

## Karl Raimund Popper (1902–1994)—The philosopher of critical rationalism and rational moderation

An obituary by G. Prathap

*With the passing away of Sir Karl Popper on 17 September 1994, the world has lost the most important philosopher of science of this century.*

Karl Raimund Popper was born on 28 July 1902 in Vienna. His father was a scholarly lawyer with radical liberal sympathies, which probably explained Sir Karl's precocious left-leaning Marxist sympathies even in his early teens, and his mother was a talented musician from whom he inherited his love of music. His childhood was a Protestant one, being the son of baptized, assimilated Jews.

He left school at the end of the First World War and was for nearly ten years a student at the University of Vienna, reading mathematics and physics, psychology and philosophy. He also took care to educate himself, in discussion amongst the young intelligentsia of Vienna, in left-wing politics with the Social Democratic Party, in social work with children under Alfred Adler, and in his passion for music with the Society for Private Concerts founded by Schoenberg. He earned his doctorate in 1928 and qualified as a secondary school teacher in mathematics and physics the next year. In 1930 he married Josephine Henniger and they worked as school teachers.

His chief absorption during this period was philosophy and his chief concern here was the nature and theory of knowledge. He was grappling with what he was to call *The Two Fundamental Problems of the Theory of Knowledge*, Hume's problem of induction and the problem of demarcation. He therefore came to know the members of the Vienna Circle and he was soon to lock horns with their philosophy of logical positivism. The problems that he addressed were the same that they were interested in. Popper was to come up with solutions that were to go into his *Logic der Forschung* and which was to contain 'the chief of what have since become the generally accepted arguments against logical positivism' (Bryan Magee)

The success of this book established Popper's reputation as a philosopher. This, and the violent turn of political and social

events in Europe, Nazism in Germany and his anticipation of its spread to Austria after annexation, took Popper to the University of New Zealand in 1937. He remained there till 1945, teaching Philosophy. It was in this period that he taught himself Greek to read the Greek philosophers in the original and produced two books, *The Open Society and Its Enemies* in 1945 and *The Poverty of Historicism*, published in article form in 1944–45 and in book form much later in 1957.

He returned to England in 1946, at the invitation of his close friend, the distinguished economist Friedrich A. von Hayek, to teach at the London School of Economics. The social and political liberalism of Karl Popper and the economic philosophy of von Hayek, who is often regarded as the century's greatest champion of economic liberalism, were to help frame the agenda and ideals of the Thatcherite period of recent British history. He received his knighthood in 1965. After retirement from the London School of Economics in 1969, he continued to be active attracting and stimulating some of the finest scholarly minds of our time. He came to be regarded by many as the greatest philosopher of science of the century, if not, 'incomparably the greatest philosopher of science that has ever been,' in the words of Lord Peter Medawar, a winner of the Nobel Prize for Medicine and Physiology. Arthur Koestler wrote in *The Sunday Times* of *The Poverty of Historicism* that it will probably be 'the only book published this year which will outlive this century'.

Although Sir Karl Popper has contributed in a profoundly significant and original way to the philosophy of science, metaphysics, the theory of knowledge and social and political philosophy, it is a fact that he remains relatively unknown to a wider audience.

Sir Karl will mainly be remembered as a philosopher of science, for unravelling

the nature of the scientific enterprise and defining the scientific method. Sir Hermann Bondi put it simply: 'There is no more to science than its method, and there is no more to its method than Popper has said.'

According to Popper, the traditional empiricist or inductivist view of the scientific method, as celebrated by Bacon, Galileo and Newton, is incomplete. In this traditional approach, observations and experiments come first. By induction, general theories are proposed and hypotheses are then derived from these. Further experiments are performed to verify these hypotheses. Popper is impatient with the idea of experiment as a proof of a theory. His idea of *falsification* begins with a recognizable problem, goes on to propose a solution or theory (conjecture) as explanation, derives or deduces what are testable propositions from these, then designs and executes experiments which attempt to refute such propositions. The refutations combine with the original theory to yield a better one.

Popper's programme for evaluating any scientific investigation is thus very simple. It recognizes a basic asymmetry, one can say, between truth and falsehood; no statements can be proved true, but some statements can be proved false. Science is defined by this falsifiability—it is the fact that they can be proved false, but have not been, which gives accepted scientific statements their value. Once this is accepted, the underlying pattern of the development of a scientific study is characterized by the following chain:

$$P_1 \rightarrow TS \rightarrow EE \rightarrow P_2$$

where  $P_1$  is the initial problem, usually a rebuff to an existing theory or expectation,  $TS$  is the trial solution proposed, usually a new theory based on a conjecture or guess,  $EE$  the process of criticism and error elimination (refutation) applied to the trial solution and  $P_2$  the resulting

situation with new problems. In this feedback procedure,  $P_2$  is always different from  $P_1$ —complete failure to solve a problem is welcome as it teaches us something new about where the difficulties lie.

Popper believed firmly that in the history of science it is always the theory and not the experiment, always the idea and not the observation, which opens the way to new knowledge'. He also believed that 'it is always the experiment which saves us from following the track that leads to nowhere' which helps us out of the rut, and which challenges us to find a new way'. This close relationship between theoretical framework and experimental methodology was very graphically captured in a lucid essay on science in *The Economist* (14 November 1922, pp. 140–141), likening it to a 'subjectivity sandwich, with the theoretical ideas and conclusions wrapped around the chopped liver of reproducible data and methodology'.

It is the essence of Popper's philosophy that only through criticism can knowledge advance. Thus, his science is based on negativism, *eliminate error*, not *substantiate proof*—scientific laws are testable even if they are unprovable. This is the basis for his philosophy of *critical rationalism*.

Popper's last major statement was made in *Objective Knowledge* (1972). Knowledge was seen as something public; only basic statements which are publicly observable should be used to falsify a hypothesis. Thus observation was not simply a sensory experience contained in the heads of people but something in the nature of a public event which could be tested and modified. Popper also pointed out the evolutionary nature of knowledge. The Darwinian paradigm is applied to the world of objective knowledge; new conjectures and hypotheses are seen as variations and their criticism is interpreted as a process of natural selection. Popper's legacy here is two-fold, on the one hand, the emphasis on the uniqueness of the scientific enterprise, its internal specificity which demarcates it from non-science and distinguishes it from other intellectual human exercises, and on the other hand, the revelation of the modest, commonplace and unpretentious face of science, as something that belongs securely to a shared common experience and free from the extreme subjectivism of the

old empiricist traditions.

Although Popper's place in history as an outstanding philosopher of science is secure, his contributions to political philosophy are no less important. For it was he who '(unmasked) the pseudo-scientific swank of much Marxist talk' (David Miller) and in his *The Open Society and Its Enemies* and *The Poverty of Historicism* forecast the decline and fall of the Soviet system and established himself as one of the most formidable anti-Marxist voices of the century. The philosophy of *rational moderation* in politics and the defence of democracy that emerged from these books is considered to be as important as 'their profound and imaginative contribution to the understanding of Plato and Marx' (Anthony Quinton).

Popper shared with von Hayek the view that civilization did not come about by design. Instead, it is individual human action, with consequences which are more often unintended than intended, which produce the spontaneous order that we recognize as civilized society. Thus, many systems of social, political and economic systems compete with each other, surviving or failing depending on how they process information and how a process of natural selection acts to filter out the losers. Given this paradigm of methodological individualism, it is impossible for historical or sociological analyses to predict and plan the course of historical development. These plans must therefore fail and socialist governments then become totalitarian, seeking 'to enforce them by violence and to conceal their failures by systematic lying' (Anthony Quinton). This leads immediately to a rejection of the centrally planned and administered socialistic system.

As a philosopher of rational social action, politics and history, Popper continues a tradition of classic liberalism of Locke, Bentham and John Stuart Mills. His *Open Society* is considered to be the most significantly novel reformulation of liberal doctrine in a long time. His *The Poverty of Historicism* is an irrefutable argument against modern totalitarianism, be it in its fascist, or its communist forms, as Popper faced it at the time he wrote his work, or more ominously now, in its various fundamentalist forms.

An important issue that Karl Popper examined for the first time in *The Open Society and Its Enemies* was that of

democracy, 'Who should rule?' The classical theory is that democracy is the rule of the people, if not of all the people, at least of the many, and that the people have a right to rule. But this thesis was often flawed because the many always formed the rabble. In Popper's reformulation, the question of 'Who should rule?' was replaced with 'How is the state to be constituted so that bad rulers can be got rid of without bloodshed, without violence?' or with a more practical question 'How can we best avoid situations in which a bad ruler causes too much harm?' Democracy is therefore 'the rule of the law that postulates the bloodless dismissal of the government by a majority vote'.

His liberalism is based on utility; his formulation of the principle of utility is governed by a similar negativism, as *eliminate suffering*, and not, *maximize happiness*. Thus, social engineering must not be based on the holistic arrogance that society can be managed on a grand scale but it must be attempted gradually, piecemeal, by eliminating specific sources of misery. His prescription for good government is again deceptively (and negatively) simple—*one in which the public can change its rulers without bloodshed*.

Popper's plan for action in social reform was based on moderation and gradualism. It was in fact an extension of his views on nature and science. Sound knowledge progresses not by sudden discovery of large and definitive truths but by a slow and continuous process of eliminating falsehoods and errors in ever improving approximations of the truth. An absolute revealed truth can never be attained, only what he called an increasing verisimilitude is possible. This is a very important message as history records that the greatest injustices and intolerances have often been perpetrated and violence and terror unleashed to defend exploitative social orders in the name of revealed and absolute wisdom, utopianism and perfectionism.

Popper's world view is thus Socratic, admitting always the imperfections and uncertainties of our knowledge. The dispersion of error is always the first step toward knowledge. 'Our ignorance is sobering and boundless,' he says. 'With each step forward, with each problem we solve, we not only discover new and unsolved problems, but we also discover

that where we believed that we were standing on firm and safe ground, all things are, in truth, insecure and in a state of flux.'

To my mind, Sir Karl Popper was the nearest a person who lived in my times has come to deserving the Platonic mantle of the philosopher king, 'to (commemorate) whom, the state should erect monuments, and offer sacrifices as to demigods, a man blessed by grace, and godlike'. An intellectual of extraordinary calibre, a scholar of encyclopedic and catholic breadth of knowledge, a philosopher of deep foresight and vision and incisive depth, a communicator known for his simple, lucid expression, he produced original ideas which were at the same time, fundamental and simple and which may be remembered twenty centuries from now, much as Plato is remembered and revered today.

This writer shares Mary Midgley's belief that in this age of narrow super-specialization, scientists have become philosophically illiterate. Scientists tend to fear that Sir Karl Popper has put them into a straitjacket, that each time they present a paper at a conference or write one for publication or prepare a proposal for a grant, they have to project it in an

unambiguous Popperian framework, setting out clearly a hypothesis that they must then falsify. It is in fact Popper's assertion that what distinguishes science from other pretensions to knowledge is the preoccupation with ignorance, the readiness to dispel it with a well arranged programme of bold and risky conjecture followed by systematic critical experimentation and refutation. To be prepared to err, to anticipate mistakes by consciously and deliberately seeking them out, to learn from them is therefore what the scientific enterprise is all about. Thus the scientist is different, from say, a politician or a priest, because he is prepared to change his mind as the catalogue of facts change. Popper's philosophy is thus primarily one of action rather than one of obscurantist pedanticism. Scientists and knowledge workers can benefit immeasurably, if they can try to follow Popper in their investigation of their work and accept Sir John Eccles' exhortation to adopt his ideas 'as the basis of operation of one's scientific life'.

It will be appropriate to end this essay on Popper's legacy of *reason with moderation* with two quotations – one, a favourite of Popper's from the pre-Socratic philosopher Xenophanes:

*The gods did not reveal,  
from the beginning,  
All things to us,  
but in the course of time  
Through seeking we may learn  
and know things better.  
But as for certain truth,  
no man has known it,  
Nor shall he know it,  
neither of the gods  
Nor yet of all things  
of which I speak.  
For even if by chance  
he were to utter  
The final truth, he would  
himself not know it:  
For all is but  
a woven web of guesses.*

and the other from Popper himself:

*Man has created new worlds—of language, of music, of poetry, of science; and the most important of these is the world of the moral demands, for equality, for freedom, and for helping the weak.*

—*The Open Society*

and *Its Enemies*, vol. 1, p. 65.

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## Sir Karl Popper—Philosopher of science

*An obituary by B. V. Thosar*

Sir Karl Popper, one of the most eminent philosophers of modern times, passed away on 17 September 1994. He was a refugee from Hitler's Nazism and found refuge in England and spent the rest of his life as Professor in the prestigious London School of Economics, inspiring successive generations of students and leaders in humanistic pursuits—political, social and economic affairs, not only in his adopted country but in all the industrialized countries of the Western World.

Popper is well known as the author of the book, *The Open Society and its Enemies* (Hutchinson, 1959), written nearly five decades ago, which was the strongest criticism of Marxism and one might say, forecast the downfall of com-

munist as practised in Soviet Union, which nevertheless, in those days appeared to advance from strength to strength and came to be recognized as the second super power, nearly comparable to USA. Both these powers based on completely opposite philosophical foundations, resulted in their engagement in what came to be known as the 'Cold War', which had to be accepted by the rest of the world as a fact of political life, from which there seemed to be no escape. However, Popper's uncompromising philosophical opposition to Marxism and deeply held belief in democratic freedom were completely vindicated as we know, through the collapse of Soviet Communism, though it took several decades to happen. There is no doubt that thinkers and leaders

in the free, democratic world, such as Margaret Thatcher drew inspiration from Popper's way of thinking, which strengthened their hands as political activists. The inherent flaws in Marxist philosophy, as discerned by Popper, developed in due course, in bringing about the downfall of a mighty super power. He was, however, in the truest sense a philosopher, giving due consideration to all aspects of a subject under discussion. It has been pointed out, therefore, that he remained fiercely independent, maintaining that he was avowedly anti-Marxist but 'a socialist in the intellectual sense'.

Popper's fame throughout the world rested, as written above, on his opposition to Marxism and advocacy of democratic freedom. It is, however, not generally