This item was submitted to [Loughborough's Research Repository](#) by the author.
Items in Figshare are protected by copyright, with all rights reserved, unless otherwise indicated.

The rationalist tradition and the problem of induction: Karl Popper's rejection of epistemological optimism

PLEASE CITE THE PUBLISHED VERSION

<http://dx.doi.org/10.1016/j.histeuroideas.2010.10.005>

PUBLISHER

© Elsevier

VERSION

AM (Accepted Manuscript)

LICENCE

CC BY-NC-ND 4.0

REPOSITORY RECORD

Parvin, Phil. 2019. "The Rationalist Tradition and the Problem of Induction: Karl Popper's Rejection of Epistemological Optimism". figshare. <https://hdl.handle.net/2134/15491>.

This item was submitted to Loughborough's Institutional Repository (<https://dspace.lboro.ac.uk/>) by the author and is made available under the following Creative Commons Licence conditions.

For the full text of this licence, please go to:
<http://creativecommons.org/licenses/by-nc-nd/2.5/>

**The Rationalist Tradition and The Problem of Induction:
Karl Popper's Rejection of Epistemological Optimism**

Phil Parvin
Loughborough University

Dr Phil Parvin
Lecturer in Politics
Department of Politics, History, and International Relations
Loughborough University
Loughborough
Leicestershire
LE11 3TU

01509 222985 (direct landline)
07799 621069 (mobile)

p.parvin@lboro.ac.uk

This article evaluates Karl Popper's contribution to analytic philosophy, and outlines some of the contradictions in his work which make it difficult to locate in any particular tradition. In particular, the article investigates Popper's own claims to be a member of the rationalist tradition. Although Popper described himself as a member of this tradition, his definition of it diverged quite radically from that offered by other supporters of rationalism, like, for example, Mach, Carnap, and the logical positivists of the Vienna Circle. The reason for this was that the rationalist tradition, if it were to remain coherent and relevant, needed to overcome the dilemma posed by Hume's problem of induction. Popper believed that this problem rendered conventional understandings of rationalism, science, and inductive reasoning incoherent. This article suggests that Popper's principal contribution to modern philosophy was to reconfigure the rationalist tradition in such a way as to circumvent the problem of induction while preserving the rationalist commitment to reason, rational debate, and objective knowledge. Popper's reconfiguration of the epistemological bases of the rationalist tradition challenged dominant understandings of rationalist and analytic philosophy, and may be appropriately understood as part of a wider move among philosophers like Quine and Putnam to challenge conventional understandings of analytic philosophy, and of what philosophy itself could and could not achieve. It also informed a vision of social and political life (and of the social and political sciences) as rooted in principles of freedom, equality, and rational debate, but which cannot be fit within the traditional ideological landscape.

Key words: fallibilism, induction, open society, Popper, rationalism, tradition.

Karl Popper had an ambivalent attitude toward tradition. On the one hand, he believed it was not a fitting subject for intellectual inquiry: the point of academic inquiry, he thought, was not to engage in the 'essentialist' practice of defining particular traditions, or to locate oneself or others in such traditions, or to 'construct appropriate traditions to explain the ideas, events, and practices of the past', but rather to identify and resolve concrete problems which exist in the world.¹ On the

¹ M. Bevir, 'On Tradition', *Humanitas* 13/2 (2000), pp. 28-53, p. 53.

other hand, it is clear that he sought to define, and then to defend, a particular tradition of philosophical and intellectual inquiry against others – most obviously, the logical positivism of the Vienna Circle, the (different) language theories of Wittgenstein, Austin, and Ryle, and the critical theory of the Frankfurt School. That is, Popper was not merely content to present his own ideas in abstraction from the alternative approaches taken by his contemporaries and by figures in history.² Rather, he presented himself as a member of a particular tradition (the rationalist tradition), which he sought to defend against those *within* it who he thought had interpreted it incorrectly, and those outside of it who sought to replace it either with some amalgam of subjectivism, irrationalism, or historicism, or an appeal to scientism or positivism.

This ambivalence toward tradition is at least partly traceable to his more general attitude towards intellectuals and intellectual inquiry which he developed in his formative years in interwar Vienna.³ Popper was an iconoclast and a trenchant critic of much of what passed for philosophical inquiry during this time. Even before the outbreak of the first world war, Vienna had become known for its literary, intellectual, and cultural life. It had seen the blooming of Freudian and Adlerian psychotherapy, and of Marxism; as well as the scientific theories of Ernst Mach, the music of Schoenberg, and the rise of the Vienna Circle. As a young scholar studying in the fields of mathematics and, later, psychology and epistemology, Popper found himself increasingly infuriated by much of the intellectual scene, viewing it as a self-indulgence among the affluent, and dominated by passing fashions.⁴ In particular, Popper was dismissive of those intellectuals who indulged in the kind of holistic theorising which preached irrationalism or subjectivism, or which assumed the impossibility of human freedom in the face of such things as historical laws (Marx and Marxists),⁵ implicit power structures (Critical theorists),⁶ or the ‘unconscious’ (Freud).⁷

² K. Popper, ‘The Myth of the Framework’ (1976) K. Popper and M.A. Notturmo, *The Myth of the Framework: In Defence of Science and Rationality* (London, 1994), pp. 33-64.

³ K. Popper, *Unended Quest: An Intellectual Autobiography* (1974) (London, 2002); M. Hachohen, *Karl Popper: The Formative Years, 1902-1945: Politics and Philosophy in Interwar Vienna* (Cambridge, 2000); J. Shearmur, *The Political Thought of Karl Popper* (London, 1996);

⁴ See e.g. K. Popper, *Unended Quest: An Intellectual Autobiography*; ‘Author’s Note, 1993’, *The Myth of the Framework*, pp. ix-x; J. Shearmur, *The Political Thought of Karl Popper*.

⁵ See e.g. K. Popper, *The Open Society and Its Enemies, Vol 2: Hegel & Marx* (1945) (London, 2003).

He criticised what he later called the ‘bumptiousness and pretentiousness’ of many of the philosophers who populated the intellectual community of Vienna during those years (and since), and the arrogance with which they offered their conclusions to the world without argument or humility.⁸ Popper was a consistent and vehement critic of what we might call the cult of the expert: the assumption that certain people, on account of their intellect or insight, were capable of pronouncing as to the true nature of reality, or contributing to knowledge, in a way that suggested they were beyond criticism, or that their ideas would be seen to be true to anyone who possessed the requisite intelligence or empathy. Thus, Popper dismissed much of the intellectual scene in interwar Vienna as arrogant and complacent, and characterised by passing trends rather than an enduring commitment to the methods dedicated to the genuine growth of knowledge.

This arrogance found its most obvious expression in what Popper saw as the unwillingness of many philosophers at that time to present their ideas clearly, in order that they might be widely criticized and debated by other philosophers as well as non-philosophers. Popper believed widespread critique across disciplines was the engine which drove the growth of knowledge in all areas of intellectual endeavour, and he was infuriated by what he perceived as the unwillingness of many philosophers to present their ideas in ways which invited widespread critique. Popper therefore loathed the tendency among many thinkers to dress their ideas up in baffling language only understood by their own cliques, so as to insulate them from critique. The fashionable thinkers who held court in Viennese coffee shops ‘did not want to be understood.’⁹ This, he thought, betrayed both arrogance and cowardice, and it lay at the heart of his dismissal of many revered thinkers in the history of philosophy. For example, it lies at the heart of his rejection of Hegel who, in *The Open Society*, Popper describes as ‘bombastic and hysterical’, and ‘indigestible’: a thinker ‘outstanding in his lack of originality’ who deliberately wrote in an

⁶ See e.g. K. Popper, ‘Against Big Words’, *In Search of a Better World: Lectures and Essays from Thirty Years* (London, 1994), pp. 82-95; ‘Reason or Revolution?’ *The Myth of the Framework* (1970), pp. 65-81.

⁷ See e.g. K. Popper, *Unended Quest*, esp. pp. 36-38; ‘Science: Conjectures and Refutations’ (1957), *Conjectures and Refutations: The Growth of Scientific Knowledge*, pp. 43-86.

⁸ K. Popper, ‘Letter to Fritz Hellin’ (1943), J. Shearmur and P. N. Turner, *After The Open Society: Selected Social and Political Writings*. (London, 2008), pp. 109-11, p. 109.

⁹ K. Popper, ‘On Freedom’ (1958/1967), *All Life is Problem Solving* (London, 1999), pp. 81-92, pp. 83 & 85.

impenetrable style in order to fool people into thinking that he was intelligent and original, when he was neither.¹⁰ It is obvious, too, in his attitude toward the theorists of the Frankfurt School, which he described as 'irrationalist and intelligence-destroying'.¹¹ The critical theorists were, he said, like Hegel, caught up in a 'cult of incomprehensibility' which merely fed their own vanity, and placed limits on the growth of knowledge. Habermas, he said, did 'not know how to put things simply, clearly, or modestly'.¹² Adorno, he felt, had 'nothing whatever to say' and defended a philosophical position best described as 'mumbo jumbo', and Horkheimer's work was, he believed, 'uninteresting' and 'empty'.¹³ He also described Marx as a 'false prophet', Fichte as a 'fraud' and a 'windbag', and is reported to have suggested that Wittgenstein's *Tractatus* 'smelled of the coffee house', implying that it exemplified all that was wrong about the kind of ideas swirling around in the cosseted world of philosophers who felt little need to engage with others clearly and straightforwardly.¹⁴

Against the view that the problems of the world could be solved – or, more accurately, ignored or wished away – by experts, Popper argued that all people were 'problem solvers' and that 'all life is problem solving'.¹⁵ Furthermore, against the obfuscation of the Idealists, Romantics, and the irrationalists, and the complacent mystification common among the subjectivists and historicists, Popper defended an approach in which 'the thinker speaks as simply as possible' in order that her claims might be criticised and discussed as widely as possible.¹⁶ Looking back in his *Unended Quest* on the early years of his intellectual life, during which he was beginning to form his ideas with regard to the connections between psychology, epistemology, and mathematics, Popper allied himself with Carnap, who pleaded for 'rationality, [and] greater intellectual responsibility' among those who presumed to engage in philosophical inquiry. For Carnap, he said, 'asks us to learn from the way in which mathematicians and scientists proceed, and he

¹⁰ K. Popper, *The Open Society and its Enemies, Vol. 2: Hegel and Marx* (1945) (London, 2003), p. 35.

¹¹ K. Popper, 'Reason or Revolution?' *The Myth of the Framework*, p. 66.

¹² K. Popper, 'Reason or Revolution?' *The Myth of the Framework*, p. 78.

¹³ K. Popper, 'Reason or Revolution?' *The Myth of the Framework*, p. 78-80.

¹⁴ K. Popper, *The Open Society and Its Enemies Vol. 2: Hegel and Marx*, pp. 91, 59; D. Edmonds & J. Eidenow, *Wittgenstein's Poker: The Story of a Ten Minute Argument Between Two Great Philosophers* (London, 2002).

¹⁵ K. Popper, *All Life is Problem Solving*.

¹⁶ K. Popper, 'All Life is Problem Solving', *All Life is Problem Solving*, pp. 99-104.

contrasted this with the depressing ways of philosophers: their pretentious wisdom, and their arrogation of knowledge which they present to us with a minimum of rational or critical argument.¹⁷ This contempt for the obfuscatory mysticism and 'meaningless verbiage' of many philosophers ran through Popper's writings on a diverse range of subjects, from philosophy and science to music and history, as did his continued dismissal of those philosophical and intellectual claims made by the likes of Freud, Adler, and Marx, which he thought were framed in such a way as to insulate them from criticism.¹⁸ For all the changes that Popper's ideas underwent throughout his career, this dismissal of fads and fashions, and of the esoteric theorising of those who he believed replaced clarity with obfuscation in a way that rendered them redundant in the overarching quest for knowledge, is present throughout.

For Popper, then, there was a right way and a wrong way to seek knowledge about the world. The right way was to confront the world as an open-minded, humble, rational individual concerned to offer theoretical explanations of some aspect of our lived experience in a way that invites debate. It was to hold that debate and rational dialogue could bring one closer to truth, and that 'the truth' (rather than certainty) was a thing worth pursuing, and it was to commit oneself to the power of reason (appropriately understood) to produce knowledge. Against this, stood the overlapping perspectives of the irrationalists, subjectivists, traditionalists, and historicists who, he thought, rejected the power of reason to deliver truth, diminished the role of the individual as merely a pawn pushed around by wider social, economic, or historical forces, preached a dangerous and incoherent form of relativism, and, ultimately, adopted an arrogant perspective with regard to their own ideas which barred them from contributing to the growth of knowledge.

Nevertheless, while so much is clear even in Popper's earliest writings, it is difficult to straightforwardly locate Popper's work in the rationalist tradition or any other. His work is full of contradictions. He was, as we have said, both an iconoclast who railed against what he saw as the 'pretentiousness' which characterised debates in philosophy, history, and social theory, and a

¹⁷ K. Popper, *Unended Quest: An Intellectual Autobiography*, p. 100.

¹⁸ See e.g. K. Popper, 'Science: Conjectures and Refutations', *Conjectures and Refutations*; 'The Nature of Philosophical Problems and Their Roots in Science', *Conjectures and Refutations*; 'Reason or Revolution?' *The Myth of the Framework*.

participant in these debates. He was firm in his conviction that philosophy should incorporate the kind of rigor characteristic of the natural sciences, but 'abhorred' scientism and positivism.¹⁹ He was sceptical of disciplinary boundaries, and of the tendency among many academics to engage in debates about the methodological distinctiveness of their own particular endeavours, believing instead that all academic activity should be characterised by broadly the same method and the same approach. However, methodology mattered greatly to him, and his ideas concerning the appropriate conduct of scientists, philosophers, historians, and social scientists represent, for many, his most important and influential.²⁰ With regard to history, he wrote of the need to reconstruct the 'situational logic' of historical works in order that these works might be judged at least partly in the context of the intentions of their authors rather than against overarching, trans-historical standards which were valid for all time and in all circumstances.²¹ However, his own work (*The Open Society and its Enemies* and *The Poverty of Historicism* in particular) was characterised by a vehement denunciation of a variety of historical figures on the basis that their ideas appeared to have implications which were not compatible with twentieth century ideals of freedom, equality, and democracy.²² He claimed himself to be a member of the rationalist tradition, committed to the ideas of the Enlightenment, while heaping criticism on many of the thinkers most closely associated with this tradition, and rejecting many of the ideas which have gone on to shape and embody it.²³ He rejected teleological conceptions of morality for their reliance on predictions concerning the consequences of particular actions and decisions, but

¹⁹ On scientism, see K. Popper, 'Social Institutions and Personal Responsibility' (1947), *After the Open Society*, pp. 143-168 and 'Knowledge and the Shaping of Reality: The Search for a Better World' (1982), *The Search for a Better World*, pp. 3-29. See also K. Popper, 'Letter to Isaiah Berlin' (1959), *After the Open Society*, pp. 201-202; *Unended Quest*, p. 100; *The Poverty of Historicism* (1957) (London, 2002), p. 96. On positivism, see e.g. K. Popper, *The Logic of Scientific Discovery* (1935) (London, 2002), pp. 11-26; 'Knowledge and the Shaping of Reality', esp. pp. 6-7; and T. W. Adorno et al, *The Positivism Dispute in German Sociology* (1969) (New York, 1976).

²⁰ K. Popper, 'The Nature of Philosophical Problems and Their Roots in Science' (1952), *Conjectures and Refutations*, pp. 87-129; *The Poverty of Historicism*.

²¹ K. Popper, *The Poverty of Historicism*, pp. 136-141; 'The Philosophy of History' (1969), *The Myth of the Framework*, pp. 130-153; 'Models, Instruments, and Truth: The Status of the Rationality Principle in the Social Sciences' (1963), *The Myth of the Framework*, pp. 154-184. See also, William A. Gorton, *Karl Popper and the Social Sciences* (Albany, 2006), and *The Philosophy of the Social Sciences*, vol. 28, Nos. 3&4 (1998).

²² See e.g. M. Hachon, *Karl Popper: The Formative Years, 1902-1945: Politics and Philosophy in Interwar Vienna* (Cambridge, 2000); C. Taylor, 'The Poverty of the Poverty of Historicism', *Universities and Left Review* 4 (1958).

²³ K. Popper, *The Open Society and Its Enemies, Vol 2: Hegel and Marx*, pp. 248-284; 'On the Sources of Knowledge and Ignorance' (1960), *Conjectures and Refutations*, pp. 43-77.

subscribed to a 'negative utilitarianism' which evaluated actions and decisions in light of their consequences.²⁴ He defended the need for philosophers and others to adopt a 'critical rationalist' perspective with regard to problems, in which persons seek solutions through debate conducted in a spirit of open-mindedness and a willingness to learn, while himself appearing to reject precisely this perspective in his treatment of those thinkers with whom he disagreed.²⁵

Politically, too, Popper's views are hard to categorise. He defended traditional democratic principles, but was worried about the role of 'public opinion' in decision-making, describing as irresponsible and dangerous the idea that the 'voice of the people [possesses] a kind of final authority and unlimited wisdom.'²⁶ He defended liberal toleration, arguing that it embodied, and was required by, critical rationalism, while stating that any 'movement preaching intolerance places itself outside the law.'²⁷ Similarly, he claimed himself to be 'an advocate, even an admirer, of what is rightly called a free market' while also arguing for state intervention in the economy in order to alleviate poverty, and of bold and radical leaps in human knowledge at the same time as political gradualism.²⁸ Libertarians, classical liberals, socialists, conservatives, and Marxists have at various points all claimed Popper for their own.²⁹ And in *The Open Society and Its Enemies* Popper presented an important statement of the post-war social democratic consensus, rooted in an epistemology which would be used by thinkers on the political right to destroy precisely this consensus.³⁰

²⁴ K. Popper, e.g. 'Public and Private Values' (1946), *After The Open Society*, pp. 118-123; 'Utopia and Violence' (1948), *Conjectures and Refutations*, pp. 477-488.

²⁵ See, e.g., M. Hacohen, *Karl Popper: The Formative Years*, esp. pp. 428-439; J. Plamenatz, 'The Open Society and Its Enemies' (1952), R. Banborough, *Plato, Popper, and Politics: Contributions to a Modern Controversy* (Cambridge, 1967); Bryan Magee, *Karl Popper* (London, 1973).

²⁶ K. Popper, 'Public Opinion and Liberal Principles' (1955), *Conjectures and Refutations*, pp. 467-476, p. 467; See also, e.g. 'The Importance of Critical Discussion: An Argument for Human Rights and Democracy' (1981/1982), *After The Open Society*, pp. 329-340.

²⁷ K. Popper, *The Open Society and its Enemies, Vol 1: The Spell of Plato*, pp. 292-294. See also K. Popper, 'Toleration and Intellectual Responsibility' (1981), S. Mendus and D. S. Edwards, *On Toleration* (Oxford, 1987), pp. 17-34; 'On Toleration' (1981) *After The Open Society*, pp. 313-328; M. Hacohen, *Karl Popper: The Formative Years*.

²⁸ K. Popper, 'The Open Society Today' (1991), *After The Open Society*, pp. 383 – 393, p. 386; *The Open Society and Its Enemies, Vol 2*, p. 135-136.

²⁹ M. Hacohen, *Karl Popper: The Formative Years*; P. Parvin, *Karl Popper* (London, 2010), esp. pp. 96-98.

³⁰ M. Hacohen, *Karl Popper: The Formative Years*.

Small wonder, then, given the apparent contradictions in Popper's work, that many contemporary political philosophers, political scientists, economists, and social theorists are not sure what to do with it, or where to place it in the development of their discipline. On the whole, it is fair to say, they have chosen to do very little with it. Popper remains a marginal figure in political philosophy: contemporary Anglo American political theorists, for example, rarely engage with his ideas, and even more rarely encourage their students to study him. Critical theorists like Habermas rejected what they saw as the naïve positivism at the heart of his political thought.³¹ Hegelians like Charles Taylor are generally dismissive of his claims against Hegel.³² Plato scholars have dismissed him for his treatment of Plato. Contemporary Marxists have little to say about Popper's critique of Marx. He does not easily fall within any of the approaches to the study of political thought which currently dominate the field. His commitment to the ideals of the Enlightenment place him beyond the reach of critical theory, post-structuralism, and post-modernism. His evaluation of historical works by appealing to modern conventions and ideals places him outside of what has become known as the Cambridge School of history, while his belief that conclusions arising out of philosophical inquiry should be practically applicable, puts him in tension with the traditionally ahistorical perspective of the analytical tradition.³³ Indeed, it is perhaps this final point which has provoked such profound antipathy, especially among historians. Many scholars working on the political thought of Plato, Marx, and Hegel, for example, expressed contempt for Popper's reading of these figures, and the implications of their ideas.³⁴ For them, it represented the most obvious and problematic example of Popper's tendency to fit diverse thinkers together into overarching traditions for the purposes of critique. Popper labelled thinkers as diverse as Plato, Heraclitus,

³¹ J. Habermas, 'A Positivistically Bisected Rationalism', T. W. Adorno et al, *The Positivism Dispute in German Sociology*, pp. 198-225; K. Popper, 'Against Big Words', *In Search of a Better World: Lectures and Essays from Thirty Years* (London, 1994), pp. 82-95; and 'Reason or Revolution?' (1970) *The Myth of the Framework*, pp. 65-81.

³² C. Taylor, 'The Poverty of the Poverty of Historicism'.

³³ Q. Skinner, *The Foundations of Political Thought*, 2 Vols. (Cambridge, 1978); *Visions of Politics*, 3 Vols, esp. Vol 1: *Regarding Method* (Cambridge, 2002); J.G.A. Pocock, *Politics, Language and Time: Essays on Political Thought and History* (1972) (Chicago, 1989); *Political Thought and History: Essays on Theory and Method* (Cambridge, 2009); J. Tully, *Meaning and Context: Quentin Skinner and his Critics* (Cambridge, 1988); M. Bevir, 'Notes Toward and Analysis of Conceptual Change', *Social Epistemology* 17/1 (2003), pp. 55-63; *The Logic of the History of Ideas*.

³⁴ See e.g. R. B. Levinson, *In Defence of Plato* (Cambridge, MA, 1953); J. Wild, *Plato's Modern Enemies and the Theory of Natural Law* (Chicago, 1953); M. Cornforth, *The Open Philosophy and the Open Society: A Reply to Sir Karl Popper's Refutation of Marxism* (London, 1968); M. Hachohen, *Karl Popper: The Formative Years*, esp. p. 442.

Marx, Hegel, Mill, Rousseau, Comte, Fichte, Mannheim, Adorno, Horkheimer, and Habermas 'historicists' in order that he might reject them all at once for making the same mistakes.³⁵ Classicists, historians of political thought united with many analytic philosophers, sociologists, and economists in suggesting that in doing so Popper offered simplistic caricatures of these thinkers which ignored the many differences between them, and, moreover, was guilty of violating his own claims about the importance of evaluating thinkers in their particular historical contexts. Many historians saw this as a rejection of basic scholarly standards. Many analytic philosophers saw it as contradictory and unclear. The result was that Popper was, and still is, cast to the edges of political philosophical debate.

Nevertheless, Popper's ideas are important, and his contribution to philosophy remains influential. In particular, his contribution to epistemology and the philosophy of science remain genuinely groundbreaking. Indeed, I suggest, it is Popper's epistemology, and his reconfiguration of the rationalist tradition in the light of certain dilemmas in particular, which represents the key to understanding Popper's place in modern philosophy. In what remains, I examine this epistemology in order that we might disentangle Popper's rationalism and his fundamental reconfiguration of that very tradition in the light of important dilemmas that he thought it faced. It is not possible in this article to fully address the various methodological controversies involved in doing so, as such controversies run deep among historians and philosophers. Therefore, my task here will be limited to evaluating Popper's own attempts at reconstructing the rationalist tradition and its relation to analytic philosophy in response to a number of important dilemmas. Having done so, it will be possible to discuss some of the implications that his reworking of the rationalist/analytic tradition had for the conduct of philosophical inquiry, for the analytic tradition, and for social and political thought.

1. Logical Positivism, Science, and Epistemological Optimism.

³⁵ K. Popper, *The Open Society and its Enemies*, 2 vols; *The Poverty of Historicism*; 'Reason or Revolution?', *The Myth of the Framework*.

Popper described his later writings as 'dedicated to the struggle against irrationalism and subjectivism in physics and other sciences, especially in the social sciences.'³⁶ His dedication to this struggle, however, was evident long before then, in both his philosophical writings and his personal politics.³⁷ Underlying Popper's approach was a vehement rejection of subjectivism in all its forms, and a powerful defence of the power of ideas to resolve problems in the world. In particular, Popper rejected the claim made by German Idealists like Fichte, Schelling, and Hegel that science and philosophy were separate endeavours. *Contra* the Idealists, Popper argued that philosophy and science should be conceived as united in their aim to contribute to the growth of knowledge in the world, and to solve real problems.

In arguing as much, Popper placed himself beyond the reach of many traditional approaches to philosophical inquiry which had emerged up to that time. For example, his belief that philosophy should be understood as the search for *truth* placed him outside of the Wittgensteinian school, which held that philosophy should instead concern itself with *meaning*, and the Pragmatists, who sought not *truth* but *usefulness*.³⁸ His commitment to scientific rigor in philosophy placed him in opposition to critical theorists and others who, like the Idealists, argued for the radical separation of philosophical and scientific knowledge. And his belief in the power of reason to reveal new things about the world which were not merely the product of collective social understandings or accepted practices put him in opposition to those subjectivists and 'historicists' like Marx and Karl Mannheim who claimed that the sources of knowledge lay in historical laws, or common forms of life, or entrenched metaphysical frameworks.³⁹

³⁶ K. Popper, 'Against Big Words', p. 84.

³⁷ A number of scholars have suggested that Popper's ideas changed throughout his career, especially in his later years, when we appeared more sympathetic to the ideas of the New Right than in his more mature philosophy. See, for example, M. Hachon, *Karl Popper: The Formative Years*, and J. Shearmur, *The Political Thought of Karl Popper* (London, 1996).

³⁸ K. Popper, 'Optimist, Pessimist, and Pragmatist Views of Scientific Knowledge' (1963), *After The Open Society*, pp. 3-11.

³⁹ K. Popper, *The Open Society and its Enemies, Vol 2: Hegel and Marx*; K. Popper, *The Poverty of Historicism*; K. Mannheim, *Man and Society in an Age of Reconstruction* (London, 1940). See also, K. Mannheim, *Ideology and Utopia* (London, 1936); V. Meja & N. Stehr, *Knowledge and Politics: The Sociology of Knowledge Dispute* (1982) (London, 1990).

Indeed, in much of his writings, and for reasons that we touched upon earlier, Popper seemed keen to distance himself from the practice of philosophy *itself*, due to the tendency of philosophers to become fascinated by passing trends and fashions, such as irrationalism, subjectivism, and historicism. These approaches were all born of what Popper called *epistemological pessimism*: the idea that reason could not provide knowledge, or evaluate claims to truth and, hence, that the sources of knowledge lay not in objective standards of reasoning, but merely in the common assumptions or forms of life present in any particular community at any particular time, or in those laws of historical development which lay beyond the reach of humanity to alter. It was this epistemological pessimism shared by subjectivists and historicists which, he thought, ran contrary to the spirit of intellectual inquiry as it led to the idea that if reason could not comprehend the nature of reality, or effectively provide the tools by which claims about the world might be evaluated, then no-one need explain or justify their ideas to anyone, or subject their ideas to critique.

Popper provided an alternative epistemological vision in which reason was afforded central place. It was a vision in which new knowledge grew out of a critical engagement with existing knowledge, or what passed for it. Philosophical theories, like theories proposed in any other discipline, were assumed to stand or fall in the light of critique, and hence, they needed to be presented with humility, as conjectures rather than settled truths. The alternative, defended by the pessimists, was a vision of intellectual inquiry reduced to unfalsifiable assertions by self-proclaimed experts. Such a vision was philosophically impoverished and, he thought, politically dangerous. The notion that 'experts' might appropriately assert unassailable truths about such things as how we might order our political lives provided a way for political leaders to justify oppression and tyranny in the name of these truths, and to justify egregious violations of basic freedoms in the pursuit of ideals that only they could comprehend. Subjectivism, traditionalism, and the accompanying assumption that truth may be known with certainty by some individuals and not others led not just to oppression and elitism, but also to relativism. In emphasising in place of this epistemological pessimism the ability of reason to tackle concrete problems in the world, Popper cast himself in opposition to those 'fashionable' approaches of his contemporaries,

as 'a thoroughly old-fashioned philosopher who [believed] in a completely outdated philosophy: that is, a philosophy of an age long past, the age of rationalism and the Enlightenment.'⁴⁰

Popper, then, like the logical positivists of the Vienna Circle and the Enlightenment *philosophes*, was impressed by the ability of science to contribute to our knowledge of the world and believed, like them, that the methods of science could be appropriately understood as an exemplar for intellectual inquiry more generally.⁴¹ However, it is not sufficient simply to identify Popper as a rationalist who rejected the epistemological pessimism of the subjectivists and the irrationalists. For as much as he disagreed with the pessimism of the subjectivists, he was also fiercely critical of what he saw as the over-*optimism* shared by many thinkers associated with rationalism. He argued that in trying to overturn the authority of tradition and custom, and the epistemological pessimism characteristic of subjectivism, many rationalist philosophers had gone too far in the defence of reason, and hence, replaced the pessimism of the subjectivists with a blind over-optimism about what reason could achieve, and the way it operates in the world.

Popper was therefore a rationalist who shared an awkward relationship with rationalism, and with the logical positivists in particular. The epistemological optimism characteristic of the rationalist tradition, he argued, can be traced back to, and is exemplified in, the work of thinkers like Rene Descartes and Francis Bacon, and is closely associated with the development of analytic philosophy.⁴² For both Descartes and Bacon, knowledge emerged out of the process of confronting the world with one's intellect (that is, one's reason) uncluttered by one's contingent experience.⁴³ The fact that one is embedded in this or that nation or culture or linguistic community, or holds this or that opinion about some aspect of the world is, in an important sense, a *hindrance* to the pursuit of knowledge; a complication which needs to be avoided or transcended. In his *Meditations on First Philosophy*, for example, Descartes set about stripping

⁴⁰ K. Popper, 'On Freedom' (1967) *All Life is Problem Solving*, pp. 81-92, p. 83.

⁴¹ See e.g. K. Popper, 'What is Dialectic?' (1940), *Conjectures and Refutations*, pp. 419-451, p. 421. Also, *The Logic of Scientific Discovery*; *The Poverty of Historicism*.

⁴² Francis Bacon, *Novum Organum* (1620) (Illinois, 2009); Rene Descartes, *Meditations on First Philosophy* (1641) (Cambridge, 1996).

⁴³ K. Popper, 'Science: Problems, Aims, Responsibilities' (1963), *The Myth of the Framework*, pp. 82-111; 'Epistemology and Industrialization' (1979), *The Myth of the Framework*, pp. 185-209; 'On the Sources of Knowledge and Ignorance' (1960), *Conjectures and Refutations*, pp. 3-39.

away all those aspects of the self which might get in the way of establishing true knowledge. By systematically doubting all things, Descartes proceeded to destroy 'all false prejudices of the mind in order to arrive at the unshakeable basis of self-evident truth'.⁴⁴ In doing so, Descartes famously concluded that the only thing resilient to doubt was thought itself.

Similarly, Bacon argued that to truly understand the world we must begin by 'purging our minds of all anticipations or conjectures or guesses or prejudices' in order that we might reveal and understand the manifest truth which exists out in the world to be discovered.⁴⁵ For Bacon, like Descartes, knowledge emerges out of the confrontation between the intellect and the world: it comes as a result of the individual divesting themselves of those peripheral and distracting contingent features which cloud the ability of the mind to see the world clearly, and to reveal the truth which is manifest in the world. 'Like Socrates,' Popper said, Bacon suggests that 'we must, by purifying our intellects, prepare our souls to face the eternal light of essences or natures . . . Only after our souls have been cleansed in this way may we begin the work of spelling out diligently the open book of Nature, the manifest truth.'⁴⁶ Importantly, then, the process of revealing the truth in the world is a process of divesting ourselves of those distractions which might interfere with our search for the *essence* of things. Reason, uncluttered by contingent and arbitrary distractions, is capable of penetrating the essence of things such that their true natures might be known. For Bacon and Descartes then, just as it was for Aristotle and Socrates, the pursuit of knowledge is the search for the essential nature of things in themselves.⁴⁷

Popper therefore argued that the optimism at the heart of the rationalist tradition was embodied in three principal claims: (a) that the pursuit of knowledge requires one to divest oneself of all those contingent 'conjectures and guesses and prejudices' which serve only to cloud one's reason, (b) that it is at least partly the pursuit of the essential nature of the thing we are studying; and (c) that

⁴⁴ Popper, 'On the Sources of Knowledge and Ignorance', *Conjectures and Refutations*, p. 19.

⁴⁵ Popper, 'On the Sources of Knowledge and Ignorance', *Conjectures and Refutations*, p. 19.

⁴⁶ Popper, 'On the Sources of Knowledge and Ignorance', *Conjectures and Refutations*, p. 19.

⁴⁷ K. Popper, 'On the Sources of Knowledge and Ignorance', *Conjectures and Refutations; The Open Society and its Enemies*, Vol. 2: *Hegel and Marx*, esp. chap 11; *The Logic of Scientific Discovery*.

truth, for these rationalists, is manifest: it lies out in the world for us to discover, guided by the light of reason.

The enduring influence of this optimistic strain in rationalism, and the strongly empiricist assumptions that it embodied, is notable in philosophy and other areas of knowledge too, Popper thought. As a theory about the character of human knowledge, and an explanation of the way in which our knowledge of the world *grows*, it is most obviously at work in the traditional conception of science, and the scientific method. According to this view, science is an inductive process: it proceeds by the inference of *general* scientific laws, governing a range of behaviours and properties, from *specific* observations of *specific* events or behaviours by specific materials or elements under controlled conditions. On this view, scientific *theories* are thus inferred from *facts* about the world, derived from the repeated observation of specific phenomena, and hence, scientific knowledge begins in *observations* which in turn give rise to *theories* which aim at *universality* or *generality*. The more generally applicable a theory is – the more it can explain – the better it is.⁴⁸

This conception of science is widely shared by philosophers of science and by the vast majority of scientists themselves who, in adopting it, see themselves as belonging to a tradition of scientific practice common to such great thinkers as Copernicus, Galileo, Kepler, and Isaac Newton. For its defenders, as for Bacon and Descartes, knowledge emerges as a result of surveying the world by the light of reason alone, uncluttered by any potentially distracting or unpredictable influences. The pursuit of truth begins in observation of *the world*, not in some theory or some tradition or custom. Theories are inferred from empirical observation, not the other way around. Hence, the true basis of knowledge in the world is not a particular set of ideas or theories embodied in some individual or collective point of view, but the world itself, observed and observable by unfettered reason. Hence, the search for scientific truth is, on this account, understood as a process of divesting oneself of all particularities, anticipations, and contingencies in order that one might reveal the manifest truth. The rationalism of Descartes and Bacon, as exemplified in science, is

⁴⁸ Popper, *The Logic of Scientific Discovery*, pp. 248-281.

therefore 'optimistic' in the sense that it suggests that reason alone, operating in a context detached from all particularity, is capable of producing laws so certain and unshakeable that they are capable of verifying particular claims as true (once and for all), and even *predicting* future events.

The epistemological optimism characteristic of rationalism has also had a profound effect on the development of the analytic tradition of philosophy, which Popper thought was characterised by, among other things, the pivotal tension between subjective and objective knowledge; that is, 'the problem of understanding the world – including ourselves, and our knowledge, as part of the world.'⁴⁹ The answer, among the broad majority of analytic philosophers, has been to sharpen and isolate the qualities and content of reason, in order to establish some distance between it and the world in which it operates. The rise of formal logic within analytic philosophy, exemplified in the work of thinkers like Frege and Russell, for example, was arguably premised upon the idea that in order to tackle philosophical questions, one had to first clear away all the obfuscation and ambiguities provided by everyday language, and one's contingent desires and attachments.⁵⁰ Philosophical questions could only be answered via a philosophical language which had been cleansed of the various confusions arising out of the kind of language that actual people in the world use to describe their lives and their everyday experience. Again, therefore, we see in the adoption of formal logic a desire among many analytic philosophers to isolate the operation of reason from the world in which it is exercised by bracketing off all those aspects of human experience which serve to cloud the intellect, and, hence, the pursuit of knowledge.

Similarly, and most obviously, we find the desire to isolate reason from the wider world of experience and custom in the logical positivism that had begun to establish itself in the Vienna in which Popper lived and developed his ideas on epistemology, and which for many represents the

⁴⁹ K. Popper, *The Logic of Scientific Discovery*, p. xviii.

⁵⁰ Gottlob Frege, *The Foundations of Arithmetic: The Logical-Mathematical Investigation of the Concept of Number* (1884) (London, 1980); Bertrand Russell, *Principia Mathematica*, 3 vols. (Cambridge, 1910-1913).

quintessential expression of analytic philosophy.⁵¹ The central claim shared by the logical positivists of the Vienna Circle like Moritz Schlick, Otto Neurath, Rudolph Carnap, and A.J. Ayer, of course, was that the methods of science should be applied to philosophy.⁵² Drawing on the early philosophy of Wittgenstein, the logical positivists asserted that 'the truth value, or semantic meaning, of any proposition consists in the method of its verification, so that if no facts could show a given proposition to be true or false, then that proposition must be meaningless or tautological.' In doing so, the logical positivists invoked a strong distinction between the analytic and synthetic, 'conceived as contrasting types of knowledge with different forms of justification.' A synthetic statement was one which could be proven true or false by verification against empirical facts. An analytic statement could be proven true or false 'from definitions . . . from formal logic.'⁵³ Claims about the world which were neither verifiable by empirical facts nor by the laws of formal logic were thus considered meaningless. The verification principle coupled with the analytic/synthetic distinction thus provided the logical positivists with a criterion by which to judge the meaning or meaningfulness of all statements which aspired to contribute to our knowledge of the world. Those which passed the test were considered meaningful, and those which did not were not. The verification principle thus became, for the logical positivists, the criterion of demarcation between physics and metaphysics. This assertion, that philosophical claims should either be *analytically* true in and of themselves or *verifiable* by observation and experience, served to limit the scope of philosophical inquiry to those subjects which fit within these demanding strictures, effectively constraining the possibility of pursuing knowledge in such areas of philosophy as ethics, politics, aesthetics, and theology. Claims to philosophical knowledge in these areas could not be said to be analytically true in and of themselves, nor could they be judged true or false by an appeal to observed reality. Hence, they were considered meaningless metaphysics.

⁵¹ M. Bevir, *The Logic of the History of Ideas* (1999) (Cambridge, 2002), p. 4. Bevir, it should be noted, does not share this view.

⁵² See P. Parvin, *Karl Popper* (London, 2010).

⁵³ M. Bevir, *The Logic of the History of Ideas*, p. 4. See also, A. J. Ayer, *Truth, Language, and Logic* (1936) (London, 1971); R. Carnap (1928) *The Logical Structure of the World and Pseudoproblems in Philosophy* (Peru, IL, 2003); L. Wittgenstein, *Tractatus Logico-Philosophicus* (1921) (London, 1981).

Now, as we have already mentioned, Popper agreed with important elements of logical positivism. We have suggested that Popper was highly sympathetic to the idea that philosophy would benefit from the kind of rigor evident in the conduct of the physical sciences. In *Unended Quest*, Popper admitted to feeling 'very much at one with the Vienna Circle' which he described as 'an admirable institution.'⁵⁴ Its members adopted the 'attitude of the Enlightenment,' in foregrounding the role of reason and critique, and in that sense they were, for Popper, at least on the right side of the fence in the debate between subjectivists and rationalists, and the authority of reason over custom and tradition. But Popper was not a logical positivist, despite often being mistaken for one.⁵⁵ There were several reasons for this. The first was Popper's antipathy toward Wittgenstein, whose belief that philosophy could only address itself to 'puzzles' and not 'problems' represented precisely the kind of complacency among philosophers that he loathed.⁵⁶ The second was precisely the fact that logical positivism embodied the same epistemological optimism shared by Bacon and Descartes. Popper was a natural ally of the logical positivists in the sense that his sympathies, like theirs, lay in the rationalist tradition. Their error, however, was that they bought into the optimistic philosophy of the likes of Bacon and Descartes, and hence, sought to apply the wrong methods to the wrong questions. Their aim was to demarcate physics from metaphysics in order to present the latter as meaningless, and not the appropriate province of philosophy. Furthermore, they drew upon the traditional inductive model of science in order to work out what counted as a viable subject of philosophical inquiry and what did not.

The problem for Popper, however, was that in adopting the traditional methods of the physical sciences, the logical positivists were incapable of contributing to knowledge. The reason for this, Popper suggested, was that the traditional inductive model of science (and epistemological optimism more specifically) was incoherent, as it was rooted in the basic assumption that *theories*

⁵⁴ K. Popper, *Unended Quest*, pp. 99-100.

⁵⁵ K. Popper, *Unended Quest*, p. 99; See also, K. Popper 'Replies to my Critics', *The Library of Living Philosophers: Volume 14*, Book 2 (La Salle, Ill, 1974), pp. 961-1197, esp. 963-976.

⁵⁶ See e.g. K. Popper, *The Logic of Scientific Discovery*, pp. xviii-xxvi; *Unended Quest*; *The Open Society and its Enemies*, 2 vols.; 'Science: Conjectures and Refutations', *Conjectures and Refutations*, esp. pp. 52-54; 'The Nature of Philosophical Problems and Their Roots in Science' (1952), *Conjectures and Refutations*, pp. 87-129; 'The Demarcation Between Metaphysics and Science' (1955), *Conjectures and Refutations*, pp. 341-394; M. Hachon, *Karl Popper: The Formative Years*; J. Shearmur, *The Political Thought of Karl Popper*.

(or generalisable scientific laws) could be *inferred inductively* from observed phenomena, or *facts*. Popper rejected this claim, arguing that it rested upon a logical and philosophical impossibility: that the 'truth of . . . [a] theory could be logically derived from the truth of certain observation-statements.'⁵⁷ Popper argued, on the contrary, that '[n]o rule can ever guarantee that a generalization inferred from true observations, however often repeated, is true.'⁵⁸ In doing so, Popper invoked the *problem of induction* outlined by Hume in his *Enquiry into Human Understanding*: that no matter how many times an event or behaviour has been observed in the past, we cannot say that it will definitely or necessarily occur again in the same way, or at all, in the future.⁵⁹ The problem of induction – and hence, the problem for the traditional understanding of science for logical positivism and for the rationalist tradition more generally – was that there are no good philosophical grounds for assuming that theories or generalisable laws can be inferred from observed phenomena, no matter how confident we are that we have identified trends in the behaviour of these phenomena. Consequently, the inductive scientific method is incapable of doing that which scientists and the logical positivists require of it, namely, the extrapolation of generalisable laws of nature from observations about the world, which are resilient enough to *verify* the truth or falsity of other theories, and to *predict* future events.⁶⁰

This presented Popper with a problem. Whilst being sympathetic to the broad aims of logical positivism, and hence to the rationalist/analytic tradition, and whilst being committed to the need for greater clarity in philosophical inquiry, Popper could not embrace an epistemological commitment to inductive science because the problem of induction necessarily undermined any such model. Furthermore, he argued, the problem of induction did not merely represent a problem for logical positivism, but for the tradition of Enlightenment rationalism in general. For it suggested that the scientific method, which so seduced the thinkers associated with the Enlightenment and which went on to shape the development of analytic philosophy, was incoherent and mistaken, and incapable of explaining the growth of knowledge or contributing to it. The question Popper sought to address, therefore, was whether it was possible to remain

⁵⁷ Popper, *Conjectures and Refutations*, p. 251.

⁵⁸ Popper, *Conjectures and Refutations*, p. 71.

⁵⁹ David Hume, *Enquiry into Human Understanding* (1748) (Oxford, 2008).

⁶⁰ Popper, *The Logic of Scientific Discovery*, esp. pp. 1-7 and 55-56.

committed to the ideals of Enlightenment rationalism embodied in the analytic tradition while rejecting the inductive model of science characteristic of these ideals. That is, did the incoherence of the traditional scientific model inevitably spell the end of rationalism, and of the analytic tradition more generally, leaving room only for subjectivism and irrationalism?

2. Critical Rationalism, Deduction, and the Growth of Knowledge.

Popper thought not, although his response remains controversial. Popper's disentangling of rationalism from the problem of induction required nothing less than the reconception of rationalism and science themselves and, hence, the rejection of logical positivism, the verification principle, and the analytic/synthetic distinction. Science should not be understood as an *inductive* process aimed at the *verification* of theories, he argued, but a *deductive* process aimed at the *falsification* of theories. The problem of induction rules out the idea that scientific theories can be proven to be *true* by observed phenomena, but it does not rule out the idea that they can prove theories to be *false*. Truth and certainty are thus distinct, and reason, though capable of producing objective (but not certain) knowledge, is fallible. Given this, science should therefore aim at establishing what we know to be *untrue* rather than what is *true*.

Consequently, for Popper, science should not be understood as a process of inferring general theories from specific observations, but rather as a process *falsifying* those theories which already exist, and proposing new ones in their place. Science does not move from facts to theories. Rather, it begins in the statement of theories which invite falsification by others. Scientists should therefore not aim to prove new or existing theories true. Rather, they should aim to reveal their *falsity*: they should use all the tools they have at their disposal to eliminate *error* in those theories which already exist.

Popper's inversion of the scientific method from an inductive to a deductive process has several important philosophical and epistemological implications. *Firstly*, because scientific theories cannot be proven to be true, they must forever remain conjectural or hypothetical (at least, until

they are falsified, at which time they are abandoned). In order to contribute to knowledge, therefore, scientific theories must be framed in such a way as to invite falsification. Popper argued that those theories which do not admit the possibility of falsification, like, for example, Marxism and Freudian psychoanalysis, and those mystifying theories propounded by the critical theorists of the Frankfurt School, cannot contribute to knowledge.⁶¹

Secondly, science, for Popper, is primarily concerned with the identification and resolution of *problems* in the world. Scientists identify problems and then propose theoretical solutions to these problems which they invite others to falsify. If they cannot be falsified, then they continue to stand as candidates for truth. If they *can* be falsified, then they are abandoned. However, unlike defenders of the traditional view, Popper held that the refutation of a theory represents a positive and genuine contribution to knowledge. It is important to know what is *not* true, in order to leave standing only those theories which may possibly be true.⁶²

Thirdly, and relatedly, science is anti-essentialist. The point of science is to identify and resolve problems, not to define the essential nature of things. The 'true', or certain, nature of things in the world cannot be known once and for all, because reason cannot provide this knowledge. Reason is fallible. Hence, the search for ultimate or foundational essences or certain truths is futile, and merely gets in the way of the real business of science, which is the conjecture and refutation of theoretical solutions to problems.

Fourthly, science should not seek to filter out those anticipations and guesses and elements of lived experience which shape our understanding of the world. Rather, it should begin in a critical engagement with these theories and experiences. 'Science must begin . . . neither with the collection of observations, nor with the invention of experiments,' Popper argued, 'but with the critical discussion of myths.'⁶³ Science therefore begins in theories and, hence, represents the search for truth and understanding by individuals who are trying to impose order on the world by

⁶¹ Popper, 'Science: Conjectures and Refutations' (1957) *Conjectures and Refutations*, pp. 44-48.

⁶² K. Popper, *The Logic of Scientific Discovery*.

⁶³ Popper, 'Science: Conjectures and Refutations', *Conjectures and Refutations*, p 66.

using all the tools they have at their disposal to distinguish error from truth, or potential truth. Hence, the growth of scientific knowledge is not a clean or linear process. It is messy and complicated. It is a trial and error process in which ideas and theories are pitted against one another in a contest to decide which might represent a candidate for truth and which might not. The history of science, 'like the history of all human ideas,' Popper argued, 'is a history of irresponsible dreams, of obstinacy, and of error.'⁶⁴ Our knowledge of the world grows as a result of our coming together to work out what can and cannot be true given what we already know about the world, in a spirit of mutual respect and rational dialogue. The engine of scientific discovery is thus *criticism*: the growth of knowledge requires the adoption of a *critical rationalist* perspective with regard to existing theories and problems. By coming together in a public debate about the relative merits or deficiencies of certain theories in a spirit of mutual respect, we are able to weed out those theories which cannot be true and test the resilience of those theories by which, until we are given a reason not to, we live our lives by. Science is thus a *public* endeavour and, furthermore, its publicity renders it *objective*: objectivity does not spring from the isolation of the scientist from external influences and experiences, Popper thought, but from the fact that he or she is required to justify and explain his or her theories to others. Publicity brings rigor, not distraction.⁶⁵

Such, in bare outline, is Popper's conception of science, and, hence, his explanation of the growth of knowledge not just in the realms of the physical and natural sciences, but in *all realms of human thought and endeavour*. In providing an alternative conception of science which was rooted in deductive as opposed to inductive reasoning, and which therefore rejected the view – central to the traditional conception – that scientists should be primarily concerned to establish verifiable, general laws of nature from specific facts and observations, Popper reconceived the rationalist tradition in a way that preserved the virtues of intellectual responsibility, rigor, and clarity, but which circumvented the problem of induction. This *critical* rationalism shared the logical positivists' commitment to scientific rigor and reason, and shared too their rejection of

⁶⁴ Popper, 'Truth, Rationality, and the Growth of Knowledge', *Conjectures and Refutations*, p. 293.

⁶⁵ Popper, *Poverty of Historicism*, pp. 141-148.

subjectivism. Furthermore, it rejected the idea – increasingly dominant in the analytic tradition - that the growth of knowledge emerges from a process of extracting oneself from the world and examining it from a plateau of unfettered and abstract reason. In suggesting that the growth of knowledge begins in myths, theories, and conjectures, Popper provided an alternative conception of rationalism grounded in an understanding of reason which was neither entirely objective or subjective in character, but which could provide objective knowledge only within a context of subjective myths and customs. Popper was thus an ‘admirer of tradition’ in a very particular sense.⁶⁶ He suggested that it was possible for reason to yield universally valid conclusions but argued that this process of reasoning operates within a context of tradition, myth, and custom. Myths, traditions, and customs represent theoretical conjectures concerning the nature of the world and of individual human beings and hence, they represent the raw materials upon which reason operates. Myths and traditions are therefore not hindrances to the pursuit of knowledge which must be put aside (as the epistemological optimists thought) or ignored (as the logical positivists thought), rather they provide the very subject matter of scientific and other forms of inquiry, and the materials from which knowledge is forged.

For Popper, then, reasoning about the natural and physical world begins in the identification of problems in the world, and proceeds via the proposal and refutation of theoretical solutions to these problems. He also believed that the pursuit of knowledge in any other area follows the same rules. Hence, he thought that the growth of knowledge occurs according to the same logic in all disciplines and in all areas. Hence, for example, he argued for a ‘unity of method’ among social and natural scientists.⁶⁷ Popper therefore provided not merely a theory of science, or of scientific method; he provided an epistemology which he thought explained the growth of knowledge in all areas of human life and experience, and which therefore transcended the artificial boundaries erected between disciplines by academics. Everyone engaged in the pursuit of knowledge, no matter what their subject matter, should adopt a critical rationalist perspective. The pursuit of truth is a process which is rooted in the world of lived experience and history. Hence, the logical positivists’ desire to distinguish the discipline of science from other disciplines

⁶⁶ K. Popper, ‘The Myth of the Framework’, *Conjectures and Refutations*, p. 34.

⁶⁷ K. Popper, *The Poverty of Historicism*, esp. pp. 120-131.

was folly, and had the consequence of casting aside all those theories (from the realms of politics, ethics, religion, history, and elsewhere) from which knowledge may be gained.

Popper therefore identified himself with, and helped shape, a tradition of rationalist philosophy which took history and tradition seriously, but which rejected them as ultimate sources of truth or authority. In doing so, Popper collapsed the traditional dichotomy between analytic rationalism on the one hand, and subjectivist irrationalism or traditionalism on the other. In reconceiving the growth of knowledge as emerging out of a deductive process of criticising and evaluating claims in the context of myths, traditions, and customs, Popper reinvented rationalism in such a way as to make it compatible with the subjectivist concern for the importance of custom and tradition. He preserved the Enlightenment commitment to reason and critique, and fused it with the anti-rationalist concern for embeddedness and particularity. What Popper thought he had provided, therefore, was a 'rational theory of tradition' in which critical rationalism itself was understood as a tradition, with roots lying as much in the ideas of Enlightenment *philosophes* as it did in the work of those subjectivists and traditionalists who had been generally understood as in opposition to these ideas.⁶⁸

3. Truth and Politics.

Popper's critical rationalism can arguably be seen as part of a wider movement within the analytic tradition away from those categories which had come to define it, for example, the emphasis on induction and verification, and the traditional distinctions between synthetic and analytic knowledge, subjective and objective knowledge, observation and theory, and fact and value. Hence, it can arguably be seen as part of a move within twentieth century European and American philosophy away from the analytic toward what some have called the post-analytic.⁶⁹ For example, Popper's rejection of verification, his collapsing of the distinction between analytic and synthetic knowledge, and his claim that *objective* knowledge arises out of a critical

⁶⁸ K. Popper, 'Towards a Rational Theory of Tradition' (1949), *Conjectures and Refutations*, pp. 161-182.

⁶⁹ J. Rajchman & C. West, *Post-Analytical Philosophy* (New York, 1985); M. Bevir, *The Logic of the History of Ideas*.

engagement with *subjective* myths and customs, complemented the work of other philosophers who rejected the traditional inductive and verificationist approaches offered by the logical positivists but who, like Popper, were nevertheless sympathetic to the idea that claims to truth could be subject to evaluation and critique. Such thinkers included W.V.O. Quine, who emphasised the situated nature of those definitions we use to verify claims as true or false, as well as Donald Davidson, Wilfred Sellars, and Hilary Putnam who, in their own ways, sought to deconstruct the traditional tropes and definitions that had come to characterise the analytic tradition.⁷⁰ Later thinkers like Thomas Kuhn, whose emphasis on explanatory ‘frameworks’ in science challenged key assumptions at the heart of logical positivism, and Richard Rorty further problematized these definitions, provoking a reconfiguration of the analytic tradition in which truth itself, and its pursuit, was displaced.⁷¹

However, Popper’s distinction between truth and certainty distinguished him from pragmatists like Rorty. The fact that certain truth was unattainable did not mean, for Popper, that philosophers should give up the search for *truth*. It simply meant that they should give up the search for *certainty*. Popper’s critical rationalism held that it was possible to pursue truth in circumstances of epistemological uncertainty as long as one is clear as to what reason can and cannot provide: given the fallibility of reason the search for truth should be understood as a process of trial and error conjecture and refutation rather than an optimistic search for irrefutable foundations or first principles verifiable by an appeal to bare reason dislocated from the context of myths and traditions in which this process takes place.

Popper’s reconfiguration of the rationalist/analytic tradition therefore had profound implications for epistemology and philosophical inquiry. However, it also had important implications for the way

⁷⁰ See e.g. W.V.O. Quine, ‘Two Dogmas of Empiricism’, *The Philosophical Review* 60 (1951), pp. 20-43; *Word and Object* (Cambridge, MA, 1960); *The Web of Belief* (New York, 1970); D. Davidson, *Truth, Language, and History* (New York, 2005); H. Putnam, ‘After Empiricism’ (1980), *Realism with a Human Face* (Cambridge, MA, 1990), pp. 43-53; W. Sellars, *Empiricism and the Philosophy of Mind* (1956) (Cambridge, MA, 1997).

⁷¹ T. Kuhn, *The Structure of Scientific Revolutions* (Chicago, 1962); R. Rorty, *Philosophy and the Mirror of Nature* (Princeton, 1979); *Consequences of Pragmatism* (Minneapolis, 1982); *Contingency, Irony, and Solidarity* (Cambridge, 1989); W. Egginton & M. Sandbothe, *The Pragmatic Turn in Philosophy: Contemporary Engagement Between Analytic and Continental Thought* (Albany, 2004).

we gain knowledge of society and politics, and hence, for our understanding of the role and responsibilities of social and political institutions.⁷² Popper's epistemology underwrote a profound anti-radicalism and anti-utopianism. It suggested that the principal role of the social scientist was not, as the historicists argued, to reveal the social and historical forces at work in the development of society, or to investigate the cultural, historical, and traditional bonds which determined the character of any particular society or its members; rather it was to identify social and political problems, to propose theoretical solutions to these problems, and to engage in rational dialogue with others from all fields of intellectual endeavour to falsify those theories which currently exist.⁷³ Overarching conditions of epistemological uncertainty meant that social scientists should avoid making long-term prophecies about the future development of society, and the fallibility of reason meant that they should also avoid trying to define society from the ground up. Prophecy, holism, and essentialism should be replaced with short-term predictions and solutions, and individualism. Hence, radicalism should be replaced with gradualism, revolution with piecemeal social reform.⁷⁴

The fallibility of reason and the problem of induction together render utopianism, prophecy, and political radicalism redundant, irresponsible, and dangerous, Popper thought. Consequently, his epistemology stood opposed to the holism and radicalism of the Frankfurt School and the Marxists, the totalitarianism of the Fascists and Communists, and those other thinkers and leaders who sought to collapse the study of society into theoretical history. It also stood in opposition to the radicalism of the French revolutionaries who shared with other utopian thinkers the arrogant notion that it was possible for one individual or group of individuals to dream up an ideal and functioning society and then to impose it on everyone by sweeping aside all that

⁷² P. Catton & G. MacDonald, *Karl Popper: Critical Appraisals* (London, 2004); I. C. Jarvie & S. Pralong, *Popper's Open Society After 50 Years: The Continuing Relevance of Karl Popper* (London, 1999); I. C. Jarvie, K. Milford, & D. Miller, *Karl Popper: A Centenary Assessment* (Aldershot, 2006); B. Magee, *Karl Popper* (London, 1973); J. Shearmur, *The Political Thought of Karl Popper*.

⁷³ K. Popper, *The Poverty of Historicism*, esp. part IV. 'Prediction and Prophecy in the Social Sciences' (1959), *Conjectures and Refutations*, pp. 452-466.

⁷⁴ K. Popper, *The Poverty of Historicism*, esp. part III; *The Open Society and its Enemies*, Vols 1 & 2; 'Prediction and Prophecy in the Social Sciences', *Conjectures and Refutations*.

preceded it.⁷⁵ Furthermore, it placed him in opposition to the kind of philosophy exemplified by John Rawls – which has come to dominate Anglo-American political thought - who argued that it was possible to define an ideal society, and to answer the question ‘what is justice?’, by requiring interlocutors in this debate to put aside all those contingent aspects of themselves which might get in the way of revealing the first principles of justice. Although Popper did not engage directly with Rawls or later Rawlsian philosophers, it is reasonable to assume that he would have rejected this approach for embodying both essentialism and a Baconian/Cartesian epistemological optimism about the capacity of unfettered reason to reveal the true or essential nature of justice or anything else.⁷⁶

Popper’s rejection of the infallibility of reason did not only bring him closer to those within the analytic tradition who sought to reconceive important assumptions within that tradition, therefore. It also brought him within the intellectual orbit of those political and social theorists who also rejected epistemological optimism. That is to say, Popper’s critical rationalism – when applied to social and political questions – went some way in reconciling traditional rationalist commitments to reason and critique with new and controversial commitments to tradition and the fallibility of reason that were common to thinkers more associated with an anti-rationalist approach to social and political issues, like Edmund Burke and Friedrich von Hayek. For all their differences, what these thinkers, along with others like Herbert Mandeville, Adam Smith, Michael Oakeschott and, of course, Hume, agreed on was that the fallibility of reason, and the rejection of what Popper called epistemological optimism, necessitated a rejection of political radicalism and utopianism.⁷⁷

⁷⁵ K. Popper, ‘Towards a Rational Theory of Tradition’, *Conjectures and Refutations*, p. 162; ‘The History of Our Time: An Optimist’s View’ (1956) *Conjectures and Refutations*, pp. 489-505, p. 503.

⁷⁶ J. Rawls, *Collected Papers* (Cambridge, MA, 1999); *A Theory of Justice* (1971) (Oxford, 1999); *Justice as Fairness: A Re-Statement* (Cambridge, MA, 2001). See also, e.g. B. Barry, *Theories of Justice: A Treatise on Social Justice, Vol. 1* (Berkeley, 1989); *Justice as Impartiality: A Treatise on Social Justice, Vol. 2* (Oxford, 1995); R. Dworkin, ‘What is Equality? Part One: Equality of Welfare’, *Philosophy and Public Affairs* 10/3 (1981), pp. 185-246; ‘What is Equality? Part Two: Equality of Resources’, *Philosophy and Public Affairs* 10/4 (1981), pp. 283-345; *A Matter of Principle* (Cambridge, MA, 1985); *Sovereign Virtue: The Theory and Practice of Equality* (Cambridge, MA, 2000).

⁷⁷ E. Burke, *Reflections on the Revolution in France* (1790) (Stanford, 2001); F. A. Hayek, *The Road to Serfdom* (London, 1944) and *The Constitution of Liberty* (London, 1960); M. Oakeschott, *Rationalism in Politics and Other Essays* (London, 1962); D. Hume, *Essay Concerning Human Understanding*; H. Mandeville, *The Fable of the Bees* (1714) (Indianapolis, 1988); A. Smith, *The*

Reason alone cannot provide the blue-print for an ideal society because no individual or group can foresee all the possible implications and ramifications of their proposals.⁷⁸

Furthermore, the fallibility of reason renders incoherent consequentialist or teleological conceptions of morality and politics. The good cannot be known with certainty, and neither can the long-term consequences of those reforms or decisions aimed at achieving it. In such a climate of epistemological uncertainty, the 'main task of the theoretical social sciences' is not to prophesise the long term consequences of actions and decisions, but rather to 'trace the unintended social repercussions of intentional human actions.'⁷⁹ Hence, teleology and consequentialism are necessarily replaced with a 'negative utilitarianism' in which the short term, measurable consequences of limited reforms to existing institutions, policies or practices might be judged on the grounds of how much harm they avoid rather than how much good they bring about.⁸⁰

Consequently, Popper's reconfiguration of rationalism in the light of epistemological uncertainty and the fallibility of reason placed him alongside thinkers like Burke and Hayek in arguing that social and political reform should be conducted slowly, in a piecemeal fashion, with the aim of avoiding social evils, rather than in a radical and holistic one, in pursuit of social goods. Reform should not be seen in idealistic terms, or as arising out of abstract theorising about ideal societies, or be conceived as the pursuit of utopian ideals, precisely because reason cannot furnish would-be reformers with the certainty that they would need in order to justify their actions. Hayek, Burke, Oakeschott and Popper thus stood united against the claims made in favour of holism and radicalism by the likes of the critical theorists, Marxists, and Hegelians, arguing that social and political reform should be understood as a gradual process of evaluating what works, and what has worked in the past, and identifying weaknesses in existing institutions in order that

Theory of the Moral Sentiments (1789) (Cambridge, 2002). See also A. Gamble, *Hayek: The Iron Cage of Liberty* and P. Parvin, *Karl Popper*.

⁷⁸ A. Gamble, *Hayek: The Iron Cage of Liberty* (Cambridge, 1996).

⁷⁹ K. Popper, 'Prediction and Prophecy in the Social Sciences', *Conjectures and Refutations*, p. 460.

⁸⁰ See e.g. K. Popper, 'Prediction and Prophecy in the Social Sciences', *Conjectures and Refutations*, p. 465; 'Utopia and Violence', *Conjectures and Refutations*, pp. 485-486.

they might be reformed in a context of all the accumulated knowledge that currently exists at any particular time.⁸¹

Popper's reconfiguration of the epistemological foundations of the rationalist tradition in response to the dilemma posed by the problem of induction therefore produced a normative conception of society and politics which cut across traditional ideological lines. It provided defenders of the free market with a further critique of social and economic planning, while arming socialists and social democrats with an epistemological justification for the alleviation of poverty and the oppression of the economically weak by the economically strong. It gave rise to a society which was, in many ways, quintessentially liberal but which was also characterised by a traditionally conservative commitment to gradualism, anti-utopianism, and piece-meal social reform over radicalism, utopianism, and holism. It sought to apply the rigor characteristic of the physical sciences to social and political questions, but stood opposed to the naïve positivism of thinkers like Comte who sought to apply the traditional methods of inductive science to the study of society, and the scientism of those thinkers who sought to apply the inductive method into all areas of intellectual inquiry.⁸² Popper's epistemology thus rendered elements of his political philosophy hospitable to libertarians, conservatives, and the New Right, as well as many socialists and social democrats. Moreover, his claim that political authority emerges from debate and agreement among rational, free, and equal individuals brings him within the democratic tradition, while his limited conception

⁸¹ Popper disagreed with Burke and Hayek on a range of issues, including Burke's defence of political elitism, and Hayek's belief that epistemological uncertainty undermined all forms of planning and state intervention in social and economic matters. *Contra* Hayek, Popper was very critical of social and economic inequalities produced by *laissez-faire* economics, and argued in *The Open Society* for the state funding of education and other basic services. Popper was also deeply concerned about poverty, an issue which he believed received insufficient attention in both the work of Burke and Hayek. Nevertheless, Popper shared with these two thinkers the basic epistemological commitment to a conception of reason as embedded in, and operating upon, theories, myths, and narratives about the nature of the world, its problems, and their possible solutions. For more on the specific differences between Hayek, Burke, and Popper, see e.g. J. Shearmur, *The Political Thought of Karl Popper*; M. Hacohen, *Karl Popper: The Formative Years*; A. Gamble, *Hayek: The Iron Cage of Liberty*; and P. Parvin, *Karl Popper*.

⁸² A. Comte, *A General View of Positivism* (1865) (Cambridge, 2009); A. Comte, *Early Political Writings* (Cambridge, 1998).

of what democratic institutions should do (and the dangers of public opinion) raise questions about his commitment to democracy.⁸³

Popper's ideas about the role and purposes of the social and political sciences, as well as his claims regarding the character and responsibilities of social and political institutions, can – like his wider epistemological views – be traced back to the same claims about intellectual responsibility, clarity of expression, and the assumed wisdom of experts that shaped his wider thoughts about intellectual inquiry and the growth of knowledge, with which I began this article. Just as one should be sceptical of those philosophers or scientists who profess to know the truth with such certainty as to render redundant any need for critique or debate, or who articulate their ideas in ways designed to confuse or obfuscate, so, Popper thought, one should be sceptical of those political leaders or activists who claim to know what the ideal society should look like, and how it might be achieved, and who articulate their proposals in ways which are not transparent. Such claims are characterised by precisely the same arrogance and complacency that Popper loathed in philosophy or anywhere else, as it suggested that leaders or theorists might be justified in dismissing the expressed wishes of the political community in the interests of pursuing that utopian ideal that only they could define or understand.⁸⁴ This was, after all, Popper's central criticism of the historicists: Plato, Hegel, and Marx, in their own ways, furnished political leaders with the philosophical means to justify the violation of individual freedom and dignity in the pursuit of an ideal society that only they could see. Historicism in effect freed leaders from the burden of justification and replaced it with hierarchy, elitism, and the idea that the people should assume that their leaders are acting in their best interests, even if the evidence seems overwhelmingly to point to the contrary. *Contra* the historicists, Popper believed that the only defensible political goals were those which could withstand widespread rational scrutiny under conditions of epistemological uncertainty and, hence, which were framed as falsifiable conjectures rather than certain truths. Thus, politics and society should be structured in such a way as to make possible a widespread critical engagement with social and political issues among the political community,

⁸³ K. Popper, 'On the Theory of Democracy' (1987), *All Life is Problem Solving*, pp. 93-98; M. Hachon, *Karl Popper: The Formative Years*.

⁸⁴ See e.g. K. Popper, *The Open Society and its Enemies*, Vols 1 & 2; *The Poverty of Historicism*.

and social and political institutions should only concern themselves with resolving those problems which have been identified through rational discourse, by means which have themselves remained resilient to critique.

4. Conclusion.

Popper's contribution to modern political philosophy, and to epistemology in particular, had profound and enduring implications for rationalist philosophy, for the analytic tradition, for social and political thought, and the study of the society and politics. Popper's achievement was to reconstruct a tradition premised on reason and objective knowledge in the face of the problem of induction. It was to show the ways in which the rationalist commitment to reason, critique, and objectivity might be coherently held given the fallibility of reason, and the limits on the efficacy of inductive reasoning to contribute to the growth of knowledge in the world. Driven by an enduring antipathy toward experts, obfuscation, and intellectual arrogance traceable back to his early experiences in interwar Vienna, Popper reconstructed the rationalist tradition in a way that rendered it more hospitable to anti-rationalist critics, and gave rise to a conception of social and political life premised upon rational debate, free speech, and piecemeal social reform aimed at alleviating social, economic, and political problems identified through a process of debate characterised by the norms of critical rationalism. Popper's political thought thus represented a defence of liberal democracy, reason, and the ideals of Enlightenment rationalism against those who sought to replace them with some form of historicism, subjectivism, or irrationalism, but it was also a defence of the power of reason to produce knowledge in a world in which certainty was impossible and traditional dichotomies such as those between objective and subjective, and analytic and synthetic, were increasingly problematic.

Acknowledgements. The author would like to thank Mark Bevir, Duncan Bell, and two anonymous reviewers for their help in improving and clarifying the points made in this article.