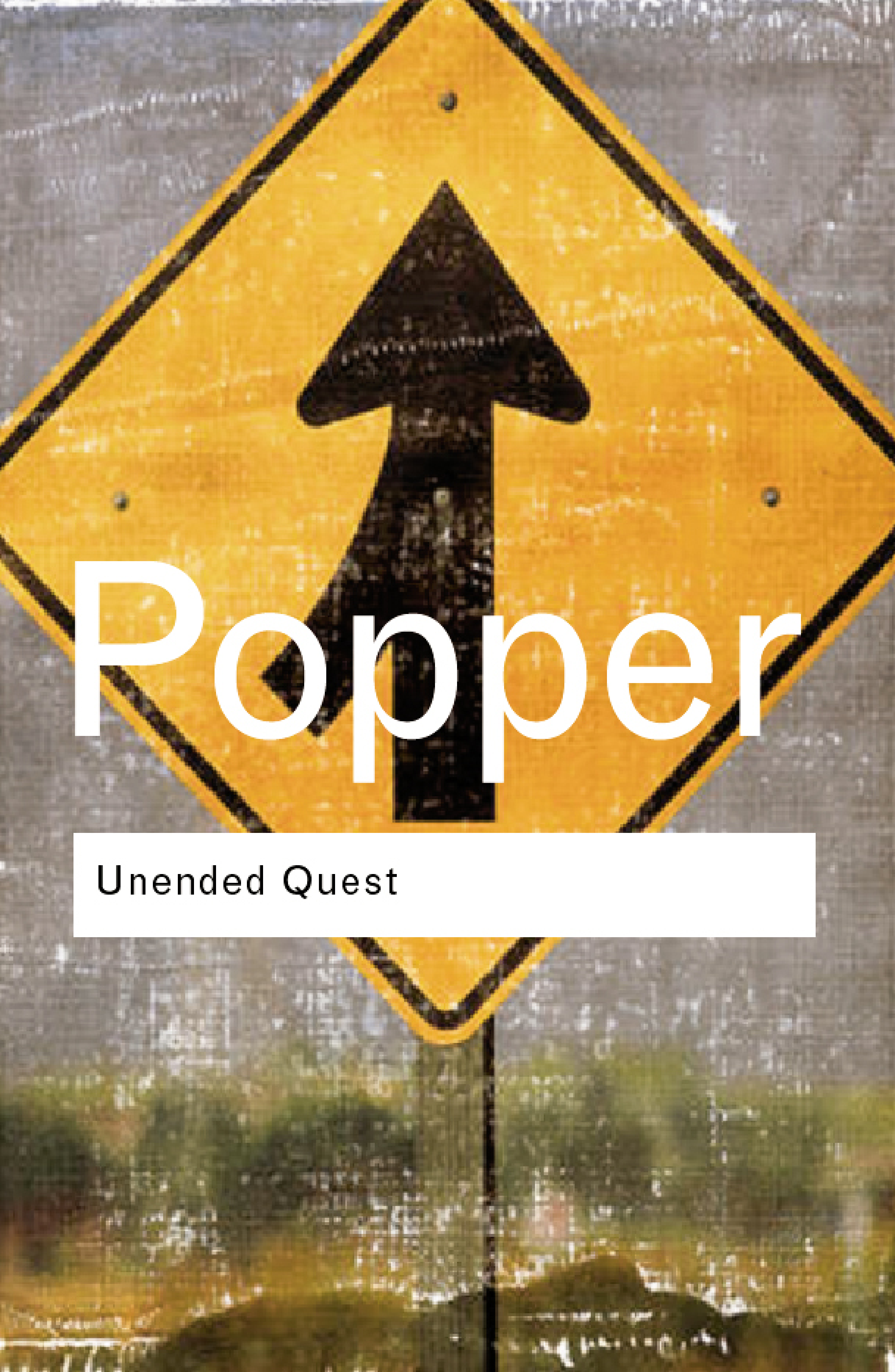
Popper
Unended Quest

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Karl
Popper

Unended Quest

An Intellectual Autobiography

London and New York

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Many problems arose in the course of the production of the original edition. It was only after the galley proofs had been corrected that, for technical reasons, the decision had to be made to collect the notes at the end of each contribution. (This is not unimportant because the manuscript was prepared on the

understanding that the notes would be printed as footnotes on the bottom of the relevant pages.)

The work done during the production of the original volumes in *The Library of Living Philosophers* by Professor Eugene Freeman, Mrs Ann Freeman and by their editorial staff was immense, and I wish to thank them again at this place for their help and their care.

The text of the present edition has been revised. A few small additions have been made, and one passage has been removed from the text, and has been incorporated in note 20.

Penn, Buckinghamshire
May, 1975 K.R.P.

What to leave out and what to put in? That's the problem.

HUGH LOFTING, *Doctor Dolittle's Zoo.*

1. OMNISCIENCE AND FALLIBILITY

When I was twenty I became apprenticed to an old master cabinetmaker in Vienna whose name was Adalbert Pösch, and I worked with him from 1922 to 1924, not long after the First World War. He looked exactly like Georges Clemenceau, but he was a very mild and kind man. After I had gained his confidence he would often, when we were alone in his workshop, give me the benefit of his inexhaustible store of knowledge. Once he told me that he had worked for many years on various models of a perpetual motion machine, adding musingly: "They say you can't make it; but once it's been made they'll talk different!" ("Da sag'n s' dass ma' so was net mach'n kann; aber wann amal eina ein's g'macht hat, dann wer'n s' schon anders red'n!") A favourite practice of his was to ask me a historical question and to answer it himself when it turned out that I did not know the answer (although I, his pupil, was a University student—a fact of which he was very proud). "And do you know", he would

ask, "who invented topboots? You don't? It was Wallenstein, the Duke of Friedland, during the Thirty Years War." After one or two even more difficult questions, posed by himself and triumphantly answered by himself, my master would say with modest pride: "There, you can ask me whatever you like: *I know everything.*" ("Da können S' mi' frag'n was Sie woll'n: *ich weiss alles.*")

I believe I learned more about the theory of knowledge from my dear omniscient master Adalbert Pösch than from any other of my teachers. None did so much to turn me into a disciple of Socrates. For it was my master who taught me not only how very little I knew but also that any wisdom to which I might ever aspire could consist only in realizing more fully the infinity of my ignorance.

These and other thoughts which belonged to the field of epistemology were occupying my mind while I was working on a writing desk. We had at that time a large order for thirty mahogany kneehole desks, with many, many drawers. I fear that the quality of some of these desks, and especially their French polish, suffered badly from my preoccupation with epistemology. This suggested to my master and also brought home to me that I was too ignorant and too fallible for this kind of work. So I made up my mind that on completing my apprenticeship in October, 1924, I should look for something easier than making mahogany writing desks. For a year I took up social work with neglected children, which I had done before and found very difficult. Then, after five more years spent mainly in studying and writing, I married and settled down happily as a schoolteacher. This was in 1930.

At that time I had no professional ambitions beyond schoolteaching, though I got a little tired of it after I had published my *Logik der Forschung*, late in 1934. I therefore felt myself very fortunate when in 1937 I had an opportunity to give up schoolteaching and to become a professional philosopher. I was almost

thirty-five and I thought that I had now finally solved the problem of how to work on a writing desk and yet be preoccupied with epistemology.

2. CHILDHOOD MEMORIES

Although most of us know the date and the place of our birth—mine is July 28, 1902, at a place called Himmelhof in the Ober St Veit district of Vienna—few know when and how their intellectual life began. So far as my philosophical development goes, I do remember some of its early stages. But it certainly started later than my emotional and moral development.

As a child I was, I suspect, somewhat puritanical, even priggish, though this attitude was perhaps tempered by the feeling that I had no right to sit in judgement on anybody except myself. Among my earliest memories are feelings of admiration for my elders and betters, for example for my cousin Eric Schiff, whom I greatly admired for being one year older than I, for his tidiness and, especially, for his good looks: gifts which I always regarded as important and unattainable.

One often hears it said nowadays that children are cruel by nature. I do not believe it. I was, as a child, what Americans might call a "softy", and compassion is one of the strongest emotions I remember. It was the main component of my first experience of falling in love, which happened when I was four or five years old. I was taken to a kindergarten, and there was a beautiful little girl who was blind. My heart was torn, both by the charm of her smile and by the tragedy of her blindness. It was love at first sight. I have never forgotten her, though I saw her only once, and only for an hour or two. I was not sent to the kindergarten again; perhaps my mother noticed how much I was upset.

The sight of abject poverty in Vienna was one of the main problems which agitated me when I was still a small child—so much so that it was almost always at the back of my mind. Few people now living in one of the Western democracies know what poverty meant at the beginning of this century: men, women, and children suffering from hunger, cold and hopelessness. But we children could not help. We could do no more than ask for a few coppers to give to some poor people.

It was only after many years that I found that my father had worked hard and long to do something about this situation, although he had never talked about these activities. He worked on two committees which were running homes for the homeless: a freemasons' lodge of which he was for many years the Master ran a home for orphans, while the other committee (not masonic) built and administered a large institution for homeless adults and families. (An inmate of the latter institution—the "*Asyl für Obdachlose*"—was Adolf Hitler during his early stay in Vienna.)

This work of my father's received unexpected recognition when the old Emperor made him a knight of the Order of Francis Joseph (*Ritter des Franz Josef Ordens*), which must have been not only a surprise but a problem. For although my father—like most Austrians—respected the Emperor, he was a radical liberal of the school of John Stuart Mill, and not at all a supporter of the government.

As a freemason he was even a member of a society which at that time was declared illegal by the Austrian government, though not by the Hungarian government of Francis Joseph. Thus the freemasons often met beyond the Hungarian border, in Pressburg (now Bratislava in Czechoslovakia). The Austro-Hungarian Empire, though a constitutional monarchy, was not ruled by its two Parliaments: they had no power to dismiss the two Prime Ministers or the two Cabinets, not even by a vote of censure. The Austrian Parliament, it would seem, was even

weaker than the English Parliament under William and Mary, if such a comparison can be made at all. There were few checks and balances, and there was severe political censorship; for example, a brilliant political satire, *Anno 1903*, which my father had written under the pen name Siegmund Karl Pflug, was seized by the police on its publication in 1904 and remained on the Index of prohibited books until 1918.

Nevertheless, in those days before 1914 there was an atmosphere of liberalism in Europe west of Czarist Russia; an atmosphere which also pervaded Austria and which was destroyed, for ever it now seems, by the First World War. The University of Vienna, with its many teachers of real eminence, had a great degree of freedom and autonomy. So had the theatres, which were important in the life of Vienna—almost as important as music. The Emperor kept aloof from all political parties and did not identify himself with any of his governments. Indeed he followed, almost to the letter, the precept given by Søren Kierkegaard to Christian VIII of Denmark.[1]

3. EARLY INFLUENCES

The atmosphere in which I was brought up was decidedly bookish. My father Dr Simon Siegmund Carl Popper, like his two brothers, was a doctor of law of the University of Vienna. He had a large library, and there were books everywhere—with the exception of the dining room, in which there was a Bösendorfer concert grand and many volumes of Bach, Haydn, Mozart, Beethoven, Schubert, and Brahms. My father, who was the same age as Sigmund Freud—whose works he possessed, and had read on publication—was a barrister and solicitor. About my mother Jenny Popper, *née* Schiff, I shall say more when I come to speak about music. My father was an accomplished speaker. I heard

him plead in court only once, in 1924 or 1925, when I myself was the defendant. The case was, in my opinion, clear-cut.[2] I had therefore not asked my father to defend me, and was embarrassed when he insisted. But the utter simplicity, clarity, and sincerity of his speech impressed me greatly.

My father worked hard in his profession. He had been a friend and partner of the last liberal Burgomaster of Vienna, Dr Carl Grübl, and had taken over his law office. This office was part of the large apartment in which we lived, in the very heart of Vienna, opposite the central door of the cathedral (*Stephanskirche*).[2a] He worked long hours in this office, but he was really more of a scholar than a lawyer. He was a historian (the historical part of his library was considerable) and was interested especially in the Hellenistic period, and in the eighteenth and nineteenth centuries. He wrote poetry, and translated Greek and Latin verse into German. (He rarely spoke of these matters. It was by sheer accident that I found one day some lighthearted verse translations of Horace. His special gifts were a light touch and a strong sense of humour.) He was greatly interested in philosophy. I still possess his 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 (whose *Greek Thinkers* he valued hightly); most of Kierkegaard's, Nietzsche's, and Eucken's works, and those of Ernst Mach; Fritz Mauthner's *Critique of Language* and Otto Weininger's *Geschlecht und Charakter* (both of which seem to have had some influence on Wittgenstein);[3] and translations of most of Darwin's books. (Pictures of Darwin and of Schopenhauer hung in his study.) There were, of course, the standard authors of German, French, English, Russian, and Scandinavian literature. But one of his main interests was in social problems. He not only possessed the chief works of Marx and Engels, of Lassalle, Karl Kautsky, and Eduard Bernstein, but also those of the critics of Marx: Böhm-Bawerk, Carl Menger, Anton Menger,

P. A. Kropotkin, and Josef Popper-Lynkeus (apparently a distant relative of mine, since he was born in Kolin, the little town from which my paternal grandfather came). The library had also a pacifist section, with books by Bertha von Suttner, Friedrich Wilhelm Förster, and Norman Angell.

Thus books were part of my life long before I could read them. The first book which made a big and lasting impression on me was read by my mother to my two sisters and to me, shortly before I learned to read. (I was the youngest of three children.) It was a book for children by the great Swedish writer Selma Lagerlöf, in a beautiful German translation (*Wunderbare Reise des kleinen Nils Holgersson mit den Wildgänsen*; the English translation is entitled *The Wonderful Adventures of Nils*). For many, many years I reread this book at least once a year; and in the course of time I probably read everything by Selma Lagerlöf more than once. I do not like her first novel, *Gösta Berling*, though it is no doubt very remarkable. But every single one of her other books remains, for me, a masterpiece.

Learning to read, and to a lesser degree, to write, are of course *the* major events in one's intellectual development. There is nothing to compare with it, since very few people (Helen Keller is the great exception) can remember what it meant for them to learn to speak. I shall be for ever grateful to my first teacher, Emma Goldberger, who taught me the three R's. They are, I think, the only essentials a child has to be taught; and some children do not even need to be taught in order to learn these. Everything else is atmosphere, and learning through reading and thinking.

Apart from my parents, my first schoolteacher, and Selma Lagerlöf, the greatest influence on my early intellectual development was, I suppose, my lifelong friend Arthur Arndt, 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.[4] Arthur Arndt was an ardent anti-nationalist. Though of German descent, he was born in Moscow, where he

also spent his youth. He was my senior by about twenty years—he was near thirty when first I met him in 1912. He had studied engineering at the University of Riga, and had been one of the student leaders during the abortive Russian revolution of 1905. He was a socialist and at the same time a strong opponent of the Bolsheviks, some of whose leaders he knew personally from 1905. He described them as the Jesuits of socialism, that is, capable of sacrificing innocent men, even of their own persuasion, because great ends justified all means. Arndt was not a convinced Marxist, yet he thought that Marx had been the most important theorist of socialism so far. He found me very willing to listen to socialist ideas; nothing, I felt, could be more important than to end poverty.

Arndt was also deeply interested (much more so than my father was) in the movement which had been started by the pupils of Ernst Mach and of Wilhelm Ostwald, a society whose members called themselves "The Monists". (There was a connection with the famous American journal, *The Monist*, to which Mach was contributor.) They were interested in science, epistemology, and in what nowadays would be called the philosophy of science. Among the Monists of Vienna the "half-socialist" Popper-Lynkeus had a considerable following, which included Otto Neurath.

The first book on socialism I read (probably under the influence of my friend Arndt—my father was reluctant to influence me) was Edward Bellamy's *Looking Backward*. I must have read it when I was about twelve, and it made a great impression on me. Arndt took me on Sunday excursions, arranged by the Monists, to the Vienna Woods, and on these occasions he explained and discussed Marxism and Darwinism. No doubt most of this was far beyond my grasp. But it was interesting and exciting.

One of these Sunday excursions by the Monists was on June 28, 1914. Towards evening, as we approached the outskirts of Vienna, we heard that the Archduke Franz Ferdinand, heir

apparent of Austria, had been assassinated in Sarajevo. A week or so after this my mother took me and my two sisters for our summer holidays to Alt-Aussee, a village not far from Salzburg. And there, on my twelfth birthday, I received a letter from my father in which he said that he was sorry not to be able to come for my birthday, as he had intended, "because, unfortunately, there is war" ("*denn es ist leider Krieg*"). Since this letter arrived on the day of the actual declaration of war between Austria-Hungary and Serbia, it seems that my father realized that it was coming.

4. THE FIRST WORLD WAR

I was twelve, then, when the First World War broke out; and the war years, and their aftermath, were in every respect decisive for my intellectual development. They made me critical of accepted opinions, especially political opinions.

Of course, few people knew at that time what war meant. There was a deafening clamour of patriotism throughout the country in which even some of the members of our previously far from warmongering circle participated. My father was sad and depressed. Yet even Arndt could see something hopeful. He hoped for a democratic revolution in Russia.

Afterwards I often remembered these days. Before the war, many members of our circle had discussed political theories which were decidedly pacifist, and at least highly critical of the existing order, and had been critical of the alliance between Austria and Germany, and of the expansionist policy of Austria in the Balkans, especially in Serbia. I was staggered by the fact that they could suddenly become supporters of that very policy.

Today I understand these things a little better. It was not only the pressure of public opinion; it was the problem of divided

loyalties. And there was also fear — the fear of violent measures which, in war, have to be taken by the authorities against dissenters, since no sharp line can be drawn between dissent and treason. But at the time I was greatly puzzled. I knew, of course, nothing about what had happened to the socialist parties of Germany and France: how their internationalism disintegrated. (A marvellous description of these events can be found in the last volumes of Roger Martin du Gard's *Les Thibaults*.)[5]

For a few weeks, under the influence of war propaganda in my school, I became a little infected by the general mood. In the autumn of 1914 I wrote a silly poem "Celebrating the Peace", in which the assumption was expressed that the Austrians and the Germans had successfully resisted the attack (I then believed that "we" had been attacked) and which described, and celebrated, the restoration of peace. Though it was not a very warlike poem I soon became thoroughly ashamed of the assumption that "we" had been attacked. I realized that the Austrian attack on Serbia and the German attack on Belgium were terrible things and that a huge apparatus of propaganda was trying to persuade us that they had been justified. In the winter of 1915–16 I became convinced—under the influence, no doubt, of prewar socialist propaganda—that the cause of Austria and Germany was a bad cause and that we deserved to lose the war (and therefore that we should lose it, as I naively argued).

One day, I think it must have been in 1916, I approached my father with a reasonably well-prepared statement of this position, but found him less responsive than I expected. He was more doubtful than I about the rights and wrongs of the war, and also about its outcome. In both respects he was, of course, correct, and obviously I had seen these things in an oversimplified manner. Yet he took my views very seriously, and after a lengthy discussion he expressed an inclination to agree with them. So did my friend Arndt. After this I had few doubts.

Meanwhile all of my cousins who were old enough were

fighting as officers in the Austrian army, and so were many of our friends. My mother still took us for our summer vaction to the Alps, and in 1916 we were again in the Salzkammergut—this time in Ischl, where we rented a little house high up on a wooded slope. With us was Freud's sister, Rosa Graf, who was a friend of my parents. Her son Hermann, only five years my senior, came for a visit in uniform on his final leave before going to the front. Soon after came the news of his death. The grief of his mother—and of his sister, Freud's favourite niece—was terrible. It made me realize the meaning of those frightful long lists of people killed, wounded and missing.

Soon afterwards political issues made themselves felt again. The old Austria had been a multilingual state: there were Czechs, Slovaks, Poles, southern Slavs (Yugoslavs), and Italian-speaking people. Now rumour began to leak through of the defection of Czechs, Slavs, and Italians from the Austrian army. The dissolution had begun. A friend of our family who was acting as judge advocate told us about the Pan-Slavic movement, which he had to study professionally, and about Masaryk, a philosopher from the Universities of Vienna and Prague who was the leader of the Czechs. We heard about the Czech army formed in Russia by Czech-speaking Austrian prisoners of war. And then we heard rumours about death sentences for treason, and the terror directed by the Austrian authorities against people suspected of disloyalty.

5. AN EARLY PHILOSOPHICAL PROBLEM: INFINITY

I have long believed that there are genuine philosophical problems which are not mere puzzles arising out of the misuse of language. Some of these problems are childishly obvious. It so

happened that I stumbled upon one of them when I was still a child, probably about eight.

Somehow I had heard about the solar system and the infinity of space (no doubt of Newtonian space) and I was worried: I could neither imagine that space was finite (for what, then, was outside it?) nor that it was infinite. My father suggested that I ask one of his brothers who, he told me, was very good at explaining such things. This uncle asked me first whether I had any trouble about a sequence of numbers going on and on. I had not. Then he asked me to imagine a stack of bricks, and to add to it one brick, and again one brick, and so on without end; it would never fill the space of the universe. I agreed, somewhat reluctantly, that this was a very helpful answer, though I was not completely happy about it. Of course, I was unable to formulate the misgivings I still felt: it was the difference between potential and actual infinity, and the impossibility of reducing the actual infinity to the potential. The problem is, of course, part (the spatial part) of Kant's first antinomy, and it is (especially if the temporal part is added) a serious and still unsolved[6] philosophical problem—especially since Einstein's hopes of solving it by showing that the universe is a closed Riemannian space of finite radius have been more or less abandoned. It did not, of course, occur to me that what was worrying me might be an open problem. Rather, I thought that this was a question which an intelligent adult like my uncle must understand, while I was still too ignorant, or perhaps too young, or too stupid, to grasp it completely.

I remember a number of similar problems—serious problems, not puzzles—from later, when I was twelve or thirteen; for example, the problems of the origin of life, left open by Darwinian theory, and whether life is simply a chemical process (I opted for the theory that organisms are flames).

These, I think, are almost unavoidable problems for anybody who has ever heard about Darwin, whether child or adult. The

fact that experimental work is done in connection with them does not make them nonphilosophical. Least of all should we decree in a high-handed manner that philosophical problems do not exist, or that they are insoluble (though perhaps dissoluble).

My own attitude towards such problems remained the same for a long time. I never thought it possible that any of those which bothered me had not been solved long ago; even less that any of them could be new. I had no doubt that people like the great Wilhelm Ostwald, editor of the journal *Das monistische Jahrhundert* (i.e. The Century of Monism). would know all the answers. My difficulties, I thought, were entirely due to my limited understanding.

6. MY FIRST PHILOSOPHICAL FAILURE: THE PROBLEM OF ESSENTIALISM

I remember the first discussion of the first philosophical issue to become decisive for my intellectual development. The issue arose from my rejection of the attitude of attributing importance to *words and their meaning (or their "true meaning")*.

I must have been about fifteen. My father had suggested that I should read some of the volumes of Strindberg's autobiography. I do not remember which of its passages prompted me, in a conversation with my father, to criticize what I felt was an obscurantist attitude of Strindberg's: his attempt to extract something important from the "true" meanings of certain words. But I remember that when I tried to press my objections I was disturbed, indeed shocked, to find that my father did not see my point. The issue seemed obvious to me, and the more so the longer our discussion continued. When we broke it off late at night I realized that I had failed to make much impact. There was a real gulf between us on an issue of importance. I remember

how, after this discussion, I tried strongly to impress on myself that I must always remember *the principle of never arguing about words and their meanings*, because such arguments are specious and insignificant. Moreover, I remember that I did not doubt that this simple principle must be well known and widely accepted; I suspected that both Strindberg and my father must be behind the times in these matters.

Years later I was to find that I had done them an injustice, and that the belief in the importance of the meanings of words, especially definitions, was almost universal. The attitude which I later came to call "essentialism"[7] is still widespread, and the sense of failure which I felt as a schoolboy has often come back to me in later years.

The first repetition of this sense of failure came when I tried to read some of the philosophical books in my father's library. I soon found that Strindberg's and my father's attitude was quite general. This created very great difficulties for me, and a dislike of philosophy. My father had suggested that I should try Spinoza (perhaps as a cure). Unfortunately I did not try his *Letters*, but the *Ethics* and the *Principles According to Descartes*, both of them full of definitions which seemed to me arbitrary, pointless, and question-begging, so far as there was any question at all. It gave me a lifetime's dislike of theorizing about God. (Theology, I still think, is due to lack of faith.) I also felt that the similarity between the ways of geometry, the most fascinating subject to me at school, and Spinoza's *more geometrico* was quite superficial. Kant was different. Though I found the *Critique* much too difficult I could see that it was about real problems. I remember that after trying to read (I do not suppose with much understanding, but certainly with fascination) the Preface to the second edition of the *Critique* (in the edition by Benno Erdmann), I turned the pages and was struck and puzzled by that queer arrangement of the Antinomies. I did not get the point. I could not understand what Kant (or anybody) might mean by saying that reason can

contradict itself. Yet I saw from the table of the First Antinomy that real problems were being argued; and also, from the Preface, that mathematics and physics were needed to understand these things.

But here I feel I must turn to the issue underlying that discussion, whose impact on me I remember so well. It is an issue that still divides me from most of my contemporaries, and since it has turned out to be so crucial for my later life as a philosopher I feel I must examine it in some detail, at the cost even of a long digression.

7. A LONG DIGRESSION CONCERNING ESSENTIALISM: WHAT STILL DIVIDES ME FROM MOST CONTEMPORARY PHILOSOPHERS

I call this a digression for two reasons. First, the formulation of my anti-essentialism in the third paragraph of the present section is undoubtedly biased by hindsight. Secondly, because the later parts of the present section are devoted not so much to carrying on the story of my intellectual development (though this is not neglected) as to discussing an issue which it has taken me a lifetime to clarify.

I do not wish to suggest that the following formulation was in my mind when I was fifteen, yet I cannot now state better than in this way the attitude I reached in that discussion with my father which I mentioned in the previous section:

Never let yourself be goaded into taking seriously problems about words and their meanings. What must be taken seriously are questions of fact, and assertions about facts: theories and hypotheses; the problems they solve; and the problems they raise.

In the sequel I shall refer to this piece of self-advice as my *anti-essentialist exhortation*. Apart from the reference to theories and hypotheses which is likely to be of a much later date, this exhortation cannot be very far from an articulation of the feelings I harboured when I first became conscious of the trap set by worries or quarrels about words and their meanings. This, I still think, is the surest path to intellectual perdition: the abandonment of real problems for the sake of verbal problems.

However, my own thoughts on this issue were for a long time bedevilled by my naive yet confident belief that all this must be well known, especially to philosophers, provided they were sufficiently up to date. This belief led me later, when I began more seriously to read philosophical books, to try to identify my problem—the relative unimportance of words—with one of the standard problems of philosophy. Thus I decided that it was very closely related to the classical problem of universals. And although I realized fairly soon that my problem was not identical with that classical problem, I tried hard to see it as a variant of the classical problem. This was a mistake. But in consequence I became greatly interested in the problem of universals and its history; and I soon came to the conclusion that behind the classical problem of universal words and their meaning (or sense, or denotation) there loomed a deeper and more important problem: the problem of universal laws and their truth; that is, the problem of regularities.

The problem of universals is even today treated as if it were a problem of words or of language usages; or of similarities in situations, and how they are matched by similarities in our linguistic symbolism. It seemed to me quite obvious, however, that it was much more general; that it was fundamentally a problem of *reacting similarly*, to biologically similar situations. Since all (or almost all) reactions have, biologically, an anticipatory value, we are led to the problem of anticipation or expectation, and so to that of adaptation to regularities.

Now throughout my life I have not only believed in the existence of what philosophers call an "external world" but I have also regarded the opposite view as one not worth taking seriously. This does not mean that I never argued the issue with myself, or that I never experimented with, for example, "neutral monism" and similar idealistic positions. Yet I was always an adherent of *realism*; and this made me sensitive to the fact that within the context of the problem of universals this term "*realism*" was used in a quite different sense; that is, to denote positions opposed to *nominalism*. In order to avoid this somewhat misleading use I invented, when working on *The Poverty of Historicism* (probably in 1935, see the "Historical Note" to the book edition), the term "*essentialism*" as a name for any (classical) position which is opposed to *nominalism*, and especially for the theories of Plato and Aristotle (and, among the moderns, for Husserl's "intuition of essences").

At least ten years before I chose this name I had become aware of the fact that my own problem, as opposed to the classical problem of universals (and its biological variant), was *a problem of method*. After all, what I had originally impressed on my mind was an exhortation to think, to proceed, in one way rather than in another. This is why, long before I invented the terms "*essentialism*" and "*anti-essentialism*", I had qualified the term "*nominalism*" by the term "methodological", using the name "methodological nominalism" for the attitude characteristic of my exhortation. (I now think this name a little misleading. The choice of the word "nominalism" was the result of my attempt to identify my attitude with some well-known position, or at least to find similarities between it and some such position. Classical "nominalism", however, was a position which I never accepted.)

In the early 1920s I had two discussions which had some influence on these ideas. The first was a discussion with Karl Polanyi, the economist and political theorist. Polanyi thought

that what I described as "methodological nominalism" was characteristic of the natural sciences but not of the social sciences. The second discussion, somewhat later, was with Heinrich Gomperz, a thinker of great originality and immense erudition, who shocked me by describing my position as "realist" in *both* senses of the word.

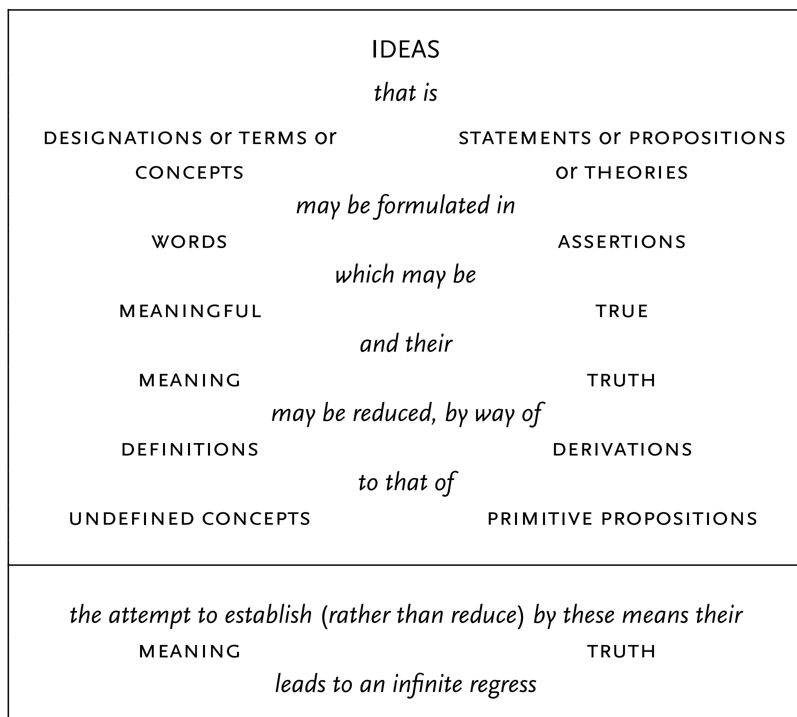
I now believe that Polanyi and Gomperz were both right. Polanyi was right because the natural sciences are largely free from verbal discussion, while verbalism was, and still is, rampant in many forms in the social sciences. But there is more to it. I should now say[7a] that social relations belong, in many ways, to what I have more recently called "the third world" or better "world 3", the world of theories, of books, of ideas, of problems; a world which, ever since Plato—who saw it as a world of concepts—has been studied mainly by essentialists. Gomperz was right because a realist who believes in an "external world" necessarily believes in the existence of a cosmos rather than a chaos; that is, in regularities. And though I felt more opposed to classical essentialism than to nominalism, I did not then realize that, in substituting the problem of biological adaptation to regularities for the problem of the existence of similarities, I stood closer to "realism" than to nominalism.

In order to explain these matters as I see them at present, I will make use of a table of ideas which I first published in "On the Sources of Knowledge and of Ignorance".[8]

This table is in itself quite trivial: the logical analogy between the *left* and *right* sides is well established. However, it can be used to bring home my exhortation, which may now be reformulated as follows.

In spite of the perfect logical analogy between the left and the right sides of this table, the left-hand side is philosophically unimportant, while the right-hand side is philosophically all-important.[9]

This implies the view that meaning philosophies and lan-



guage philosophies (so far as they are concerned with words) are on the wrong track. *In matters of the intellect, the only things worth striving for are true theories, or theories which come near to the truth*—at any rate nearer than some other (competing) theory, for example an older one.

This, I suppose, most people will admit; but they will be inclined to argue as follows. Whether a theory is true, or new, or intellectually significant, depends on its meaning; and *the meaning of a theory* (provided it is grammatically unambiguously formulated) *is a function of the meanings of the words in which the theory is formulated*. (Here, as in mathematics, a "function" is intended to take account of the order of the arguments.)

This view of the meaning of a theory seems almost obvious; it is widely held, and often unconsciously taken for granted.[10]

Nevertheless, there is hardly any truth in it. I would counter it with the following rough formulation.

The relationship between a theory (or a statement) and the words used in its formulation is in several ways analogous to that between written words and the letters used in writing them down.

Obviously the letters have no "meaning" in the sense in which the words have "meaning"; although we must know the letters (that is, their "meaning" in some other sense) if we are to recognize the words, and so discern their meaning. Approximately the same may be said about words and statements or theories.

Letters play a merely technical or pragmatic role in the formulation of words. In my opinion, words also play a merely technical or pragmatic role in the formulation of theories. Thus both letters and words are mere means to ends (different ends). And the only intellectually important ends are: the formulation of problems; the tentative proposing of theories to solve them; and the critical discussion of the competing theories. The critical discussion assesses the submitted theories in terms of their rational or intellectual value as solutions to the problem under consideration; and as regards their truth, or nearness to truth. Truth is the main regulative principle in the criticism of theories; their power to raise new problems and to solve them is another. (See my *Conjectures and Refutations*, Chapter 10.)

There are some excellent examples showing that two theories, T_1 and T_2, which are formulated in entirely different terms (terms which are not one-to-one translatable) may nevertheless be logically equivalent, so that we may say that T_1 and T_2 are merely different formulations of one and the same theory. This shows that it is a mistake to look on the logical "meaning" of a theory as a function of the "meanings" of the words. (In order to establish the equivalence of T_1 and T_2 it may be necessary to construct a richer theory T_3 into which both T_1 and T_2 can be translated. Examples are various axiomatizations of projective

geometry; and also the particle and the wave formalisms of quantum mechanics, whose equivalence can be established by translating them both into an operator language.)[11]

Of course, it is quite obvious that a change of one word can radically change the meaning of a statement; just as a change of one letter can radically change the meaning of a word, and with it, of a theory—as anybody interested in the interpretation of, say, Parmenides, will realize. Yet the mistakes of copyists or printers, though they may be fatally misleading, can more often than not be corrected by reflecting on the context.

Everybody who has done some translating, and who has thought about it, knows that there is no such thing as a grammatically correct and also almost literal translation of any interesting text. Every good translation is an *interpretation* of the original text; and I would even go so far as to say that every good translation of a nontrivial text must be a theoretical reconstruction. Thus it will even incorporate bits of a commentary. Every good translation must be, at the same time, close *and* free. Incidentally, it is a mistake to think that in an attempt to translate a piece of purely theoretical writing, aesthetic considerations are not important. One need only think of a theory like Newton's or Einstein's to see that a translation which gives the content of a theory but fails to bring out certain internal symmetries may be quite unsatisfactory; so much so that if somebody were given only this translation he would, if he discovered those symmetries, rightly feel he had himself made an original contribution, that he had discovered a theorem, even if the theorem was interesting chiefly for aesthetic reasons. (Somewhat similarly, a verse translation of Xenophanes, Parmenides, Empedocles, or Lucretius, is, other things being equal, preferable to a prose translation.)[12]

In any case, although a translation may be bad because it is not *sufficiently* precise, a *precise* translation of a difficult text simply does not exist. And if the two languages have a different structure,

some theories may be almost untranslatable (as Benjamin Lee Whorf has shown so beautifully[12a]). Of course, if the languages are as closely related as, say, Latin and Greek, the introduction of a few newly coined words may suffice to make a translation possible. But in other cases an elaborate commentary may have to take the place of a translation.[13]

In view of all this, the idea of a precise language, or of precision in language, seems to be altogether misconceived. If we were to enter "Precision" in the *Table of ideas* (see above), it would stand on the left-hand side (because the linguistic precision of a statement would indeed depend entirely on the precision of the words used); its analogue on the right-hand side might be "Certainty". I did not enter these two ideas, however, because my table is so constructed that the ideas on the right-hand side are all valuable; yet both precision and certainty are false ideals. They are impossible to attain, and therefore dangerously misleading if they are *uncritically* accepted as guides. *The quest for precision is analogous to the quest for certainty*, and both should be abandoned.

I do not suggest, of course, that an increase in the precision of, say, a prediction, or even a formulation, may not sometimes be highly desirable. What I do suggest is that *it is always undesirable to make an effort to increase precision for its own sake—especially linguistic precision—since this usually leads to loss of clarity*, and to a waste of time and effort on preliminaries which often turn out to be useless, because they are bypassed by the real advance of the subject: *one should never try to be more precise than the problem situation demands*.

I might perhaps state my position as follows. *Every increase in clarity is of intellectual value in itself; an increase in precision or exactness has only a pragmatic value as a means to some definite end*—where the end is usually an increase in testability or criticizability demanded by the problem situation (which for example may demand that we distinguish between two competing theories which lead to predictions that can be distinguished only if we increase the precision of our measurements).[14]