 15-18.

Later that year, Popper met another member of the Vienna Circle, Herbert Feigl (1902-1988). His uncle, Walter Schiff, arranged the meeting by inviting Feigl and his fiancée, Maria Kaspar to his place. From their nightlong sessions, Feigl found that his ideas important, almost revolutionary, and encouraged him to publish them in book form. It never crossed into his mind to write a book. Gomperz had discouraged him from trying to publish as it was hopelessly difficult, and even Viktor Kraft's great book on the method of science was printed only with the support of special fund. His father and wife, too, discouraged him from carrying out a book project. His father was afraid that he would end up as a journalist, while his wife opposed the idea as she wished to continue their skiing and mountain climbing. Nevertheless, Popper was very excited with the idea of publishing book. Sometime in 1930, he began to write (UQ, 93).

Feigl set the pattern for Popper's relationship with the Vienna Circle. Popper had known about the Circle since 1927, first from a newspaper article by Otto Neurath and then in a talk he gave to a social democratic youth group. The Vienna Circle consisted of philosophers and scientists devoted to a radical reform of philosophy. They embarked a programme of applying recent advances in logic, mathematics, and scientific theory to philosophy. Among the most famous were Rudolf Carnap (1891-1970), Otto Neurath (1883-1945), and Moritz Schlick (1882-1936). Their philosophy, which was a new movement in European philosophy at that time, called "logical positivism" (Blumberg and Feigl, 1931). The Circle was the most influential and well-known group in Vienna, but they also established networks with the like-minded groups in Central European cities such as: Berlin, Prague, Warsaw, Budapest, Lvov, and Bratislava. They had disciples among philosophers, scientists, and mathematicians throughout Europe and North America. Many

of their members emigrated to the West in the 1930s, and had tremendous influence on postwar Anglo-American analytic philosophy.⁹²

The Circle began to meet weekly for a Thursday evening seminar at the Mathematical Institute on Boltzman Strasse in 1924. As the holder of Mach's chair in philosophy, Schlick presided as *primus inter pares*. Regular participants included Carnap, Feigl, Hahn, Olga Hahn-Neurath (1882-1937), Kraft, Menger, Neurath, and Waismann; social theorist Felix Kaufmann (1895-1949); young mathematicians Gustav Bergmann (1906-1987) and Kurt Gödel (1906-1978); Schlick's students Béla Juhos (1901-1971), Marcel Natkin (1904-1963), Heinrich Neider (1907-1990), Rose Rand (1903-1980), and Josef Schächter (1901-1995). Zilsel maintained a critical distance, but kept current. Gomperz made an occasional appearance. Frank came frequently from Prague, von Mises and Reichenbach from Berlin. Guests from abroad proliferated with the years: philosopher A. J. Ayer (1910-1989) and mathematician Frank Ramsey (1903-1930) from England; philosophers Ernest Nagel (1901-1985) and W. V. O. Quine (1908-2000) from the United States; Kurt Grelling (1886-1942) and Carl Hempel (1905-1997) from Berlin; Polish logician Alfred Tarski (1901-1983); Danish philosopher Jørgen Jørgensen; and Norwegian philosopher Arne Naess. The core group, however, remained quite exclusive. Members were simply those whom Schlick invited to join his private seminar, meeting on Thursday evenings. Popper never received invitation, and he never fished for one (UQ, 94).

But there were a number of epicycles formed around Schlick's seminar, meeting in Viktor Kraft's or Edgar Zilsel's apartments, and in other places; and there was also Karl

⁹² See Herbert Feigl, "The 'Weiner Kreis' in America," in *The Intellectual Migration: Europe and America, 1930-1960*, ed. Donald Fleming and Bernard Bailyn (Cambridge, Mass.: Harvard University Press, 1969); Viktor Kraft, *The Vienna Circle* (New York: Philosophical Library, 1953); and Alfred Ayer, ed., *Logical Positivism* (New York: Free Press, 1959).

Menger's famous Mathematical Colloquium. Some of these groups invited Popper to present his criticisms of the central doctrines of the Vienna Circle. His first appearance was in Edgar Zilsel's apartment. Several members of the Circle such as Hans Hahn, Philipp Frank, and Richard von Mises invited him to discuss his criticisms with them personally. Hans Thirring, the theoretical physicist, invited him to address his seminar; and Karl Menger invited him to join his colloquium. Thus, it is appropriate to say that his philosophical development in the early 1930s would owe so much to his critical dialogue—whether through their works or directly—with the members of the Vienna Circle.

4.2. Second Movement: From *Die Beiden Grundproblem der Erkenntnistheorie* to *Logik der Forschung*

In 1931 Popper came out with his sixth essay, and “Die Gedächtnispflege unter dem Gesichtspunkt der Selbsttätigkeit”. This essay revealed how deep the influence of Selz's psychology of thought upon the young Popper. His belief in this psychological doctrine became a crucial part of his philosophy (Wettersten 2005). But, this psychology did not provide him with a theory of science since Selz had no clear philosophy of science. But he did realise the pertinence of his psychology to the philosophy of science in that he maintained that discoveries of Benjamin Franklin, Michael Faraday, and Charles Darwin are examples of the thought processes he described in his psychology.⁹³ Thus, it is apt to suggest that Popper's essay on Selz's psychology played no direct role in further development of his philosophy of science.

⁹³ See Otto Selz, *Die Gesetze der produktiven und der reproduktiven Geistestätigkeit. Kurzgefasste Darstellung* (Bonn, 1924).

At the same time he was working on this essay, Popper embarked his project of writing a book *Die beiden Grundprobleme der Erkenntnistheorie*,⁹⁴ wherein he sought to develop a philosophy of science adequate to the standards of the time, and particularly those set by logical positivists. This project was intended, so to speak, to overcome the gap the Vienna Circle had opened between science and philosophy. The context in which Popper developed his philosophy of science in this writing merit—indeed demand—description: and so I undertake a short detour to give one.⁹⁵

The Vienna Circle programme responded to the fin-de-siècle and interwar crisis of traditional philosophy. Helmholtz, Mach, and the critics of language had demolished the long tradition of German romantic *Naturphilosophie*, and cast doubt on Kant and empiricism. While the French conventionalists such as Duhem, Poincaré, and Rey had undermined the trust in traditional scientific views, demonstrating that testing could not arbitrate among competing theories. But the major impetus for philosophical reform came from advances in logic, mathematics, and physics. Frege, Hilbert, and Russell had just demonstrated that logic, arithmetic, and geometry were purely formal, and had nothing to do with experience, or intuition.⁹⁶ Their propositions were tautologies, constructed in closed hypothetico-deductive systems. In the field of physics, the relativity theory diminished trust in perception and Kant's intuition of space and time. Science was undergone a tremendous advancement, yet philosophy could not provide an explanation of its procedures and remained out of step. World War I intensified the need for philosophical reform. Traditional belief in reason and progress proved illusory. If reason and progress were to be saved they had to be re-established on a scientific basis: their claims cut to size, purged of

⁹⁴ *The Two Fundamental Problems of Epistemology*.

⁹⁵ The following account I adapt from Hacoen (2000)

⁹⁶ See Gottlob Frege, *The Foundation of Arithmetic: A Logico-Mathematical Enquiry into the Concept of Number* (Oxford: Basil Blackwell, 1968).

metaphysical nonsense. Philosophy had to clarify problems and assertions, not to propound special “philosophical” pronouncements (Neurath 1973, 306).

As to accomplish the task, the Circle took a linguistic turn. By joining mathematical logic and empiricism, they aimed to reconstruct a new kind of language that would make science explicable. Only the statements of logic—analytic and formal—and empirical statements, designating discernible facts, were permissible. Statements about “unobservables” (or scientific theories) had to be logically reconstructed from empirical statements through induction. Philosophy was to become a servant of natural science, constructing its language, or clarifying its concepts and procedures. The futile competition of philosophies that had lasted for two thousand years would end. Real progress would become possible.

Wittgenstein’s *Tractatus Logico-Philosophicus* offered the Circle a programme while they were struggling to formulate an agenda for reform in the mid-1920s. The *Tractatus* was an inquiry into the relationship between language and reality and a critique of the limits of language. Schlick and Waismann found in it a working programme for a scientific philosophy.⁹⁷ In “The Turn in Philosophy,” the programmatic statement opening the *Erkenntnis*, Schlick announced that, in principle, science could provide solutions to all existing problems.⁹⁸ Old philosophical problems were pseudo-problems. They could receive no final answers, and diminished philosophy’s stature. Philosophy was not a science, or a system of knowledge, but a series of acts. It did not determine statement’s truth—science did—but their meaning. Its dignity was its clarity and finality.

⁹⁷ C. D. Broad, “Wittgenstein and the Vienna Circle,” *Mind* Vol. 71 No. 282 (1962), 251; and Brian McGuinness, “Wittgenstein and the Vienna Circle,” *Synthese* Vol. 64 No. 3 (1985), 351-8.

⁹⁸ See Moritz Schlick, “Die Wende in der Philosophie,” *Erkenntnis* I (1930), 4-11.

Around 1930, the Circle's members held a twofold criterion of demarcation between science and metaphysics. Metaphysical statements were meaningless because they failed to conform to scientific language's formal rules, but also because they could never be confirmed by reality. Waissman introduced, in 1930, the verifiability criterion: the sense of a proposition is the method of its verification (McGuinness 1985). Verification attracted varied degrees of attention. The Circle began the attack on metaphysics by seeking to explicate science's claims to knowledge and vindicate them. It ended up nearly shattering the scientific edifice.

Thus, *Die beiden Grundprobleme der Erkenntnistheorie* was conceived, from the beginning, largely as a critical discussion and as a correction of the doctrines of the Vienna Circle; and long sections were also devoted to criticisms of Kant and of Fries.⁹⁹ As he finished the first volume of the book, he sent it to be read first by Feigl, and then followed by Carnap, Schlick, Frank, Hahn, Neurath, and other members of the Circle; and also by Gomperz (UQ, 95).

Schlick and Frank accepted the book in 1933 for publication in the series *Schriften zur wissenschaftlichen Weltanschauung* (a series of books most of which were written by members of the Circle) of which they were the editors. Heinrich Gomperz wrote to the Mohr publishing house in December 1932 as to propose the publication of Popper's manuscript. But the Mohr promptly rejected the manuscript. The search for a publisher went on for another half year, until Springer accepted the work in June 1933. But Springer

⁹⁹ For a more detailed assessment of the ideas developed there and influences that informed Popper's philosophy of science, see Hacohen (2000); Wettersten (2005); and Gattei (2009).

insisted that it must be radically shortened. The book that emerged in the fall 1934, *Logik der Forschung* (*The Logic of Scientific Discovery*), bore little resemblance to the first manuscript. The manuscript, consisting of *Die beiden Grundprobleme*'s first volume, represented an epistemological breakthrough, whereas *Logik der Forschung* was a philosophical revolution, and that revolution took place in two stages. First, in fragments of a projected second volume of *Grundprobleme II*, dating to the fall and winter of 1932-3, Popper drew a new vision of science and philosophy. Second, in *Logik*, written between the summer of 1933 and the summer of 1934, he developed an innovative methodology to support his vision, applying it to probability and quantum physics (Hacohen 2000, 210).

The opening chapters of *Logik* stated with remarkable clarity and succinctness all the cardinal theses of falsificationism, the methodology of conjectures and refutations: (1) Induction is not only fallacious but unnecessary. The so-called inductive method is replaced by 'the deductive method of testing... the view that a hypothesis can only be empirically "tested"—and only after it has been advanced'. (2) Hypotheses are to be entertained in science if and only if they are empirically falsifiable. (3) If we want science to progress, we must not be frightened of mistakes, but we must adopt methodological rules whose overriding objective is to encourage falsification of our theories and the elimination of the mistaken ones among them. (4) Methodology is not to be identified, as positivists identify it, with the empirical discipline of describing how scientists behave, for even the underlying demarcation of scientists from others depends on the adoption of a decision or convention. (5) The basic statements with which scientific theories are confronted in tests are themselves conjectural. And succeeding chapters elaborate on these theses, and others.

Popper was a teacher in secondary school when he wrote this seminal book, and still a teacher when it was published late in 1934. *Logik der Forschung* was surprisingly successful, far beyond Vienna. It was widely read and reviewed.¹⁰⁰ The book was brought to Einstein's attention through musical connections (Watkins 1997, 649), and in his response (on June 15) he addressed the mistake in Popper's experiment, but praised his philosophy (Hacohen, 2000: 278). Carnap regarded *Logik* as an outstanding achievement in scientific logic, and Polish logicians Kotarbinski and Tarski thought it extraordinary. Now Popper became an "official opposition" to the Vienna Circle.

Karl Menger invited him to present paper in his Mathematical Colloquium in 1935. He was very delighted at the invitation. At this juncture, he was making progress on probability. Thus he presented a paper on probability and it was published a year later in the Colloquium's proceedings, *Ergebnisse eines Mathematischen Kolloquiums*.¹⁰¹ Now Popper began to attend international conferences, beginning with the Circle's 'Vorkonferenz' in Prague in 1934. There he met Tarski, who tutored him his celebrated "semantic conception of truth" (UQ, 111-2). This was a momentous occasion for him as Tarski had helped him solving the major problem impeding his realism—that is, how to explain the correspondence between true statements and facts. Popper was forever grateful and championed Tarski's ideas on several occasions.¹⁰² In 1935 he delivered a paper entitled "Empirical Method and the Concept of Experience" at the International Congress

¹⁰⁰ Some of the reviews are as follows: Gaston Bachelard, *Rechercher Philosophiques* 5 (1936), 447; Max Black, *Mind* 45 (1936), 104-6; Ludovico Geymonat, "Logica e filosofia delle scienze," *Rivista di filosofia* 28 (1936), 3-16; Carl Hempel, *Deutsche Literaturzeitung* 58 (1937), 309-14; Helen Knight, "Philosophy in Germany," *Philosophy* 11 (1936); Ernest Nagel, *Journal of Philosophy* 32 (1935), 107-8; Dina Sztéjnberg, *Rocznika Przegladau Filozoficznego* 37 (1935), 269-78; Julius Weinberg, *Philosophical Review* 45 (1936), 511-14; and Edgar Zilsel, *Die Naturwissenschaften* 23 (1935), 531 f.

¹⁰¹ Karl Popper, "Über nachwirkungsfreie Folgen," *Ergebnisse* 7 (1936), 12.

¹⁰² As we shall see shortly, he talked about Tarski's ideas in his first two lectures in Bedford College, London in 1935. He repeatedly acknowledged Tarski in his work, for example: *Conjectures and Refutations*, 223-8; *Objective Knowledge*, 308-40. And he even dedicated *Objective Knowledge* to Tarski.

of Scientific Philosophy in Paris, of which Carnap urged him to join as he promised to introduce him to English philosophers.

During the academic year 1935-36 Popper took unpaid leave from his teaching job as to entertain invitations to lecture abroad. First, he entertained an invitation from Susan Stebbing, who he met at the Paris congress, to lecture at Bedford College, London. He gave two lectures on Tarski's semantic theory of truth—as to introduce him to English philosophical circles. He also gave three lectures on probability at Imperial College, on an invitation arranged by Hyman Levy, professor of mathematics at the College; and he read two papers in Cambridge, and one in Oxford. He then read a paper on “The Poverty of Historicism” in Hayek's seminar at the London School of Economics. In this lecture tours he met: Joseph Henry Woodger, G. E. Moore, C. H. Langford, Isaiah Berlin, Gilbert Ryle, Schrödinger, Lionel Robbins, A. C. Ewing, F. A. Hayek, and Ernst Gombrich, and others. The last two names were to be of crucial important in his life: Gombrich then was a Research Fellow at the Warburg Institute, while Hayek, a Professor of Economics at the London School of Economics. Both of them were from Vienna, but Popper never met Hayek before, even though he had been a Professor and Director of the Institute for Trade Cycle Research in Vienna, and with Gombrich only fleetingly (although Gombrich's father had worked in his father law firm). During this visit he was taken by A. J. Ayer (1910-89), who he met in Paris congress a year earlier, to a meeting of the Aristotelian Society at which Bertrand Russell was reading a paper on “The Limits of Empiricism”.

Back now in Vienna. During this time Popper had no prospect for a university position in Vienna as there was growing hostility towards teachers who were Jews or of

Jewish origin. In fact, Popper and his wife (as she is married to a Jew) suffered as they had been treated badly by crypto-Nazi teachers in school (Watkins 1997, 650). This anti-Semitism and his prediction of a Nazi take-over of Austria gave him strong motive to emigrate. Thus he decided to go to the United States. In August and September 1936, he wrote to Carnap, Feigl, Lazarsfeld, Charles Morris, and Nagel, asking them to organise a lecture tour for him so that he could come and search for a job (Hacohen 2000, 320). But Woodger suggested him to apply for a professorship and a lectureship in what was then the Department of Philosophy and Education at Canterbury University College, Christchurch, New Zealand. He did apply sometime at the end of that year. He named Moore and Woodger as his referees, and submitted testimonials from Bühler, Carnap, Russell, and Tarski. Shortly afterwards he was appointed to the lectureship. The professorship, however, went to Ivan Sutherland from Wellington, who had obtained his doctorate in Glasgow in 1923 with a thesis in what we now call moral psychology.

4.3 Third Movement: Philosopher in Exile

The Poppers hurriedly left Vienna, and went into exile on the other side of the world. They arrived in Christchurch in March 1937, at the start of academic year. Popper was the only active philosopher, and did all the teaching in philosophy: logic, history of philosophy, ethics and politics, problems of philosophy, plus introductory courses. He also supervised research works on: Bacon's theory of science, Kant's criticism of Theism, Spinoza's political philosophy, and Bergson's theory of Intuition and Change (Catton and Macdonald 2004, 3). He set up a refugee organisation in New Zealand after the German occupation of Austria in 1938 (Watkins 1997, 653), and with the help of Dr R. M. Campbell, he managed

to get thirty-six visas for refugees, among them were Peter Hilferding, economist Felix Schafer, and physician Joseph Burnstein (Hacohen, 2002: 346), and a Viennese photographer called Bata (Watkins 1997, 653).¹⁰³

The war in Europe had reoriented Popper's interest from natural to social science, and from logic to politics. In his first year at the Christchurch he gave a number of seminars of what later became a marvellous little piece called "What is Dialectic?". It was a project of a critique of Hegelian and Marxist views on the relationship between logic and dialectic, and of which published in the journal *Mind*.¹⁰⁴ He also began to turn the talk on "The Poverty of Historicism" he gave at Hayek's seminar into an article. But it had developed to be more than just an article: a short section on essentialism which briefly mentioned Plato started growing, and it went on growing and growing until it became volume one of *The Open Society*. As the second volume of the *The Open Society* completed in 1943, Popper had a problem in finding a publisher.¹⁰⁵ It took about a year until he received a contract from Routledge, through the help of Hayek, in the spring of 1944. *The Open Society*, which was intended at first as *False Prophets: Plato—Hegel—Marx*, was published in 1945. Popper regarded his *Open Society* as his war effort, in which he defended freedom against totalitarian and authoritarian ideas. It contained metaphysical, ethical, and political issues, and Popper described in his preface as 'a critical introduction to the philosophy of politics and of history, and an examination of some of the principles of social reconstruction'. And it raised the greatest question of how much and when do [philosophical] ideas influence political action? (Agassi 2010).

¹⁰³ In his *Unended Quest* Popper did not state his role and achievement in this committee.

¹⁰⁴ Karl Popper, "What is Dialectic?" *Mind* Vol. 49, No. 196 (1940), 403-26.

¹⁰⁵ For an interesting stories about its publication and initial reception, see Joseph Agassi, "From Popper's Literary Remains," *Philosophy of the Social Sciences*, Vol. 40 No. 3 (2010), 552-64.

Having sent “What is Dialectic?” to *Mind*, Popper returned to the draft he had of “The Poverty of Historicism”. After completing the draft, he sent it to *Mind*, but it was rejected. Then he sent it to *Economica*, of which Hayek was the acting editor, and it got published as a series of three articles in 1944-45—then as a book in 1957. *The Poverty* contained analytical and methodological criticisms of social determinism and historicism. It became popular during the cold war in the context of debates on Marxism.

At about the same time Hayek was also manoeuvring to bring him to the LSE as the previous incumbent of the Chair of Logic and Scientific Method, Abraham Wolf, shared half-time with University College, had retired in 1941 after 35 years of service (Miller 1997, 380). Hayek proposed the half-time chair to be converted into a full-time readership, to be held not by a bright young man but by a mature and experienced logician and philosopher—at this time Hayek had Popper in mind. Hayek prevailed. Not long after that, Popper was appointed to the chair. Before he departed, Popper ventured on a project that would become the hallmark of his academic life in New Zealand. During the winter of 1945, Popper launched a reform movement that eventually transformed the University of New Zealand into a respectable research institution (Hacohen 2000, 499). Popper led faculty from three colleges in laying out a reform platform. They criticised current conditions compared to the European universities, and argued that only confrontation with research problems would keep teaching and teachers’ mind alive.¹⁰⁶ In July 1945, they published a pamphlet signed by faculty in Canterbury, Otago, and Auckland—all Popper’s friends. The pamphlet was excerpted in various New Zealand newspapers. An historian of

¹⁰⁶ See R. S. Allan et al., “Research and the University: A Statement by a Group of Teachers in the University of New Zealand” (Christchurch, N.Z.: Caxton Press, 1945); Karl Popper, “Some Comments on the University of New Zealand and Comparisons with European Universities” (discussion of university problems by the council and staff, 6 September 1945), Popper Archives (366, 12); John Eccles, “My Living Dialogue with Popper,” in *The Pursuit of Truth*, ed. Paul Levinson (Atlantic Highlands, N.J.: Humanities Press, 1982).

the University of Canterbury stated that “Popper’s impact on the academic life of the College was greater than that of any person, before or since... [His] most significant achievement was to force the research door open... the movement he fathered was to become an irresistible force in the postwar years.”¹⁰⁷

4.4 Fourth Movement: From LSE (1946-69) to Retirement (1969-94)

Popper arrived at the LSE in January 1946. Now, for the first time for 10 years he was able to attend philosophical meetings and conferences. First, he was an invited symposiast at the Joint Session of the Aristotelian Society and the Mind Association, together with Ryle and Lewy. He read a paper “Why are the Calculuses of Logic and Arithmetic are Applicable to Reality?”¹⁰⁸ After this came an invitation to talk to the Cambridge Moral Science Club, in October. The title of the talk was ‘Method in Philosophy’ (but Popper, in his *Unended Quest*, got his title wrong, putting ‘Are there Philosophical Problems?’), and leading British philosophers, present and future, attended. In the course of his lecture Popper confronted Wittgenstein, and ended up with Wittgenstein storming out of the meeting room. Now, this confrontation had become legend since great men always attract legend. Hence, this story demands description. So I would like to venture to give one, following Watkins’ reconstruction of what really happened there (Watkins 1997, 662-3):

The meeting was in Braithwaite’s room in King’s College. Wittgenstein, who chaired the meeting, sat on one side of an open fire and Popper on the other. Russell was in a high-backed rocking-chair. Others present included Elizabeth Anscombe, Richard

¹⁰⁷ See W.J. Gardner, E.T. Beardsley, and T.E. Carter, *A History of the University of Canterbury, 1873-1973* (Christchurch, N.Z.: University of Canterbury, 1973), 262.

¹⁰⁸ *Aristotelian Society, Supplementary Volume XX: Logic and Reality* (1946), 40-60.

Braithwaite, C. D. Broad, A. C. Ewing, Peter Geach, Norman Malcolm, Margaret Masterman, Stephen Toulmin, and A. J. T. D. Wisdom. There were also various students, including Peter Munz (Munz 2004, 114-27). The Secretary's invitation to Popper had said that 'short papers, or a few opening remarks stating some philosophical puzzle, tend as a rule to produce better discussions than long and elaborate papers'. The minutes say that Popper began by expressing astonishment at the Secretary's letter of invitation (a footnote explains that this is the Club's form of invitation). Wittgenstein seems to have mistaken Popper's opening remarks for a complaint against the Secretary, and sprang to his defence. But Popper was taking the wording of the invitation as expressing the Wittgensteinian thesis that there are no genuine philosophical problems, only puzzles; and he set out to counter this thesis by bringing forward some real problems. One concerned induction. Wittgenstein dismissed this as a merely logical problem. Another concerned the question of actual (as distinct from merely potential) infinities. (One of the two theses in Kant's first antinomy says that the world must have had a beginning in time, otherwise an actual or completed infinity of time will have elapsed. Popper rebutted this many years later.¹⁰⁹) Wittgenstein dismissed this as a mathematical problem. As his last example, Popper gave the question of the validity of moral rules. Wittgenstein, who had hold of the poker and was waving it about a good deal, demanded an example of a moral rule, to which Popper replied: 'Not to threaten visiting lecturers with pokers'. There was laughter, and Wittgenstein stormed out, angrily declaring as he went that Popper was confusing the issues; whereupon Russell called out, 'Wittgenstein, you're the one who's causing the confusion'.

¹⁰⁹ Karl Popper, "On the Possibility of an Infinite Past: a Reply to Whitrow," *The British Journal for the Philosophy of Science*, Vol. 29 (1978), 47-8.

The next day Russell told McLendon that he had never seen a guest so rudely treated, adding that Popper had more learning and erudition than all of them; and he afterwards wrote to Popper: 'I was much shocked by the failure of good manners on the side of Cambridge... I was entirely on your side throughout, but I did not take a larger part in the debate because you were so fully competent to fight your own battle'.

4.5 Coda

Popper lectured at the Christchurch for about 10 years, and followed by a readership at the LSE from 1946 until his retirement in 1969. He died in London in the early morning of 17 September 1994. His body was cremated, and some weeks later his ashes were laid, as he had requested, in his wife's grave in the Lainzer Friedhof, a small cemetery in Vienna. He is survived only by his eight brainchildren: *Logik der Forschung*, born in 1934; *The Open Society and Its Enemies*, and *The Poverty of Historicism*, both were born in 1945; *The Logic of Scientific Discovery* in 1959; *Conjectures and Refutations: The Growth of Scientific Knowledge* in 1963; *Objective Knowledge: An Evolutionary Approach* in 1972; *Replies to My Critics* (in Paul A. Schilpp's *The Philosophy of Karl Popper*) in 1974; and *The Self and its Brain*, which was conceived with his intellectual-mate John C. Eccles, in 1977.

4.6 Concluding Remarks

Throughout this chapter, I have presented the intellectual development of Popper, which spanned over seventy-five years, with greater emphasis on his Vienna years. I have

described his life within the social-political milieu of the *fin-de-siècle* Vienna and, among others, the rebellious side of the young Popper who claimed himself as a Marxist and involved in the Viennese leftist movement, and then the event that turned him into a vehement Marxist critic. I also discussed his early engagement with some leading Viennese intellectuals which helped in shaping his philosophical thought and his struggle as to provide an alternative philosophy [of science] as appose to the Vienna Circle. The struggle resulted in the writing of the *Die Beiden* and later on in the publication of the *Logik der Forschung*, which was regarded as the official critic of the Vienna Circle. From then on, began his long career as a professional philosopher in which he spent most of his lifetime in combating the current dominant philosophical and political thoughts prevalent in Europe such as positivism, Hegelianism, Marxism, Fascism and so on. I shall now turn to his philosophical experiment in dealing with the scientific knowledge and its foundations.