



Akademie věd České republiky

Teze disertace
k získání vědeckého titulu "doktor věd"
ve skupině věd sociálních a humanitních

Reason and Scepticism: Hume and Popper

Komise pro obhajoby doktorských disertací v oboru
filosofie

Jméno uchazeče **Zuzana Parusniková**

Pracoviště uchazeče
Filosofický ústav AV ČR, v.v.i.

Místo a datum **Praha, 19. 12. 2018**

INTRODUCTION

Scepticism is the essence of philosophy. The original meaning of the Greek word *skeptestai* – to look, to view – implies the act of rational inquiry into the nature of things. Instead of taking at face value the given truths based on myth or religion, *philosophy makes us wonder*; look around anew and seek rational explanations of the structure of this world and the Cosmos, of our place within it and our abilities to acquire knowledge. Naturally, as it progressed philosophy branched out into many areas and specific disciplines; yet the wonder in which scepticism and reason team up remains at the root of philosophizing.

In the narrower sense – and in the standard usage today – scepticism stands for *an attitude of doubt*. It is a logical consequence of the state of wonder that doubts often concern those rational faculties which themselves gave birth to philosophy. After all, the Greek word *thaumazein* (to wonder) means both opening eyes wide and plunging into dark, after all things, including our mind, require new grounding. The scope and severity of doubting differs in various sceptical movements and at different times, sometimes claiming that our fallibility may be corrected by using proper methods of reasoning, but sometimes admitting to fatal limitations if not impotence of our reason. These two sceptical stances are discussed in this dissertation as represented by Karl Raimund Popper and David Hume.

Popper challenged all forms of traditional rationalism in which reason is expected to provide good reasons (rational justification) for knowledge claims; as a solution he proposed *a vision of reason defined by its negative, falsificationist powers*. Yet this destructive role of reason carries an *optimistic epistemological*

message; through advancing bold conjectures and finding errors we discover new problems to be solved and thus make knowledge grow. Here, I argue, lies the greatest potential of Popper's philosophy, leading to a revolutionary conception of rationality. I defend Popper against most of his critics who regard his falsificationism as too extreme, and introduce him as an original and provocative philosopher whose philosophical message has great relevance today.

Hume came to a sceptical conclusion regarding our inductive reasoning but in contrast to Popper he resigned on the possibility of providing our knowledge with a rational warrant. Hume challenged the dominant claim of early modern philosophy that philosophy should draw as close to science as possible and *consistently held radical scepticism concerning the rational foundations of science*. In this point I argue against the dominant trends in the contemporary Hume scholarship which assume that finding some science-friendly interpretation of Hume (e.g. naturalism, mitigated scepticism, realism) would somehow increase his philosophical value.

Popper was directly influenced by Hume's critique of induction, specifically by his argument that it is not possible to justify by demonstrative reasoning the principle of induction, termed the uniformity principle by Hume. This problem was very much alive in the thought of the Vienna Circle with which Popper interacted; however, Popper solved the problem differently to them, by claiming that induction is not only logically flawed but does not exist even as a way of acquiring knowledge. Through this critical confrontation with Hume Popper developed his unique conception of rationality based on the hypothetico-deductive model of cognition and the imperative of criticism.

However, Hume and Popper were two philosophers of distinct eras and dealt with very different problems. Interpreting their scepticisms through these historical contexts and within the intellectual frameworks of their times is the main principle of my methodological approach.

This dissertation consists of a short monograph on Hume's scepticism and a selection of papers dealing with critical rationalism and with Popper's treatment of Hume.

DAVID HUME, SCEPTIC

I identify three constituents in Hume's epistemology: (1) the emerging (early)modern paradigm in philosophy that placed the autonomy of the individual and his cognitive abilities in the centre of its discourse, (2) empiricism restricting the rational warrant to knowledge derived from experience, and (3) the Pyrrhonian legacy in which the weakness of reason is calmly accepted. I introduce Hume as a fascinating figure standing between the ancients and the moderns, taking each position to its logical conclusion.

The early-modern (Cartesian) paradigm gave rise to a new kind of scepticism, involving doubt not just about the adequacy of our knowledge but about the very existence of a world independent of the self. The impossibility of reaching beyond one's mind is reflected in Hume's phenomenalism. His empiricism led to scepticism about the rational foundations of knowledge since we cannot, according to Hume's copy principle, rationally legitimate our spontaneous cognitive acts. Pyrrhonism enabled Hume to leave us perplexed yet able not to worry about epistemological scepticism. Within his science of man, philosophy should rather focus on other, more rewarding areas of inquiry – on the common world, morals, society – and become a guide to a balanced, happy life.

The Cartesian Roots of Hume's Scepticism

The Cartesian strand of Hume's scepticism unfolds from the revolutionary change in seventeenth century philosophy that can be called a *turn to the subject*; the old metaphysical framework in which

everything, including our mind, was structured by a universal order was replaced by the independent human mind that broke free from any higher authority and became an autonomous and constructive cognitive agent. Descartes was the first to advance this idea and caused a paradigmatic change in philosophy that opened the modern era. I argue that Hume developed his philosophy on this ground; the fact that Hume turns to experience while Descartes turns to pure intellectual insight testifies to a secondary level of differences.

The shift from metaphysics to the autonomous cognizing mind can be best explained by contrasting some central themes in metaphysics with the position of modern philosophy. I formulate two main assumptions that were formative in the metaphysical tradition. Firstly, a metaphysical grounding united all being in a meaningful ontological structure, comprising of heavens, nature and man. The scientific and philosophical revolution that began to take off from Renaissance can be described roughly as bringing forth the destruction of the Cosmos, by undermining the conception of the world as a finite, closed, and hierarchically ordered whole.

Secondly, in metaphysics man, due to his reason and knowledge, was a privileged being capable of the highest degree of participation in the divine. Yet *cognition was integrated in the all-encompassing order and was subordinate to it*. Cognition was an ontologically anchored process integrated within the structure of Being. Descartes broke this millennia-long tradition in a simple announcement: “My plan has never gone further (*sic!*) than an attempt to reform my own thoughts and rebuild them *on ground that is altogether my own.*” [italics mine] (Descartes 1979, 18).

The autonomy of the individual mind gave man unprecedented privileges. At the same time, it led to the *imprisonment of the subject in itself*. The world in its all-encompassing unity was lost and *man lost the sense of belonging to the universe*. That was the price to pay for the newly acquired intellectual freedom. “For Hume, the human being is no longer the

darling, even the fallen darling, of the cosmic order, the pinnacle of a rational plan executed by a benevolent deity who built us in his own image” (Blackburn 2008, 7). Our consciousness is a boundary that cannot be transcended, and the mere existence of something external to my mind lies beyond the scope of any rationally justifiable argumentation. As described by Husserl, “empiricist skepticism brings to light what was already present in the Cartesian fundamental investigation ... namely, that all knowledge of the world, the pre-scientific as well as the scientific, is an enormous enigma” (Husserl 1970, 89-90).

The Cartesian turn thus leads to phenomenism. The question “what (if anything) is beyond our mind? – and how can it be established?” bothered philosophers then and has ever since. Most philosophers then were also scientists and they simply could not give up on reality – but not so Hume. The unique feature of Hume’s approach can be identified as the *suspension of judgement on matters of existence* since this issue is beyond experience. Hume observes that our beliefs are unaffected by this scepticism but are also beyond the jurisdiction of reason. Hume defines this position clearly: “Let us chace our imagination to the heavens or to the utmost limits of the universe; we never really advance a step beyond ourselves, nor can we conceive any kind of existence, but those perceptions, which have appeared in that narrow compass. This is the universe of our imagination” (T 67-8). Have our perceptions their source in real objects, in our minds or in some divine being? In Hume’s view none of these possibilities can be confirmed or rejected and therefore the suspension of judgement remains the only truly sceptical conclusion – and one that was very close to Hume’s sentiment, strongly influenced by neo-Pyrrhonism (as discussed in section 3).

From this position I criticize the so-called New Hume interpretation according to which Hume is a sceptic only in epistemology while remaining an ontological realist (see Wright 1983, Strawson 1989, Read and Richman 2007). First of all, this

interpretation – as for instance Millican (2007a, b) demonstrates – does not fit into the philosophical context of Hume’s writings from the *Treatise* and the *Abstract* to the *Enquiry*. But my main claim is that ontological inquiries are explicitly made redundant by Hume since nothing can be asserted about any reality external to the mind; if we proceed from the position of consciousness *epistemology is also a limiting horizon of our inquiries*.

The Empiricist Roots of Hume’s Scepticism

Empiricism is considered the keystone of Hume’s philosophy. It proceeds from the rule that all knowledge must be based on observation and experience. Hume analyzes how we, by various steps of connecting and combining impressions, derive ideas – impressions and ideas delineate the mental world that conforms to the rationally legitimate methodology and keeps our understanding away from metaphysics. This empiricist account of knowledge is encapsulated in the *copy principle*: “*all our simple ideas in their first appearance are deriv’d from simple impressions, which are correspondent to them, and which they exactly represent*” (T 4).

I provide an overview of Hume’s empiricism, including his theory of associations, the conception of causation, the role of memory and imagination and the formation belief. In my approach I *emphasize the sceptical implications of Hume’s empiricism for epistemology* and reject those interpretations that either reduce Hume’s theory of knowledge to a mere description of how the mind works (e.g. Garrett) or weaken his scepticism by an appeal to some kind of naturalized epistemology (e.g. Millican). Although Hume explicitly set out to undertake an anatomy of human understanding Garrett underestimates the normative impact of the copy principle. Millican’s claim that our belief (in causation) is self-justifying does not appreciate the context of Hume’s time in which epistemology was supposed to prescribe rational standards for science. This was what Hume could not deliver.

To sum up, Hume's scepticism unfolds from the *contradiction between the norm of empiricism (defined in the copy principle) and the real processes in our thinking*. These processes transcend the narrow, straightjacketing scope delineated by Hume's empiricism. In the perspective of rational reflection "no objects have any discoverable connexion together, and all the inferences, which we can draw from one to another, are founded merely on our experience of their constant and regular conjunction" (E 111-12). Yet we naturally and *involuntarily* break the empiricist rules and we unite these broken appearances by the *fiction* of a necessary connection, either causal or substantive.

Even a philosopher who is aware of this dilemma cannot resist the belief in such fictions. Apart from philosophizing in a closet and being then haunted by scepticism, a philosopher also finds himself "absolutely and necessarily determin'd to live, and talk, and act like other people in the common affairs of life" (T 269), and then all doubts vanish like a puff of smoke. Being both a sceptical philosopher and a common man he is trapped in an unenviable position, torn between belief and reason and being perplexed (and traumatized) by this contradiction. Hume's recipe how to solve this traumatizing contradiction is to yield to the current of nature. I do not appreciate – today frequent – attempts to reconcile reason and belief by focusing on the question of the justification of belief in Hume's epistemology; to me, Hume was not even interested in this question, due to his Pyrrhonian views, as discussed in the next section.

I analyze Hume's project to become the 'Newton of human sciences', with his aim of using the experimental method and bringing a similar contribution to mankind in his science of man. Hume did not know much about Newton's science but applied the maxim of experimental method, famously defined by Newton as "hypotheses non fingo".¹ Hume considers the effect of associations

¹ As Newton spells out in the *General Scholium*: "For whatever is not deduc'd from the phaenomena, is to be called an hypothesis; and

equivalent to the force of attraction (i.e. gravity) in Newton's physics; both are the 'cement' of the universe, of the physical and mental realms respectively. I draw attention to the underestimated fact that despite Newton's own claims an interpenetration existed at a fundamental level between his theological and natural works (see Dobbs 2002, Morisson 2011, Snobelen 2001).² Hume, on the other hand, remained true to the Newtonian experimental method, free of any metaphysical assumptions (still present in the works of his empiricist predecessors like Gassendi, Huet and even Locke); both Hume's scepticism and its remedy in naturalism lie entirely within the human province.

I further analyze the nature of Kant's awakening from his 'dogmatic slumber' provoked, as Kant explicitly says, by Hume's psychological account of causation. Kant looked for a sounder (*apriori*) foundation that could account for the universal necessity entailed in our thinking and knowledge. Yet Kant's awakening contains one deeper aspect. Hume made Kant realize that our mind works within its own mental province – not needing any objective reality for its operations,³ but instead *constructing this objectivity through our cognitive acts*. This new direction of philosophy was completed in Kant's Copernican turn, announcing the Enlightenment spirit of man's active mastering of Nature through reason. Hume's claim that "our perceptions are our only objects" (T 213) opens a

hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy particular propositions are inferr'd from the phænomena, and afterwards render'd general by induction" (Newton 1934, 547).

² Until recently, the extent of Newton's writings on alchemy and theology was not well known because these writing were dispersed around the world; after Newton's death both Cambridge University and the British Library declined to take them on the grounds that Newton's reputation as a scientist would be stained. Thanks to the Newton Project these manuscripts are now being traced, scanned and categorized.

³ Kant postulates the existence of the thing in itself only in the second edition of the *Critique of Pure Reason*.

new era of philosophical inquiry focusing on the constitution of objectivity *by the subject*.

The Pyrrhonian roots of Hume's Scepticism

The Pyrrhonian link in Hume's philosophy is analyzed within a broader context of the revival of Pyrrhonism in Western Europe (from the 16th century) and its *fundamental influence on the philosophical developments in the (early) modern era*. For this reason, I dedicate three chapters to this problem. One opens the Pyrrhonian theme and outlines the rebirth of Pyrrhonism in France, initiated mainly by Michele Montaigne and spreading quickly in the intellectual world. The second focuses on Hume's epistemological scepticism and his typically Pyrrhonian solution to it. In the third chapter Hume's conception of the nature and role of true philosophy is discussed and presented as heavily influenced by Pyrrhonism.

I pay a great deal of attention to Pyrrhonism. I discovered this world through the works of Richard Popkin who initiated wide-ranging historical and philosophical research into the revival and the impact of Pyrrhonism in Europe. It was eye-opening for me and I have been developing this theme in various directions. I go beyond Popkin's view in several respects. First, the Pyrrhonian stress on appearances as the limiting case of knowledge was a great inspiration for modern philosophy; modern philosophy, however, went further by questioning the independent existence of the object as the cause of these appearances. Second, due to the Pyrrhonian influence Hume calmly accepted the fact that reason has severe limitations; thus he stood against the optimistic mainstream of early modern epistemology. Third, Pyrrhonism affected Hume's search for *true* philosophy, characterized by its soothing effects on the mind.

(a) The Rebirth of Pyrrhonism

The intellectual environment at the turn of the seventeenth century was affected by a deepening crisis in the Aristotelian-scholastic world view. The revival of ancient Pyrrhonism⁴ was a fuse that intensified the crisis. It was a fascinating time. The old was shaking but the new ground was not yet prepared and had no plausible theoretical expression at its disposal. After centuries of relative calm, philosophers found themselves on the threshold of a new era and searched for a new philosophical grounding. Pyrrhonism accelerated both the decline of scholastics and the formation of the new position based on the confident self. Even though scepticism was a destructive method, based on subversive arguments concerning the reliability of our senses and reason, these arguments had their source in man's own ability to think.

I show that Michel Montaigne, especially in his *Apology for Raymond Sebond*, brought scepticism to the forefront of philosophical interest. He discusses the arguments of Sextus and Diogenes, Cicero and Erasmus – and compares them with various anti-sceptical positions (Plutarch, Lucretius and Epicurus). Montaigne then examines the variety of sceptical doubts concerning both the senses and rational judgment, undermining thus the traditional scholastic arguments for God's existence. Montaigne advances a general definition of scepticism: “[the sceptics] use their reason for inquiry and debate but never make choices or decisions. If you can picture an endless confession of ignorance, or a power of judgment that never, never inclines to one side or the other, then you can conceive what Pyrrhonism is” (1993, 72).

Yet there are two sides to the newly-born scepticism. *Scepticism was a double-edged sword that had both a liberating and*

⁴ This revival was facilitated by two Latin translations of the work of Sextus Empiricus. The first translation of the *Pyrrhoniae Hypotyposes* (*Outlines of Pyrrhonism*) by Henri Estienne appeared in 1562, followed by the translation of *Adversus Mathematicos* (*Against the Mathematicians*) in 1569 by Gentian Hervet.

a paralyzing effect on epistemology. On the one hand, it helped to free man from the traditional authority of scholastic doctrine; scepticism thus *boosted his self-confidence* and helped to release his intellectual potential. On the other hand, it *undermined man's self-confidence* by illustrating the unreliability of his cognitive faculties, his senses and his rational judgment alike. That clashed with the newly-acquired confidence and hunger for knowledge.

I discuss various strategies used to tackle the negative aspects of scepticism, including the rationalist (Descartes) and the early empiricist (a group around Gassendi, and later Huet). I focus more on the empiricist position that brings us closer to Hume. I view this position as logically inconsistent but pragmatic in order to save the status of science. The French empiricists reduced the scope of legitimate inquiry to appearances given by the senses, advocated caution in generalizations, replaced the ideal of truth with probability, and promoted modesty as a general attitude. I call this position *mitigated scepticism* and refute the popular thesis that mitigated scepticism is Hume's solution to the pitfalls of excessive Pyrrhonian scepticism.

I also look at another peculiar feature of this period in philosophical and scientific discourse. Despite the fact that the new epistemology tried to establish itself as rid of the old metaphysical baggage, it was still open to influences inherited from the Renaissance (or older); to the mysteries and secrets of Nature, pulsing with energies, spirits, vapours and mysterious powers that were not directly observable, such as aether, sometimes called the fifth element or the quintessence of the universe. Both the metaphysical and the organic perceptions of nature were still present; for instance, the works of Galilei, Gassendi, Boyle and Newton were unique not only for their scientific discoveries but for their strange *mix of rational, sceptical, theological and alchemical influences*. The legacy of the past, including old myths, religious and esoteric elements, generated an atmosphere in which natural scientists still

believed in an underlying unity of all being, a unity not demonstrable by empirical science.

(b) Hume the Pyrrhonian

Hume followed the radical line of scepticism that runs from Montaigne and Bayle, and not the meagre mitigated scepticism of the French empiricists, though the common ground in empiricism may tempt us draw such a link.

Hume was directly influenced by Bayle who claims: “our reason is only suitable for making everything perplexing and for raising doubts about everything. No sooner has it built something than it provides means for destroying it (Bayle 1991, 42, Bunel, rem. E); and in a similar tone, our reason “is a principle of destruction and not of edification. It is only proper of raising doubts, and for turning things on all sides in order to make dispute endless ... It is only fit to make man aware of his own blindness and weakness” (Bayle 1991, 151, Manicheans, rem. D). This influence explains why Hume so easily accepted the weakness of reason as a predicament we have to live with.

It is difficult, though, to put up with such radical scepticism in life, and the new sceptics – whether radical or mitigated – were looking for some positive anchor. Apart from Hume, all found refuge in fideism. Religion was an integral part of their intellectual and cultural outlook and fideism – not based on reason but an irrational faith – could not be undermined by rational arguments; fideism was thus immune to scepticism. Hume was the first philosopher who got rid of the religious burden and placed the positive anchor of our lives in nature. Most interpretations that do not water down the power of Hume’s scepticism postulate an irreconcilable conflict between reason and nature. To some extent, the tension between these two powers exists. But, following Popkin, I suggest that *Hume’s principal novelty consists in allotting intense reflection and instinctive beliefs their own domains*. Hume daringly asserted a

disparity that involves a division of labour between reason and nature in place and time.

Hume discovered an inconsistency in the sceptical claim that *we must both stick to appearances and simultaneously suspend belief in them*. Sextus says about Pyrrhonists: “They say what is apparent to themselves and report their own feelings without holding opinions, affirming nothing about external objects” (Annas & Barnes 2000, 7; I, 15.). In a nutshell, the ancient Pyrrhonians ask us to exorcise any flavour of belief from all naturally emerging convictions and to practice maximum detachment from life, corresponding to the high value of *bios theoretikos* in ancient culture.⁵

Hume noticed that this attitude is psychologically intolerable and, instead of bringing us tranquility, would lead to a state of agony; Pyrrho can claim that we cannot assert that honey is sweet but only that it sweetens in a perceptual way, but we cannot get rid of the overwhelming belief that it is *really* sweet; despite having no basis for our opinions we still hold them strongly owing to our psychological and biological constitution. This is what in Popkin’s view Hume means by the Pyrrhonian excessive scepticism – its annexation of belief. Apart from the agony of mind, Hume says, it would also destroy life: “all discourse, all action would immediately cease; and men remain in a total lethargy, till the necessities of nature, unsatisfied, put an end to their miserable existence” (E 160).

Hume corrects this mistake. He encourages the sceptic to apply radical doubts in reflection, and to assent to natural beliefs as any other man at other times does. The trick to get away from the psychological torture, inherent in the ancient Pyrrhonism, is to separate the two areas and grant each of them its own full right. The clash between them is not threatening because we *do not inhabit*

⁵ I discuss at length whether the Pyrrhonians really wanted to suspend beliefs (see Burnyeat 1993, Frede 1998, Barnes 1998, Hankinson 1995) and arrive at an affirmative answer.

these areas simultaneously. In this move, Hume distances himself from the old Pyrrhonists (“those sceptics”) and calls them a “fantastical sect”. According to Popkin, the *separation* of these two areas is the core of Hume’s mitigated scepticism; it thus does not involve any kind of taming or subduing of scepticism, but a mere acknowledgement that a sceptic “will doubt when he must and believe when he must” – and this is all that mitigated scepticism amounts to” (Popkin 1980, 132).

This separation enables us to achieve peace of mind; as mentioned before, Hume, as a true Pyrrhonian, considers this the main goal of philosophy. Yet he conceives of *ataraxia* somewhat differently from the old sceptics. The original connotations were tied to quietude of mind, to detachment from life, to indifference to excitement. Hume changed this ideal by placing it in the bustle of life. While the Pyrrhonists put an emphasis on the contemplative character of tranquility, Hume added a more frivolous flavour to it and emphasized elements of pleasure and joy.

Popkin terms Hume’s scepticism “mitigated scepticism” in a completely new sense – mitigation does not apply to epistemology but only to the fact that scepticism *does not collide with our natural (including our cognitive) inclinations* since they lead separate lives and play by different rules. I now think that it is not a fortunate term. I rather suggest that mitigated scepticism signals Hume’s *hasty retreat from the epistemological field* (see Baier 1991). This retreat was unsystematic but Hume was impatient to focus on common life in which reflection does not interfere. In common life and in society scepticism acquires a different, more agreeable role of balancing curiosity, modesty and a degree of doubt; a small tincture of Pyrrhonism is recommended to “abate the pride of the learned and remind them of the universal perplexity and confusion, which is inherent in human nature” (E 161). This conclusion brings us to Hume’s views on the role of philosophy, which also has some Pyrrhonian features.

(c) **Hume on the Role(s) of Philosophy**

For Hume, philosophy certainly falls from the ‘throne’ it used to enjoy traditionally, either in the era of metaphysics or in the (early) modern epistemological discourse. So it seems that Hume comes with a refreshing picture. He argues that true philosophy must have an understanding of and a sympathy toward human needs and feelings, aspirations and weaknesses. True philosophy carries out a cautious observation of human mind and life and its only normative function is negative, narrowing the domain of appropriate philosophical investigations to experience; Hume appeals to modesty as a crucial Pyrrhonian value. Linked to Pyrrhonism is another feature of true philosophy; it should not be too demanding, too strenuous for human mind. Hume is civil, close to ordinary people and their concerns, remaining down to earth – in contrast to the subtle, speculative philosophy, aspiring to heights where ‘the air is too fine breathe in, where it is above the winds and clouds of the atmosphere’ (Hume 2008, 107). For Hume, more so than for the old sceptics, philosophy should be entertaining as a conversation topic at a dinner table and should also be a pleasing activity for philosophers themselves. It is a very likeable picture, one is tempted to say.

However, there is one tricky question left in this likeable picture – *what, then, is philosophy about?* It does not have any unique domain and does not deliver any higher wisdom. As Hume repeats many times, “all the philosophy, therefore, in the world ... will never be able to carry us beyond the usual course of experience, or give us measures of conduct and behaviour different from those which are furnished by reflections on common life” (E 156). But then, should we not consider that true philosophy dissolves into the range of documentary social sciences – psychology, history, economics, political theory, morality? Of course, Hume can be considered a co-founder of these disciplines.

Although Hume's own work indicates that this is not the case, he paradoxically provokes such questions. On his account it seems that true philosophy adopts a natural belief of the vulgar, though only *after* it becomes aware of the findings of the sceptical argument. The extremely sceptical position, applied by philosophers when they are secluded from normal life and enclosed in a study is untenable, and philosophy reduced to reflection is false. True philosophers, being also human beings anchored in life, have to (and do so happily) accept "a share of this gross earthly mixture, as an ingredient, which they commonly stand much in need of" (T 272).

An even stronger degradation of philosophy appears in the *Essays* ('The Sceptic'); Hume first considers what philosophers might offer – maybe some particular views that would have otherwise escaped us, some guidance to help us to refine our temper, to be more modest and tolerant. This leads philosophy towards the moral and social domains. But Hume quickly adds: "if these views be natural and obvious, they could have occurred of themselves without the assistance of philosophy; if they be not natural, they never can have any influence on the affections" (Hume 2008, 106).

This anti-elitist and anti-intellectual thrust of Hume's philosophy is unparalleled among his contemporaries; Hume's ideal of a philosopher is "*lowly-wise*"; (Fogelin 1983, 410). But is then philosophy anything more than an informed, not too scholarly and always entertaining conversation? This is a provocative question and one that is not asked by Hume scholars. I propose that the answer should be sought in Hume's moral and political philosophy, and in the always present appeal to Pyrrhonian humbleness. Also, Hume encourages us to get involved in all areas of the common world and social life, drawing on certain ideas of Cicero. On an individual level philosophy brings satisfaction and pleasure; on the social level, Hume is concerned about the happiness and prosperity of mankind, the achievement of which is made possible by our collective

involvement and mutual assistance in developing the virtues of benevolence and justice.

In conclusion, I present Hume as a philosopher who stands in two distinct areas. He is a consistent modern philosopher who got rid of all the metaphysical and religious baggage of the past. He accepted the logical implications of the (Cartesian) position of the subject as a limiting horizon of philosophy with phenomenism as its result. He is also a consistent Pyrrhonian, surprisingly so in the modern epistemologically and optimistically oriented discourse. He accepts the weakness of reason with remarkable ease and takes philosophy as a guide to a balanced, pleasant and joyful life.

KARL POPPER, SCEPTIC

I select from my work on critical rationalism several themes in which Popper displays his scepticism. I leave aside other topics, such as Popper's conception of the three worlds and his social philosophy.

Popper's position was formed in the progressive intellectual atmosphere in Vienna – termed *Spätaufklärung* – that developed before the First World War in opposition to various conservative, clerical and nationalist, tendencies (see Hacoen 2000, 69). Popper was influenced by the logical positivism of the Vienna Circle, especially the concern for science and the respect for logic, yet he criticized positivists on most philosophical issues; Neurath labelled him the “official opposition”. Most notably he rejected induction and phenomenism that formed the basis of logical positivism. He did not reject all metaphysics but showed that “good” metaphysics (e.g. atomism) could be an inspiration for science. He endorsed realism which for him may have been a metaphysical assumption but one that provided the best framework for the development of science. He

saw the scientific enterprise as more adventurous than the positivist arduous logical construction of sentences – according to Popper, scientific method consists in methods of testing and not of discovery. He put great emphasis on the dynamic, creative and process-oriented aspects of science. He denied that pure observation is possible since it is always theory- and problem-laden. Though most of these principles show Popper's opposition to both logical positivism and Hume, he was greatly inspired by Hume's critique of the logic of induction in forming them.

Induction

In his early work *The Logic of Scientific Discovery* (1935 in German, 1959 in English), Popper acknowledged that it is impossible to prove the truth of a universal statement since it transcends experience; his example of 'black ravens' has become notorious. This presents other problems: can empirical evidence provide some support for a universal statement like "all ravens are black"? Does a high number of positive cases (observed black ravens and no occurrence of ravens of a different colour) provide a rational justification to accept the initial hypothesis and ascribe to it a high degree of probability? Popper was surrounded by philosophers proposing probabilistic solutions aiming to legitimize inductive inferences. Many logical positivists (e.g. Reichenbach and Carnap) argued that it is not possible to attain either truth or falsity in knowledge; rather, scientific statements can only attain degrees of probability, the unattainable upper limit of which is truth.

Popper rejected this strategy and followed the radical sceptical line unfolding from the Pyrrhonian sceptics, Montaigne, Bayle and Hume. For example, Montaigne asks: "how can they [the Academics] bring themselves to yield to verisimilitude if they cannot recognize verity? How can they know there to be a resemblance to something the essence of which they do not know?", and answers,

along with Hume, that “[W]e judge entirely, or entirely not” (1993, 141).

Popper claimed that as for an empirical proof of the validity of inductive inferences, “to justify these we would have to assume an inductive principle of a higher order; and so on. Thus the attempt to base the principle of induction on experience breaks down, since it must lead to infinite regress” (Popper 1965, 29). He saw Hume as his ally in exposing the logical incoherence of inductive inferences. This verdict is also acknowledged by Russell; “[The] principle itself cannot, of course, without circularity, be inferred from observed uniformities, since it is required to justify any such inference” (Russell 1946, 699). However, Popper argues, it is possible for an empirical statement to be *refuted* by experience. Popper’s proposal is thus based on an *asymmetry* between verification (or confirmation) and falsification of empirical universal statements.

Popper further rejects the inductive account of learning and thus parts with both Hume and the logical positivists. Popper praises Hume for exposing the logical problem of induction, stressing that “we have no reason to draw any inference concerning any object beyond those of which we have had experience” (Hume 1981, 139). But according to Popper, Hume did not go far enough as to abandon psychologism. Popper criticizes Hume for not having considered the possibility that we do not acquire knowledge inductively, and claims that in fact “we never draw inductive inferences” (1956, 35). In sum, in Popper’s view *induction plays no role either in belief formation or knowledge acquisition*. Thus Popper concludes that Hume “buried the logical gems in the psychological mud” (1979, p. 89).

In this critique of Hume’s psychological approach to induction, Popper establishes his epistemological position by which knowledge does not start with observation but with conjectures that act as filters of observation. Conjectures embody certain expectations that we have about the world and navigate, like a searchlight, the focus and selection of observation – learning consists in bold

proposals and attempts to falsify them empirically. These expectations, Popper stresses, are not a result of inductive generalization, but are guesses imposed upon the world, often without any prior experience - “expectations may arise without, or before, any repetitions” (1979, 24). The breeding ground of conjectures are, broadly speaking, various unresolved problems and contradictions in existing knowledge, conceived of by Popper as the body of currently and provisionally accepted guesses. Thus Popper declared that induction is a myth, adding, with his typical audacity, that it is he himself who must admit responsibility for the death of logical positivism (1982, 88).

Popper’s self-proclaimed solution of both the logical and the psychological problems of induction gives him the impetus for spelling out *his own hypothetico-deductive model of knowledge and his unique, negative concept of reason, which is incompatible with justification*. Popper formulates a challenging philosophical theory that has caused many disputes, some of which are discussed below.

Ratio negativa

Popper’s conception of rationality is built on the *critique of justification*. Popper turns upside down the traditional belief that scientific theories must only be accepted if they are supported by evidence. As discussed in my *Ratio Negativa: The Popperian Challenge* (2009), Popper discards justification as irrational. For him, falsification is the only rational means of testing hypotheses, coinciding with error elimination as the only desirable approach to solving any problems, not just scientific ones. The imperative of falsification represents an exclusive partnership between criticism and reason. As Popper says, “deductive logic as the organon of criticism” (1985, 64), and, as Miller adds, “criticism is the lifeblood of reason” (Miller 1994, 67).

Popper's emphasis on criticism appeals to scientists; in fact, Popper is one of the few philosophers of science (alongside Thomas Kuhn, perhaps) who is known and respected by scientists. Popper corresponded with Einstein and collaborated with scientists like John Eccles, Peter Medawar and others. I suspect, however, that scientists do not fully realize the implications of Popper's radical falsificationism in which (a) positive evidence has no value whatsoever, and (b) theories gain no extra bonus if they survive the falsification tests. Let me look at these implications in more detail.

Justification is entirely without merit for Popper; apart from being irrational it does not stimulate the growth of knowledge. It is only when we turn from the *static* domain of establishing claims to the critical *process* of attempting to disprove claims that we can employ our invention, we can progress and discover new problems: in Popper's words, "the problem of giving positive justifying reasons" should be replaced by "the problem of *critically* discussing hypotheses" (1985, 22-3). Traditional rationalism has been, in Miller's words, "hooked on justification" and it is time that we "kick the habit" (1994, 49). Kicking the habit implies adopting the critical (or, if you like, the negative) function of reason and the recognition that "there is no question of proving or justifying or establishing anything" (1988, 29). Popper's conception of *ratio negativa* claims that only the total, radical ban of justification can save rationalism. Therefore, critical rationalism cannot be described merely as a promotion of criticism but as a new model of reason constituted by, and only by, the imperative of falsification. Inherent in this methodology is a *dissident approach* that consists in permanent (Trotskyite) rebellion against any limitations and whose radicalism must not be normatively compromised.

If a theory is not falsified it is, in Popper's terms, corroborated. But corroboration, in contrast to the confirmation used by logical positivists, does not in any way strengthen the theory, make it more probable or reliable. Corroboration is merely a

synonym for “not yet falsified” and corroborated theories only *retain their claim at the truth* with which they entered the arena of critical testing. This claim is not vindicated by positive empirical evidence or by the lack of negative evidence. Popper urges us to switch from the search for certainty to embracing uncertainty, yet without resigning on truth. This approach is applied also to basic statements (singular observational statements) that are the potential falsifiers of a theory.

Popper has been often accused of an inconsistency concerning the role of basic statements (e.g. “here is a white raven”) as potential falsifiers of a theory. Some critics argue that since basic statements contain universals (as Popper admits), they cannot be proved true and hence cannot falsify a theory. If an accepted observation statement contradicts a hypothesis, we are not justified in claiming that the hypothesis is false, only that either the hypothesis or the observation statement is false. But Popper himself admits this fact; as he says, basic statements cannot be proved true and so it is impossible that any theoretical system should ever be *conclusively* falsified. He claims that they are only ‘classified’ as true when no falsification is at sight (and they remain open to future potential falsification). Hence, even falsification *has a conjectural nature*. To repeat, Popper’s main message is to change our focus: to move our attention from establishing facts to trying to undermine them. The essence of the scientific method lies in *its manner of exposing to falsification, in every conceivable way, the system to be tested*.

Popper’s falsificationist extremism has provoked ardent disputes among philosophers of science. Many critics argue that scientific theories cannot be tested in the same way as statements in logic. Theories are clustered together, forming interconnected research programs or paradigms that resist the falsifying impact of a single piece of empirical counter-evidence; nor is radical falsification in such cases desirable. This dispute was opened up again by Lakatos (1968, 1970), followed further by the LSE group (Worrall, Zahar,

Watkins), and other philosophers of science (Musgrave, Gillies, Bartley, Agassi). Lakatos essentially argued for a modified version of Popperianism that incorporates a notion of inductive acceptability (1968, pp. 390-405), since in rational decision-making, the appraisal of the trustworthiness of theories is indispensable. Worrall takes this position to the extreme, claiming “the history of science shows that scientific progress is best made (perhaps only made) *not* by holding every assumption equally open to criticism ...” (Worrall 1995, 97).

These philosophers attempt to develop a philosophy of science that would avoid Popper’s shortcomings and preserve the best of both worlds: a critical conjectural rationality without his ‘fanatical’ radicalism. This combination was viewed as a more realistic and digestible ‘near-Popperian’ methodology. But that, I think, is the root of the trouble. Attempts at a sophisticated, mitigated, modified or otherwise diluted falsificationism devalue Popper’s main philosophical contribution. Popper’s philosophy must be extremist or it loses everything: in the case of a justificationist compromise, both uncertainty and criticism would simply become a phase in the cognitive process whose force can be negotiated. A mere critical ‘flavour’ in scientific method achieves the reverse - it rids Popper of all punch and transforms his challenging position into a trivial one. Moreover, under such rules the door to dogmatism remains wide open. Criticism can be just verbally postulated but in fact avoided whenever convenient.

This point comes to prominence in the dispute between Popper and Kuhn. According to Kuhn (1970), science proceeds by alternating normal phases, in which scientists accumulate knowledge and focus on puzzle-solving, and revolutionary phases, in which a certain paradigm is unable to deal with anomalies, and comes under critical attacks. Criticism is encouraged mostly in the second phase while in the first phase scientists must show their commitment to the leading paradigm. Thus in normal science, the dominant paradigm *should* be protected against criticism. For Kuhn, there are two sides

of research – one thrillingly creative and the other routinely tiresome, each of them legitimate in the respective phase.

Popper rejected Kuhn's account on the basis that Kuhn confuses a *description* of certain phases in the history of science with *methodological norms* for science. Kuhn's insights into the development of science may be fascinating, especially where he looks at sociological considerations like the politics and psychology of scientific communities and organizations. Popper, however, would say that the dynamics of the cognitive processes, fueled by falsification, is often obstructed by the way science is organized. For Popper, science only progresses through permanent criticism, by the effort to have science permanently in the revolutionary phase. Popper claims that "science is essentially critical ... and 'the normal' scientist, as Kuhn describes him, is a person one ought to be sorry for" (1970, 55 and 52). Popper's radical falsificationism should not be interpreted as a descriptive history or sociology of science. *His critical imperative is strictly normative.*

By uniting criticism and reason, Popper proposes a novel, non-authoritarian model of rationality. Popper's anti-justificationist strategy is visible also in the ideological context. Popper stresses the need for a norm by which merciless criticism that spares nothing won't be persecuted but welcomed. The political aspects of this theme are discussed in Popper's writings on the open society and historicism. I emphasize that both his philosophy of science and political theory rest on the same methodological principles.

The hypothetico-deductive model

Popper proposes a hypothetico-deductive model of knowledge, starting with conjectures and progressing through attempted refutations. This model contains several challenging features, as I argue in *Two Cheers for Karl Popper* (2004) and *Ratio Negativa: The Popperian Challenge* (2009). Especially in the first text I

emphasize Popper’s focus on the dynamic growth of knowledge enabled by his departure from the traditional ideal of certainty or the highest possible probability; as he says, “[t]he central problem of epistemology has always been and still is the problem of the growth of knowledge” (1959, 15). Popper emphasizes that the growth of knowledge requires an adventurous spirit, welcoming the high-risk nature of the cognitive business. According to him, all forms of justificationism obstruct this critical drive; if our main goal is that our hypotheses pass tests then unchallenging, banal, boring statements with low empirical content are favoured. Justification is a defensive attitude that suppresses intellectual conflicts, does not exploit the creative potential of erring, and effectively leads to dogmatism. Falsification, by contrast, encourages boldness since being wrong is not a failure but a victory – if it leads to discovering new and deeper problems.

Popper’s deductive model of the growth of knowledge can be sketched as follows (1979, 287):

$$\begin{aligned}
 & TT_a \rightarrow EE_a \rightarrow P_{2a} \\
 P_1 & \rightarrow TT_b \rightarrow EE_b \rightarrow P_{2b} \\
 & TT_n \rightarrow EE_n \rightarrow P_{2n}
 \end{aligned}$$

where P stands for a problem, TT for tentative solutions, and EE for error elimination. Cognition, then, starts with an objective problem, and proceeds from one conjecture to another by eliminating errors, enabling us to detect new problems and discover new areas of knowledge or, rather, new areas of ignorance. Popper believes that by this method of trial-error elimination our knowledge can get

gradually nearer to the truth and that there is objective progress in the evolution of knowledge.⁶

Popper applied this scheme to all areas of life. Solving problems and detecting mistakes in our tentative solutions is not just a theoretical business – all organisms constantly strive to solve survival problems and their tentative solutions may be various adaptation strategies made instinctively in order to remove the threats and to adjust their behaviour or, in long term, their genetic set-up to deal better with the challenges of reality. Popper's contribution to evolutionary epistemology and its linking to the biological evolution is widely acknowledged and I analyze it especially in my *Criticism and Dogmatism in Popper's Evolutionary Epistemology* (2011).

Though there are parallels between the two kinds of evolution there are also important differences. In human cognitive activity the phase of error-elimination is upgraded to an unprecedented status. In case of animals, errors result in physical injury or death. But humans have another option – to let theories die in their stead. The evolution of knowledge characterizing the evolution of the human species takes place in the world of objective ideas and we can delegate the survival struggle to the theoretical level. And since we do not have to fear for life we can actively pursue criticism and embrace its stimulating effects; that, according to Popper, is our biggest evolutionary advantage. As he says, “the difference between the amoeba and Einstein is that, although both make use of the method of trial and error-elimination, the amoeba dislikes erring while Einstein is intrigued by it: he consciously searches for his errors in the hope of learning by their discovery and elimination” (Popper 1979, p. 70).

⁶ This is described in Popper's conception of verisimilitude that was criticized and proved wrong by Miller and Tichý.

As much as I value Popper's evolutionary theory I raise certain criticism. It is one thing to assume that progress takes place in the evolution of knowledge (we are getting nearer to the truth), and another thing to import it into the process of evolution in Nature. Interpreting the actual course of the evolutionary process up to now as partially fulfilling this goal opens the door to the orthogenetic perspective on the growth of knowledge – a perspective that is incompatible with Darwinism in which biological evolution consists of random mutations resulting in accidental variations of life forms with no teleology involved. This would indicate an inconsistency in Popper's views undermining the Darwinian nature of his epistemology.

According to Popper, the hypothetico-deductive model solves problem of induction. All observation is already theory laden, determined by challenging theoretical problems in science and by pressing practical problems in life. We approach both the world of theories and the ordinary world with some expectations which, if not fulfilled, give rise to problems we need to solve – either to enrich knowledge or merely to survive. I raise some criticism against this solution. Even though our expectations are not inductively formed they still contain a *strong need for confirmation*, encouraging us to justify rather than falsify our beliefs. We simply *believe* that the greater the positive evidence, the more support (the higher the probability) there is for the general statement. In other words, we are natural-born justificationists and dogmatists. Moreover, our justificationist inclinations “sabotage” the power of criticism even though criticism is the main evolutionary advantage of the human species.

Popper does not appreciate that living in permanent uncertainty be traumatic. He assumes that by reformulating ‘belief-sentences’ in objective terms will overcome this difficulty and introduces the principle of transference that implies that what is true in logic is true in psychology. Accordingly, he restates Hume's

psychological problem of induction as follows: “If we look at a theory critically, from the point of view of sufficient evidence rather than from any pragmatic point of view, do we always have the feeling of complete assurance or certainty of its truth, even with respect to the best-tested theories, such as that the sun rises every day? I think that the answer here is: No” (1989, p. 26). Popper hopes that according to the principle of transference “we shall have to admit that the sun may not rise tomorrow over London after all” (1989, p. 26). Here, I think, Popper is wrong. There is a crucial difference between “*admitting*”, after rational consideration, and a “*feeling*” compelled by inborn instincts. It is just Popper’s wishful thinking that in the course of evolution reflection will strengthen at the cost of instincts; this expresses his affiliation to the modern ideal of the maturing of mankind, accompanied by the advance of reason.

Postmodernism

Popper’s philosophy contains ideas that are inspirational for the hottest philosophical disputes concerning modernity, reason and rationality. As is well known, these disputes were opened by the Frankfurt School after the shock caused by World War II. They were taken to another stage by Habermas and by the postmodern movement. I show that *Popper’s philosophy entails ideas that can be brought into this debate with considerable impact*. I develop this theme mostly in “Popper and Postmodernism. Similar Targets, Different Strategies” (2006).

The comparison between Popper and postmodernism may seem rather odd. They represent two completely different, even contradictory, philosophical positions. Popper belongs to the philosophical tradition that stems from the Enlightenment ideals, a tradition that endorses reason and seeks to set universal norms of rationality and thus provide philosophical foundations for science. Postmodernism, by contrast, undermines the privileged status of

reason, a status that reason has occupied in the Western world since the Greeks. However, I find an important overlap between these two philosophical positions in their rejection of foundationism.

I consider a link between Popper's rejection of *justification* claims of traditional epistemology and the postmodern rejection of the *legitimation* claims of logocentrism. Both these claims can be viewed as tools of *foundationism*. Popper's attack of foundationism has a narrower scope and is concerned predominantly with the justification of knowledge-claims in science. Foundationism targeted by postmodernism, and frequently termed 'logocentrism', represents a large group of legitimation strategies aimed at establishing a privileged status of certain cultural values, ethical norms, political goals and philosophical discourses. Most generally, postmodernism views logocentrism as an expression of the *centrality of reason culminating in the Enlightenment*, resulting from the *centering/structuring nature of reason* that has formed the whole Western tradition. Popper, I claim, represents an intriguing alternative to foundationism since he, in his conception of *ratio negativa*, proposes a model of reason that does not establish anything but does the reverse by destructing all knowledge claims. Popper can thus accept and endorse the *authority of reason* because he rejects the *authoritarian status of reason*. By his re-definition of reason, Popper denies the need to sabotage the authority of reason in the way that postmodernism does.

Postmodernism is an immensely diverse movement. Nonetheless, I suggest that we distinguish two distinctive strains in the postmodern attack on foundationism. The first strain adopts the view that language, the world and the history are fragmented into distinctive incommensurable language games, discourses or other paradigmatic units generating their own rules according to their specific foundational principles, with reason being the foundation of modernity; philosophers like Wittgenstein, Kuhn, Rorty, Lyotard and Foucault belong, in various degrees, to this strain. Logocentrism here

reflects the centrality of reason specifically in the modern period in which the Grand meta-narrative of the Enlightenment displays itself in certain privileged discourses, claiming to have *universal* authority. This authority is presented as founded on and thus legitimated by reason and usurps the right to diminish or disqualify “the other”, the discourses that lack the privileged status.

The second strain of postmodernism, represented by poststructuralism, poses a much more radical challenge to foundationism. Derrida argues that foundationism is the constitutive element of reason – reason always structures the world (language) around a center guaranteeing its stability and order. In this perspective, logocentrism expresses this defining feature of reason to search for foundations that could unlock the secret of the organizing principle behind all change and complexity, the matrix of being. In this interpretation, logocentrism expresses the desire to make Being present, to establish a firm center enabling us to identify here and now the true nature of the world.

Derrida analyses this process in language, specifically in written text. The center in the metaphysics of presence takes the form of an unchanging transcendental signified in which structures of meaning can be framed and through which the meaning of signs can be clearly identified within the process of signification. Thus we can bring the complexity of language - and thus the diversity of the world - to a common denominator and discover the truth (the essence) hidden in phenomena. The metaphysics of presence reveals Being as a structured totality that has a center from which it is ordered and can be understood; we are anchored.

By contrast, Derrida argues that presence is unattainable as there is always something missing from the sign and it is constituted not only within a network of differences but also by a trace of the absent. A signified forever leads to another signifier, and works with a never-ending delay (deferral) of meaning in time. Presence, truth, Derrida declares cannot be had, “... the structural impossibility of

limiting this network, of putting an edge on its weave, of tracing a margin that would not be a new mark” (Derrida 1981, 40). Presence, truth, always slips away and meaning is deferred *ad infinitum*. The deferral within the network of differences is expressed in Derrida’s famous term ‘*différance*’, the play of ‘hide-and-seek’ in an infinite labyrinth of traces of signs. Against the hopes of logocentrism, we are faced with the predicament of *absence*. The poststructuralist technique of deconstruction thus eliminates the transcendental signified as the center of language.

Poststructuralism expels philosophy from the foundationist home in which it has been comfortably settled. But the elimination of foundationism involves, in the poststructuralist view, the elimination of the normative ambitions of philosophy and the universal ambitions of reason. All philosophy can do is to gaze in wonderment at the diversity of discursive species, tell stories, kibitz, play with texts or symbols, undermine the authority of fixed meanings, “laugh at the solemnities of the origin” (Foucault 1984, p.79).

To sum up, Popper and Derrida have in common:

- 1) The description of the traditional epistemology / the metaphysics of Being as driven by the need for grounding.
- 2) The classification of the classical conception of reason, defined by this need for grounding (justification for Popper, the effort to make Being present for the postmodernists) as authoritarian and potentially oppressive.
- 3) The conclusion that the desired grounding cannot be had. Foundations are an illusion – an irrational instinct for Popper and the forever escaping transcendental signified for Derrida.

However, the way in which Popper and postmodernism answer the question “why cannot foundations be had?” reveals the fundamental difference between their respective philosophical positions. In a nutshell, Popper rejects justification because it is, in

his view, incompatible with rationality, whereas postmodernists reject the authority of reason.

Popper's conception of *ratio negativa* provides an alternative to be considered seriously. It discards foundationism without 'cutting off the branch Western philosophy is sitting on' - the philosophical heritage of Logos, reason. Popper regards reason as the foundation of our Western culture that should be cherished. The way critical rationalism gets rid of foundationism enables it not just to save but to boost rationality. The decision to opt for reason instead of an endless play of *différance* in which any firm (Archimedean) point of departure is forever absent is, for Popper, a moral choice. It demonstrates Popper's concern for human condition and the commitment to improve it. By developing and internalizing criticism in our thinking and acting we not only expel dogmatism that hinders the dynamic growth of knowledge, but can lessen political oppression and injustice.

It is in their political and social philosophy where Hume and Popper meet again. Despite the fact that they went in the opposite directions in their respective epistemological solutions to the problem of induction, they both stand against all types of authoritarianism and fanaticism in society. Hume criticized religious enthusiasm that, he claimed, feeds into oppressive forms of government. Popper targeted totalitarianism, based on the conviction that a privileged person or a class have knowledge of those laws which govern the future development of a society. This method leads to a dangerous dogmatic attachment to a blueprint for which countless sacrifices have been made. Hume's vision, though reflecting a different historical period, is close to the Popperian ideal of the open society. Both Popper and Hume rejected the euphoric strategies of sweeping revolutionary changes. And both supported such institutions that allow freedom of thought and encourage open discussion.

Resumé

Popper challenged all forms of traditional rationalism in which reason is expected to provide good reasons (rational justification) for knowledge claims; as a solution he proposed *a vision of reason defined by its negative, falsificationist powers*. Yet this destructive role of reason carries out an *optimistic epistemological message*; through advancing bold conjectures and finding errors we discover new problems to be solved and thus make knowledge grow.

Hume came to a sceptical account regarding our inductive reasoning, but in contrast to Popper he resigned on the possibility of providing our knowledge with a rational warrant. Hume challenged the dominant claim of early modern philosophy that philosophy should draw as close to science as possible and *consistently held radically sceptical position concerning the rational foundations of science*. Strongly influenced by Pyrrhonism he accepted the weakness of human reason and advocated modesty.

Popper was directly influenced by Hume's critique of induction, specifically by his arguments that it is not possible to justify by demonstrative reasoning the principle of induction, termed the uniformity principle by Hume. Popper claimed that induction is not only logically flawed but does not exist even as a way of acquiring knowledge. Through this critical confrontation with Hume Popper developed his unique conception of rationality based on the hypothetico-deductive model of cognition and the imperative of criticism.

My works in English dealing with various aspects of Hume's and Popper's writings (entries in bold are part of the dissertation)

Parusniková, Z. (2016): *David Hume, Sceptic*. Monograph. Springer, 126p.

Parusniková, Z. (2018): Popper and Hume: Two Great Sceptics. In *The Impact of Critical Rationalism: Expanding the Popperian Legacy through the Works of Ian Jarvie*. Editors Sassower, R.; Laor, N. Palgrave Macmillan, p. 207-225.

Parusniková, Z. (2017): *Horror Dogmatis*. In *Encouraging Openness. Essays for Joseph Agassi on the Occasion of His 90th Birthday*. Editors Bar-Am, N.; Gattei, S. Boston Studies in the Philosophy and History of Science. Springer Verlag, p. 27-39.

Parusniková, Z. (2017): Reason, Science, Criticism. Joseph Agassi Interviewed on his 90th Birthday by Zuzana Parusniková. *Organon F*, Vol. 24 No. 4, p. 526-545.

Parusniková, Z. (2016): The Devaluation of the Subject in Popper Theory of World 3. *Philosophy of the Social Sciences*, Volume 46, No. 3, 304-318.

Parusniková, Z. (2014): Hume's Scepticism Revisited. In *Philosophy*, Volume 89, Issue 04, p. 581-603.

Parusniková, Z. (2011): Criticism and Dogmatism in Popper's Evolutionary Epistemology. In *Knowledge, Value, Evolution*. London: College Publications. Editors Hříbek, T.; Hvorecký, J., p. 109-125.

Parusniková, Z. (2009): Introduction (with Robert S. Cohen). In

Rethinking Popper. Editors Zuzana Parusnikova and Robert S. Cohen. Boston Studies in the Philosophy of Science. Springer Verlag, p. 1-2.

Parusniková, Z. (2009): *Ratio negativa – The Popperian Challenge*. In *Rethinking Popper*. Editors Parusnikova, Z.; Cohen, R. S. Boston Studies in the Philosophy of Science. Springer Verlag, p. 31-47.

Parusniková, Z. (2008): Review Essay: *Out of Error: Further Essays on Critical Rationalism* by David Miller, *Philosophy*, Volume 83, Issue 01, January 2008, pp. 138-145.

Parusniková, Z. (2006): Popper and Postmodernism. Similar Targets, Different Strategies. *Learning for Democracy*, Vol. 2, No. 1, p. 7-30.

Parusniková, Z. (2004): Two Cheers for Karl Popper, in *Karl Popper: Critical Assessments of Leading Philosophers*. Editor O’Hear, A. London, Routledge, p. 79-99.

Parusniková, Z. (1993): Against the Spirit of Foundations: Postmodernism and David Hume. *Hume Studies*, Vol. XIX, No. 1, pp. 1-17.

Parusniková, Z. (1992): Is a Postmodern Philosophy of Science Possible? *Studies in History and Philosophy of Science*, Vol. 23, No. 1, pp. 21-37.

Parusniková, Z. (1990): Popper’s World 3 and Human Creativity, *International Studies in the Philosophy of Science*, Vol. 4, No. 3, pp. 263-269.

Parusniková, Z. (1990): Varieties of Scientific Realism – Metaphysics or Common Sense? *Acta Analytica*, No 6, pp. 163-172.

Bibliography used in the theses

- Agassi, J. 1975. *Science in flux*. Dordrecht/Boston: Reidel.
- Agassi, J., & Ian C. Jarvie (eds.) 1987. *Rationality: the critical view*. Dordrecht: Martinus Nijhoff.
- Annas, J. and J. Barnes (eds.) 2000. *Sextus Empiricus: Outlines of scepticism*. Cambridge: Cambridge University Press.
- Barnes, J. 1998. The beliefs of a Pyrrhonist. In ed. M. Burnyeat and M. Frede, 1998, 58-92.
- Bayle, P. 1991 [1702]. *Historical and critical dictionary. Selections*. Trans. and ed. R. Popkin. Indianapolis, Cambridge: Hackett.
- Blackburn, S. 2008. *Hume*. London: Granta Publications.
- Burnyeat, M., (ed.) 1983. *The skeptical tradition*. Berkeley, CA: University of California Press.
- Burnyeat, M. 1998. Can the sceptic live his scepticism? In ed. M. Burnyeat and M. Frede, 1998, 25–57.
- Burnyeat, M and M. Frede (eds.) 1998. *The Original Sceptics: A Controversy*. Indianapolis: Hackett Publishing Company.
- Derrida, Jacques. 1981. Transl. A. Bass. *Positions*. Chicago: The University of Chicago Press.
- Descartes, R. 1979 [1637]. *Discourse on the Method*. In *Descartes Philosophical Writings*. Translated and edited by E. Anscombe and P. Geach. Sunbury-on-Thames: Nelson University Paperbacks.
- Dobbs, B.J.T. 2002. *The Janus faces of genius: The role of alchemy in Newton's thoughts*. Cambridge: Cambridge University Press.
- Fogelin, R. 1983. The tendency of Hume's scepticism. In ed. M. Burnyeat, 1983, 397–412.
- Foucault, M. 1984. Nietzsche, Genealogy, History. In ed. P. Rabinow, *The Foucault Reader*, 76-101. New York: Pantheon Books.
- Garrett, D. 2004. A small tincture of Pyrrhonism. Scepticism and naturalism in Hume's science of man. In ed. W. Sinnott-Armstrong, 2004, 68-99.
- Garrett, D. 1997. *Cognition and commitment in Hume's philosophy*. Oxford: Oxford University Press.

- Gillies, D. 1993. *Philosophy of science in the twentieth century: four central themes*. Oxford: Blackwell.
- Hacohen, M. H. 2000. *Karl Popper. The Formative Years, 1902 – 1945*. Cambridge: Cambridge University Press.
- Hankinson, R. J. 1998. *The Sceptics*. London & New York: Routledge.
- Huet, P. D. 1725 [1723]. *A philosophical treatise concerning the weakness of human understanding*. London: Gysbert Dommer.
- Hume, D. 1981 [1739]. *A Treatise of Human Nature* L.A. Selby-Bigge (ed), revised by P.H. Nidditch. Oxford: Clarendon Press. Abbreviation **T** used in the text.
- Hume, D. 2005 [1748]. *An Enquiry Concerning Human Understanding*. L.A. Selby-Bigge (ed), revised by P.H. Nidditch Oxford: Clarendon Press. Abbreviation **E** used in the text.
- Hume, D. 2008. *Selected Essays*. Oxford: Oxford University Press.
- Husserl, E. 1970. *The crisis of european science and transcendental phenomenology*. Transl. Carr, D. Evanston: Northwestern University Press.
- Kuhn, T. S. 1970. Logic of Discovery or Psychology of Research? In Lakatos and Musgrave 1970.
- Lakatos, I. (ed). 1968. *The Problem of Inductive Logic*. Amsterdam: North-Holland Publishing Company.
- Lakatos, I. 1970. Falsification and the Methodology of Scientific Research Programmes. In Lakatos and Musgrave 1970.
- Lakatos, I. and A. Musgrave (eds). 1970 (1982). *Criticism and the Growth of Knowledge*. Cambridge: Cambridge University Press.
- Miller, David. 1994. *Critical Rationalism. A Restatement and Defence*. Chicago and La Salle: Open Court.
- Millican, P. 2007a. Against the ‘New Hume’. In eds. R. Read and K.A. Richman 2007, 211-253.
- Millican, P. 2007b. Humes old and new: four fashionable falsehoods, and one unfashionable truth. In *Proceedings of the Aristotelian Society Supplementary Volume LXXXI*, 163-199.
- Montaigne, M. 1993 [1580]. *An apology for Raymond Sebond*. Trans. M.A. Screech. London: Penguin.
- Morrison, T. 2011. *Isaac Newton’s Temple of Solomon and his reconstruction of sacred architecture*. Basel: Birkhäuser.

- Newton, I. 1934 [1713]. *Mathematical Principles of Natural Philosophy*. Trans. A. Motte, ed. F. Cajori, Berkeley: University of California Press.
- Popper, Karl R. 1959. *The Logic of Scientific Discovery*. New York: Harper and Row.
- Popper, Karl R. 1979. (First edition 1972) *Objective Knowledge*. Oxford: Clarendon Press.
- Popper, Karl R. 1985. (First edition 1963) *Conjectures and Refutations*. London and Henley: Routledge & Kegan Paul.
- Popper, Karl R. 1988. (First edition 1983) *Realism and the Aim of Science*. Ed. by W.W. Bartley III. London: Hutchinson.
- Read, R. and K.A. Richman, (eds). 2007. *The New Hume debate*. Revised edition. London and New York: Routledge.
- Russell, B. A.W. 1912. *The Problems of Philosophy*. New York: Henry Holt & comp., London: Williams and Norgate.
- Russell, B. A.W. 1946. *History of Western Philosophy*. London: George Allen & Unwin Ltd. Repaginated Classics edition 2004. Abingdon: Routledge.
- Sinnott-Armstrong, W. ed. 2004. *Pyrrhonian skepticism*. New York: Oxford University Press.
- Snobelen, S.D. 2001. 'God of gods, and Lord of lords': the theology of Isaac Newton's General Scholium to the Principia.
- Strawson, G. 1989. *The secret connexion: causation, realism, and David Hume*. Oxford: Oxford University Press.
- Watkins, John. 1984. *Science and Scepticism*. Princeton: Princeton University Press.
- Wright, J.P. 1983. *The sceptical realism of David Hume*. Manchester: Manchester University Press.