

Chapter 2

The Enlightenment: Truths Behind a Misleading Abstraction

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In trying to come to understand what ‘The Enlightenment’ means, enlightenment is not always readily forthcoming. Historians are prone to “periodize” history (mainly European history) using terms such as ‘The Renaissance’, ‘The Reformation’, ‘The Age of Reason’, ‘The Enlightenment’ (are these last two the same?), ‘The Romantic Age’, ‘The Age of Revolutions’, ‘The Modern Age’, and so on. What distinguishes one period from another is often hard to determine. Here the focus is on the period of “The Enlightenment”, its scope, the content of its characteristic doctrines, their epistemic standing and some critics of the (idea of) the Enlightenment.

Of the multifarious issues that surround The Enlightenment, the following few are selected for attention in this essay. Section 2.1 of this paper canvases a few of the competing accounts of when The Enlightenment occurred, how many “enlightenments” there were and what some of its central doctrines might be. As a leading hypothesis I draw (but not uncritically) on Jonathan Israel’s idea that there are just two aspects to The Enlightenment, the Radical and the Moderate, and his more detailed account, in the form of eight cardinal points, of how one might characterise the Radical Enlightenment. Section 2.2 makes some suggestions that expand on the role of science in The Enlightenment that are not well captured in Israel’s account. Section 2.3 develops some brief comments about what it might be for a person to be enlightened about some subject matter. Note here that the word ‘enlightened’ is an adjective that is applied to a person. This is to be distinguished from its nominalization when it is turned into the abstract noun ‘The Enlightenment’. It will be claimed that its denotation remains quite unclear; if not treated with care it is a misleading abstraction.

In Sect. 2.4 it is suggested that talk about ‘The Enlightenment’ is better replaced by an epidemiological approach that considers the scatter of enlightened and unenlightened people at a time in any given society. This is the kernel of hard fact about

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“The Enlightenment” as it exists in a given society at a time. The approach taken here is that of methodological individualism in which a seemingly holistic concept like “Enlightenment” is given an analysis in terms of individual people who are enlightened to some degree or in some respect. Section 2.5 considers some of the definitional comments made by Mendelssohn and Kant in their respective accounts of The Enlightenment; these are just two of the many early attempts to characterise the Enlightenment. The final Sects. 2.6 and 2.7 consider some of the claims made by some recent detractors of the Enlightenment (such as John Gray, Horkheimer and Adorno). Their claims have gained some currency but, as will be argued, they are not convincing and are often implausible. But they are part of the current widespread denigration of “The Enlightenment” that has reached beyond philosophy and sociology into science education where typically one author, for example, maintains that: ‘Enlightenment epistemology of science is imbued with cultural meanings of gender’ and that the Enlightenment gave rise to all manner of undesirable dualisms (Brickhouse 2001, p. 283).

2.1 What Is Enlightenment?

There is little agreement as to when “The Enlightenment” started. Many suppose that it began at some time during the first half of the 1700s though others push its origin back to a time in the 1600s in order to include the works of Descartes (1596–1650), Spinoza (1632–1677) and Newton (the first edition of his *Principia Mathematica* was published in 1687) as crucial to philosophical and scientific aspects of “The Enlightenment”. It remains a moot point as to whether what some call “the scientific revolution” is to be included within The Enlightenment. The scientific revolution was inaugurated much earlier by Copernicus (his *De Revolutionibus* was published just before his death in 1543) and was continued by Bacon, Galileo, Kepler, who were followed by many others.

If “the scientific revolution” is regarded as an independent matter (as it is here), it remains important to trace the influence of both science and the methods of science on “The Enlightenment” conception of rationalism and reason. Matthews follows many in saying: ‘The eighteenth-century Enlightenment was the fruit of the seventeenth-century scientific revolution’ (Matthews 2015, p. 23). Many suppose that “The Enlightenment” ended by the end of the eighteenth century; the decade of the French Revolution 1789–1799 is commonly said to mark its end.

For some, for example Habermas, these dates are too restrictive. There is still supposed to be an ongoing “project of enlightenment”¹ which remains unfinished.

¹There is a quite ordinary sense of the phrase ‘The Enlightenment Project’ in which we can say that some of the ideas and ideals that were inaugurated in the 17th and 18th The Enlightenment period are yet to be fully articulated or even adequately implemented (such as sexual equality). Habermas, of course, might well invest the phrase with a different meaning as when he talks of “Modernity – an Unfinished Project” at the beginning of the ‘Preface’ to Habermas 1990, p. xix. See also the collection by Honneth and others 1992.

More broadly, Bertrand Russell held the view that the enlightenment was a phase in a more general progressive development which began in antiquity, and that reason and challenges to the established order were constant ideals from that time until now. Given what we ordinarily understand by being enlightened and using reason, Russell is right in that it would be odd to claim that the Ancient Greeks, some of the medieval philosophers, as well as theoreticians in our own time, were not enlightened. A similar point is acknowledged by a leading historian of The Enlightenment, Peter Gay, who speaks of a ‘first enlightenment’ to be found in Ancient Greece and the Roman Empire.² For him the subsequent “second” seventeenth–eighteenth century enlightenment period is said to be “pagan” in that it rejects much of the intervening Christian view of the world.

Is the “The Enlightenment” the same sort of thing in different places in Europe? Some point to the distinctive character of national enlightenments such as “The Scottish Enlightenment”, “The French Enlightenment”, and so on. The historian John G. A. Pocock in his *Barbarism and Religion*, Vol. 1, *The Enlightenments of Edward Gibbon* deliberately uses the plural ‘Enlightenments’ in the subtitle of his book about the various, distinct enlightenments with which Edward Gibbon was allegedly involved. He underlines this plurality by saying: “it is a premise of this book that we can no longer write satisfactorily of ‘The Enlightenment’ as a unified and universal intellectual movement” (Pocock 1999, p. 13). So we are to drop the ‘The’ indicating uniqueness. More broadly this suggests that in the attempt to say what “The Enlightenment” is, we are to abandon the idea that in any definition of the concept there is to be found a common core of characteristics which the allegedly various instances of the several “Enlightenments” all share. To use an idea of Wittgenstein, there might still be a family resemblance between the various kinds of Enlightenment even though there is no essential common core to them all. However on this view it does not emerge clearly just how many distinct “Enlightenments” there really are.

In three volumes, each about 900 pages long, another prominent historian of The Enlightenment, Jonathan Israel, resists Pocock’s position and claims that there were just two Enlightenments in Europe and America - Radical and Moderate mainstream (or conservative).³ Leading radical enlighteners were, for example, Spinoza, Bayle, Meslier, d’Alembert and Diderot; they advanced social and political ideas that were radically opposed to prevailing restrictive views advocated by the church and absolutist monarchies. Leading moderate enlighteners included, for example, Hume, Locke, Voltaire and (the later) Rousseau.⁴ To various extents they drew back

² Gay 1967, volume 1; see Book One, Chapter Two, entitled ‘The First Enlightenment’ and the bibliographical essay on pages 464–81. Note that the subtitle to volume 1 is ‘The Rise of Modern Paganism’.

³ In Israel 2006, chapters 1.1 and 34 ‘Postscript’ the case is made against the “many” enlightenments of Pocock and a supposed “one” enlightenment suggested by Gay. He makes a case for there being just two trends in the enlightenment period, radical and moderate. Though disputed, this will be provisionally accepted here since it is not germane to my main purpose in mentioning Israel’s work.

⁴ For an elaboration of this distinction see Israel 2006, section 1.1, pp. 3–15 and section 34 ‘Postscript’. The later Rousseau is even said to become ‘... the moral “prophet” as it were of one form of Counter-Enlightenment’ (*ibid.*, p 11).

from the more radical stance and even in some cases were apologetic towards, if not supportive of, the absolutist tendencies to be found in churches, governments and/or monarchies. Of the two kinds of enlightenment the moderate became the much more dominant in its public support and approval.

Unlike many historians of The Enlightenment, Israel assists discussion of what doctrines the Radical Enlightenment endorsed by distilling out eight, brief cardinal points which he takes to characterise it. In this essay I will, with one modification, provisionally accept Israel's cardinal points as a useful hypothesis to keep in mind; though it should also be recognised that the thinkers of the Enlightenment were quite diverse in their doctrines and not all would have endorsed every one of the following cardinal points in exactly the form expressed⁵:

- (1) adoption of philosophical (mathematical-historical) reason as the only and exclusive criterion of what is true;
- (2) rejection of all supernatural agency, magic, disembodied spirits and divine providence;
- (3) equality of all mankind (racial and sexual);
- (4) secular 'universalism' in ethics anchored in equality and chiefly stressing equity, justice and charity;
- (5) comprehensive toleration and freedom of thought based on independent critical thinking;
- (6) personal liberty of life style and sexual conduct between consenting adults, safeguarding the dignity and freedom of the unmarried and homosexuals;
- (7) freedom of expression, political criticism, and the press, in the public sphere;
- (8) democratic republicanism as the most legitimate form of politics.⁶ (Israel 2006, p. 866)

⁵Abner Shimony makes a good point about the diversity of views of leading members of the Enlightenment. They were: 'rationalists, empiricists and mediators; Newtonians and dissenters from Newton: system builders and skeptics; theists, deists, agnostics and atheists; cultural universalists and cultural pluralists; advocates of a variety of bases of ethics; a wide spectrum of political theorists; physicalists and mentalists; determinists and advocates of free will; trusters and distrusters in benevolent despotism; believers and disbelievers in the inevitability of human progress. Some core commitments, shared by almost all of the Enlightenment philosophers, can be reasonably extracted and these, in my opinion, need little modification to be permanently valuable' (Shimony 1997, p. S2). Shimony then proceeds to give a list of 10 core commitments of The Enlightenment which differ from those of Israel; but there is no deep inconsistency, or great distance, between the two lists. Shimony's list puts greater emphasis on matters to do with science and could have just as well been used here instead of Israel's eight cardinal points. Finally Shimony examines four criticisms of The Enlightenment and makes convincing responses to them (pp. S3-S9). His account is laid out and discussed in Matthews (2015, pp.24–26).

⁶In Israel 2011, section 1.1 ('Defining the Enlightenment', pp. 1–8) the author reviews other attempts at a definition of 'The Enlightenment' and proposes something like (1) to (8) in truncated form. He takes it to be a unitary movement occurring on both sides of the Atlantic from about 1680 to 1800 which is driven by philosophy (here Spinoza is said to have had an important role at the beginning) and is socially ameliorative in transforming accepted values and practices. The extent to which the Enlightenment is linked to revolution is one aspect of the division between Radical

We can take these eight to points embody central beliefs and values of enlightenment thought. They can be divided into two broad categories, scientific ((1) and (2)) and social-ethical ((3) to (8)).⁷ It is important to note that there is no logical link between scientific aspects of the enlightenment and its social/ethical aspects; each is logically independent of the other. But it just so happens that they do accompany one another, largely because of the more general background role of reason supposed in The Enlightenment that draws upon the scientific revolution.

The first two points are an attempt to characterise philosophical and scientific aspects of the Enlightenment; but (1) does not do it adequately as will be argued in Sect. 2.2. Clearly (2) distances science from religion. However this Enlightenment goal has not been realised fully; it is still a matter of dispute when one considers the resurgence of religious views which oppose science such as creationism or intelligent design or the moderate doctrine of NOMA championed by Stephen J. Gould which gives science and religion non-overlapping, consistent and complementary domains of concern.⁸ In contrast (3) to (8) spell out social and ethical aspects of Israel's Radical Enlightenment. Moderate Enlightenment departed from Radical Enlightenment in that it compromised on some of these social-ethical principles; for some of the non-radicals there was even a backsliding into supporting forms of absolute monarchy, authoritarianism (political and religious), and the like.

These eight cardinal points do not now have the same radical edge that they might have had in the eighteenth century. But there is a good sense in which we can agree with Habermas, Russell and Gay that the Enlightenment project is unfinished. In some respects the philosophical clarification of what each entails has yet to be fully articulated and agreed upon; and some of the ethical and political goals are only now being realised in some countries (e.g., the rights of gays, same sex marriage, sexual equality, the exercise of tolerance, and the like). Depending on what country one is in, the conflict between religion and science embodied in (2) still looms large. And the same can be said for the characterisation of science in the seventeenth–eighteenth century enlightenment period. Twentieth century philosophy of science deepens our understanding of both science and philosophy well beyond what might have been envisaged in that period; and this is still an ongoing process.

and Moderate trends within the Enlightenment. Cassirer has a different view from Shimony and Israel: 'The true nature of Enlightenment thinking cannot be seen in its purest and clearest form where it is formulated into particular doctrines, axioms, and theorems; but rather where it is in process, where it is doubting and seeking, tearing down and building up' (Cassirer 1951, p. ix). But there need be no inconsistency between picking out some cardinal points and also understanding the activity of thinking as some kind of process.

⁷Bristow, 2010, distinguishes three *different areas of enlightenment: scientific; moral/political; aesthetic*. Gay, 1970, chapters 5 and 6 also includes aesthetics in the various areas of enlightenment, as does Cassirer, 1951, chapter VII.

⁸For an account of his NOMA, see Gould 1999. For one of the many recent accounts of the conflict between religion and science which rejects Gould's distinction, see Coyne 2015, pp. 106–12.

Given the different ways in which the phrase ‘The Enlightenment’ could be used, some writers might well have thought that the best thing to do is to drop it altogether. But dropping it has the drawback that a number of eighteenth century thinkers used a term equivalent to the English word ‘Enlightenment’ to refer to their period of activity. The term ‘The Enlightenment’ appears to be of late usage in English; according to the on-line OED, the use of the expression beginning with ‘The’ followed by capital ‘E’ was only common in the nineteenth century after the time when some say “The Enlightenment” period had ended. On the continent their various terms for ‘The Enlightenment’⁹ had a longer history and towards the end of the eighteenth century writers on the topic became more self-reflective about what “The Enlightenment” was supposed to be.

This self-reflection began when Johann Zöllner posed an innocent question ‘What is Enlightenment?’ in a footnote of a paper he published in the December 1783 issue of *Berlinische Monatsschrift*. The reflection began in earnest when the same journal published the next year a series of articles which attempted to answer Zöllner’s question, beginning with those of Moses Mendelssohn and Immanuel Kant (these are discussed in Sect. 2.5).¹⁰ But there was no general agreement as to what The Enlightenment was. So little clarity about the nature of it was achieved that an anonymous 1790 article in the *Deutsche Monatsschrift* ‘... argued that the term had become so divorced from any clear conventions of usage that discussions of it had degenerated into “a war of all against all” between combatants who marshalled their own idiosyncratic definitions’ (Schmidt 1996, p. 2).

Though the eight cardinal points listed by Israel help anchor discussions about the beliefs and values of enlightenment thought, some might contend that we still remain in the same late eighteenth century state of conflict concerning its definition. Given what some contemporary critics of the Enlightenment think it is (see Sects. 2.6 and 2.7), one has good grounds for saying that the situation has not changed very much today. The remainder of this essay attempts to say to what extent it is possible to characterise “The Enlightenment” and to dispel some current misconceptions about it.

2.2 Science and The Enlightenment

Historians do not always have sufficient understanding of doctrines within philosophy and the philosophy of science; Israel’s philosophical cardinal point (1) is a good example of this. But the problems here can be readily repaired by making some broad comments about the development of science and the methods of science from the sixteenth to the eighteenth centuries that can replace what is said in Israel’s first

⁹A related term in German is *Aufklärung* and in French is *éclaircissement*. All three terms connote the casting of *light* upon some matter, or a process of bring something to light.

¹⁰These two papers and three other contemporary papers are collected in Part I of Schmidt (ed.) 1996.

cardinal point (1) (but perhaps not as succinctly). Here Israel lists one of the ways in which science and its philosophy has influenced some of the doctrines of The Enlightenment: he speaks of ‘philosophical (mathematical-historical) reason as the only and exclusive criterion of what is true’. But reason is reason, whether in the context of philosophy, mathematics or history. And in none of these cases is it a criterion for truth; this is a separate matter (which reason might well presuppose). The important matter that can be readily agreed upon is the broad role of scientific reasoning in “The Enlightenment” (setting aside the irrelevant appeal to mathematics and history). But what might this be?

Let us set aside questions about whether what is commonly called the “Scientific Revolution” was in one sweep quite revolutionary. However, the models of the cosmos provided by Copernicus in his 1543 *De Revolutionibus* inaugurated a chain of rethinking of theories of dynamics and cosmology that were developed by a number of thinkers from Galileo to Newton. Though much of this occurred well before several dates suggested for the start of The Enlightenment period, it had an important influence as a scientific exemplar of the kind of reason that any Enlightenment thinker thought they should try to emulate.

In considering this, we need to distinguish between the *products* of the various kinds of scientific thinking, such as the laws, theories, postulates and models that were developed, and the *processes* that were employed to arrive at these products. These processes fall under the general notion of the methods of science such as methods for discovering laws and theories, methods for assessing rival theories (such as Newton’s versus Descartes’ theories of motion in a resisting medium in which Newton’s theory was triumphant), methods for constructing idealized models of real systems (first developed by Galileo but subsequently followed by others), and the like. Not only were the products of the “scientific revolution” quite novel within The Enlightenment period; but also the methods of science themselves were novel and contributed to our idea of how reason can function when dealing with not only the natural world but also the human and social worlds to which Enlightenment thinkers were to turn their attention. It is this broad appeal to the notion of the role of reason and method in science and elsewhere that can replace Israel’s cardinal point (1).

But a little more needs to be said of this. The works of scientists from Copernicus onwards often contain an account of what the role of reason ought to be in science. Francis Bacon promulgated principles of reason such as principles of induction and inductive elimination. Descartes was preoccupied by setting out his ‘Rules for the Direction of the Mind’. Much more successful and influential in science were Newton’s ‘Rules of Reasoning in Philosophy’ that stand at the beginning of Book Three ‘System of the World’ in his *Principia* and which were employed in arriving at his law of Universal Gravitation. Subsequently philosophers developed theories about the extent and limitations of reason which are still open to debate (for example, Kant in his 1781 *Critique of Pure Reason*). If there is an unfinished project of “The Enlightenment” it is in the area of the philosophy of science and its articulation of what scientific reason might be, and reason more generally. Theories of method,

logic and the nature of rationality grew in the twentieth century leading to a deepening account of scientific reason along with more broad theories within epistemology.¹¹ The eighteenth century Enlightenment had only an intimation of this.

Some of the issues involved here are well-stated by Rebecca Goldstein in her recent critical review of a book on *The Enlightenment*:

... the soul of the Enlightenment unmistakably lay in an endorsement of reason, though not necessarily *a priori* reason, since many Enlightenment thinkers were robust empiricists They appealed to rational powers, which meant that only certain kinds of justification for beliefs would be countenanced—namely those that were, in principle, accessible to all humans relying only on our shared cognitive capacities. Insisting on this standard was the Enlightenment’s revolution. There could be no privileged knowers who appealed to special sources of knowledge—available to them by way of heavenly revelation, or authoritative status, or intimations to which their group was privy. Even tradition couldn’t stand merely on its longevity but had to justify its right to continue to exist.

The Enlightenment, in short, amounted to an assertion of epistemic democracy. Whatever can be known by one person can, in principle, be known by all, as long as they master the techniques for knowing that are relevant to a field. It’s no accident that the development of modern empirical science was intertwined with the Enlightenment. (Goldstein 2015, p. 51)

Talk of there being no privileged knowers with a special inside track to knowledge and there being epistemic democracy for all of those who are willing to make the intellectual effort, not only underpins Israel’s point (2) about the rejection of the supernatural but prepares the ground for the positive features of method and reason suggested in point (1) that give content to the principles of an epistemic democracy advocated by many enlightenment thinkers. It is this conception of epistemic democracy, along with the principles of scientific reason, that were being developed from the eighteenth century onwards, which lie behind Israel’s cardinal points (1) and (2). It is this expanded conception of these points which will be assumed here.

2.3 What Is It to Be Enlightened?

What do we normally mean by being enlightened? In our ordinary use of the term a person can be enlightened when they are instructed about, or informed about, or have some ““light” cast upon”, some matter about which they previously knew little or nothing. Negative connotations are added when it is said that a person is at the same time freed from ignorance, superstition or prejudice. In addition, a person can be said to be enlightened when they acquire some understanding of some matter or be in a position to offer an explanation of it. Thus in reading Newton’s *Principia* one can become enlightened, say, about the universal character of gravitational

¹¹There is a good account of aspects this in Shimony 1997. Shimony is a philosopher of science who is well known for defending Bayesianism as the method of science to adopt; he is not an historian like most of the writers considered so far. There are also a few hints about the role of science and its methods in Cassirer 1951, chapter II, though his comments are largely with respect to Newton and some of Newton’s contemporaries.

attraction and how the law that governs it works. Negative connotations are emphasised when it is added that one is freed from some former prejudice, superstition or ignorance about the nature of gravitation as it acts in the universe.

Could one say that one's tax consultant enlightens one about one's tax returns? This is not ruled out in the above and remains an acceptable use of the term in ordinary English when one is informed about factual matters. (However note that no negative connotation such as superstition or prejudice need be involved; it is simply a matter of not knowing.) If one wished to set aside such a case, one would have to add that being informed about factual matters may not be the proper intensional object of "being enlightened about ...". Rather, the proper object of being enlightened is acquiring some explanatory knowledge or understanding rather than merely knowledge of particular fact. Enlightenment about, say, gravitational attraction is akin to gaining knowledge of, or understanding about, Newton's theory of gravitational attraction and its associated law¹²; this is different from merely getting knowledge of a factual matter such as the gravitational mass of the Moon. In addition becoming enlightened may well involve using some of the principles of epistemic democracy suggested in the previous section.

Setting aside what some early writers may have said about the nature of the enlightenment (see Sect. 2.5) we may proceed in a slightly anachronistic way and consult the on-line OED. It says two things about being enlightened: (1) '... bringing someone to a state of greater knowledge, understanding, or insight; the state of being enlightened in this way'. Here there is emphasis on the state of acquiring some initial knowledge or understanding. But further emphasis on the word 'greater' suggests a pervasive feature of past and present science, viz., its ability to grow. Science is not static in what it produces; in line with its epistemic democracy, it is dynamic and revisionary giving us new or improved laws, hypotheses and theories as well as methods and techniques of observation gathering and experimentation.

Within theories of scientific method criteria have been proposed in which we can determine the extent to which we have improved knowledge (or more correctly, beliefs) over previous knowledge (beliefs); or improved understandings or explanations when compared with previous attempts at understanding or explanation; or we have ways of determining any increase in truth-likeness or verisimilitude; or we have ways of determining when we have some degree of evidential support, or greater evidential support, for our laws, theories and hypotheses. Here emphasis is placed on the idea of enlightenment being a process within the growth of knowledge. There is nothing novel about this aspect of enlightenment so defined. It is a feature of science both before and after the commonly suggested seventeenth and eighteenth century scope of The Enlightenment period.

¹²Of course one might not be fully enlightened about Newton's theory of gravitational attraction but only partially so. However partial enlightenment is a step along the path to greater enlightenment as one's knowledge and understanding develops. Think of the more limited understanding of Newton himself and his application of his theory when compared with later developments of the theory of gravitation suggested by Laplace, Lagrange and Hamilton.

The on-line OED goes on to make an important contrast between an earlier state of pre-enlightenment understanding which is then replaced by an enlightened view: (2) ‘The action or process of freeing human understanding from the accepted and customary beliefs sanctioned by traditional, esp. religious, authority, chiefly by rational and scientific inquiry into all aspects of human life, which became a characteristic goal of philosophical writing in the late seventeenth and eighteenth centuries.’ This is not merely a matter of getting greater and greater understanding, this being one of the important critical functions of science in relation to earlier sciences. Importantly enlightenment has a further critical and revisionary function in that customary, traditional and religious beliefs and various kinds of authorized beliefs are to be replaced, this being the first step on the path to initial (if not complete) enlightenment. And by what means are the pre-enlightened beliefs and values to be replaced by enlightened beliefs and values? This is something called “rationality” or “scientific method” - whatever they are.¹³ Thus the methods of science help us in both aspects of the notion of enlightenment distinguished by the OED. Its use helps people make the first move from pre-enlightened beliefs and values to enlightened beliefs and values; and then it helps people to get improved beliefs once the initial move has been made out of the pre-enlightened phase.

The above will suffice to say what the property of being enlightened might be when predicated of persons. In addition the kind of knowledge involved is given some content by the eight cardinal points listed by Israel (noting the revised (1)). Thus a person is enlightened when they apply scientific methods and advocate toleration, freedom of expression, sexual equality, republicanism, etc. To require that they also conduct their lives in the light of these principles and actually practice what they advocate is to adopt a strongly committed version of enlightenment. They are also enlightened when they use some principles of scientific method to argue for some point of view and do not abandon epistemic democracy in favour of some kind of epistemic privilege, as might their religious rivals.

What now counts as being unenlightened? A necessary condition for a person to be enlightened would be, for example, to believe in toleration, or freedom of expression or sexual equality (i.e., to advocate most or all of the eight cardinal beliefs and values listed by Israel); to fail to so believe would make one unenlightened. However mere belief might not be enough for enlightenment: one is required also to practice what one believes leading to a more strenuous form of enlightenment. Note that not being enlightened is not to be confused with the Counter-Enlightenment; this is a philosophical and political movement opposed to some or all of the main tenets of The Enlightenment (such as Israel’s eight points). One can be unenlightened but not be a member of the Counter-Enlightenment.

¹³As already suggested, the nature and scope of scientific method and rationality, though an important part of the seventeenth and eighteenth century enlightenment period, is still part of the unfinished project of the enlightenment. See for example the growth of statistical methods or random clinical trials during twentieth century science. There are still issues to be addressed in a full account of the nature of scientific method and the scope of rationality in various spheres. This is suggested in the revisionary comments on Jonathan Israel’s cardinal points (1) and (2) of the previous section 2. See also Shimony 1997.

2.4 The Enlightenment Versus the Epidemiology of Being Enlightened

Epidemiology is the study of the distribution of some property throughout a given population (which could be human or non-human, though here we will stay with human populations). One could focus on any property (over a given time). Typically within epidemiology the property is a medical one, such as the spread of influenza in a population over a given time. But one can consider the distribution of non-medical properties across a population such as being over 2 m tall, or owning two or more homes or having more than 10 million dollars in wealth. The population is then divided into two groups (which can have fuzzy boundaries); those who have the specified property and the complementary group of those who do not have the property.

In the same way one can also consider the distribution of mental properties over a population, such as the property of believing in some proposition, that *p*. Thus in a given population some will believe that the free market is the most efficacious form of economic organisation while others will not; some will believe that God exists while others will not; some will believe in creationism while others will not; and so on for any belief whatever. Here the population is divided into two groups: those who believe some claim that *p* and the complementary group who do not believe that *p* (which can be further divided into those who positively disbelieve that *p*, or have no belief either way that *p*, or have suspended belief in *p*, or are so confused that they do not know what they believe).¹⁴

Now apply the epidemiology of beliefs to the particular case of the beliefs characteristic of “The Enlightenment” (such as the conjunction of (most of) Israel’s eight cardinal points). It would be an empirical matter to determine just how widespread were these Enlightenment beliefs at any given time in, say, the seventeenth and eighteenth centuries across Europe (though not an empirical investigation that one could easily carry out now).

Israel gives us a hint of these empirical matters when he says:

In this present work, over seventy writers French, Dutch, German, Italian and British active within the period between 1660 and 1750 have been identified as significantly contributing to formulating and publicizing the ideas which drove the Radical Enlightenment, in conjunction with social forces and grievances where these helped to produce the ideas and shape the controversies. ... among the five main ‘national’ contingents, the French group turns out to have been by far the largest, the Dutch the second largest, and the British group seemingly the smallest.’ (Israel 2006, p. 867)

We can say that, in a given society, a few people (such as the above writers) are the enlightened at that time, and indeed the radically enlightened. Just how many fellow travellers in each society were also radically enlightened is hard to tell. But we can say that the number of people in a given society who were (radically) enlightened

¹⁴On the application of epidemiology to cultural contexts see Sperber 1996, ‘Introduction’ pp. 1–6 and Chapter 4 ‘The Epidemiology of Beliefs’.

was quite small when compared with the number of people in the complementary class who were not enlightened at all (and this would include a small number of members of the Counter-Enlightenment who knew of the doctrines of the radically enlightened few but were opposed to them).

This highlights the way in which the use of the phrase ‘The Enlightenment’ can mislead. It is an abstract noun which is not clear in its denotation. Does it refer to a period of time? Or a body of doctrine? Or some people? Or a movement or a process? Or what? Context of use might not always help here. However an approach based on the epidemiology of belief invites us to consider (i) the adjective ‘enlightened’ which can apply to the members of a class of people and (ii) the adjective ‘unenlightened’ which applies to the members of a complementary class. A period, or an “Age”, might be characterised by having a small number of enlightened people in it while also containing a large number of unenlightened people. In such a case the phrase “The Enlightenment” when applied to the Age as a whole will be misleading in another way.¹⁵

Here there is an important distinction to mark that perhaps Kant is trying to make when he says: ‘If it is asked “Do we now live in an *enlightened* age?” the answer is “No”, but we do live in an age of *enlightenment*” (Kant 1996, p. 62). We do not live in an enlightened age because of the paucity of people who are in fact enlightened; the complementary class of the unenlightened is, in comparison, quite large and they are dominant. But because there are some enlightened people, as few as they may be, there is some enlightenment in the age.

Importantly there is no overall thing such as “The Enlightenment” to talk about. In one of its uses the phrase ‘The Enlightenment’ might be thought to pick out an enlightened age; but according to Kant there is no such thing to pick out as there is no general enlightenment distributed across all, or most, people. In another of its uses the phrase ‘The Enlightenment’ might refer to an “age of enlightenment”; but then few in the age are enlightened and there is a much bigger complementary class of people to take into account who are not enlightened. What is being talked about is often unclear or misleading. The distinction Kant attempts to make becomes clearer on the epidemiological approach taken here. It separates the use of an adjective ‘enlightened’ when applied to people (or not as the case may be) from the more obscure ‘The Enlightenment’ which is unclear in its denotation and so can mislead those who use the term.

Since being enlightened is not an “all-or-nothing” matter, the epidemiological approach needs modification. Suppose we have some persons x who live in a given society S (or Age) over a time t ; and suppose further that they hold some enlightened beliefs and values, B , on some subject matter M . The beliefs they hold might be some of the eight given in Israel’s (modified) list, or at least some smaller number of them which form a cluster. The first modification arises as follows. We should not expect that person x always be fully enlightened about subject matter M ; they may

¹⁵ Approaching matters in this way gives an account of the seemingly holist notion of Enlightenment in terms of the mental properties of people; in this way the proposed analysis is of a piece with the doctrine of methodological individualism.

be only partially so (as an example see footnote 12 on this). Taking this into account allows that a person's enlightenment can come in degrees which can then be comparative.

As an illustration consider John Locke's well known account of tolerance. Locke's attempt to develop an account of the concept of toleration is at best partial; modern accounts are, in several respects, an improvement. Infamously Locke restricts the extension of the concept of those to be tolerated; his account is partial since atheists are not to be included and he has serious doubts about Catholics. (Locke 1689/2010–15, section 10, p. 21). Since Locke's time we have expanded the extension of those who must be tolerated making it a universal ideal. However the extent to which tolerance is actually practised between groups and nations is a separate empirical socio-historical matter which tells us about the degree to which enlightenment ideals are actually realised. For various groups of people the extension of tolerance is at best partial; so we can legitimately speak of the unfinished project of enlightenment.

A second illustration is the case of David Hume who is often cited as a leading enlightenment figure. Is he always enlightened when it comes to race? Hume tells us that 'the most rude and barbarous of the whites, such as the ancient Germans, the present Tartars, have still something eminent about them' (Hume 1985, p. 208, fn. 10). But not so the "negroes" as Hume calls them. None of them have any redeeming features at all: 'I am apt to suspect the negroes to be naturally inferior to whites'. That negroes accomplish anything is to be compared to '... a parrot who speaks a few words plainly' (loc. Cit.). Hume's espousal of an appalling form of selective racism concerning "negroes" illustrates, at best, a case of "partial enlightenment" (in the sense being distinguished).

A second modification concerns the possibility that a person x be enlightened about some subject matter M but not about some other subject matter M^* (say, they are fully or partially enlightened about the science of gravitational attraction but not fully or partially enlightened about political matters such as republicanism). It is a commonplace observation that some people are enlightened about some subject matter M at a time but not enlightened about other matters such as M^* ; and yet other people are not enlightened about M at all. Note that all of this can vary over time.

Further modifications allow that a person's belief B is not a matter of either full, or no, belief; there are degrees of belief D in between to take into account.¹⁶ In addition the degree of belief may be sanctioned by some principles of reasoning or principle of scientific method R .¹⁷ Clearly people can differ in the respects and the degree in which they are enlightened.

¹⁶Here one could adopt an account, found in theories of probabilistic degrees of belief, as to how D is to be understood. D can vary on a scale from 0 to 1.

¹⁷Perhaps this could be expressed more strongly; it is not just that a person's beliefs are sanctioned by some principles of rationality but a person's actually holds the belief on the basis of the sanctioning principles. Being so enlightened is more strenuous in requiring the actual use of principles of reason in belief formation. Being unenlightened would then be accompanied by forming beliefs dogmatically without any appeal to principles like R .

This suggests at least seven parameters in terms of which enlightenment can be assessed: <a person x in a society S at a time t , a set of beliefs and values B held by x about some subject matter M , some principles of belief assessment R employed by x , and some degree D to which B are given credence by x >. Or in short: < x S , t , B , M , R , D >. This gives a finer gradation concerning enlightenment; having an enlightened attitude to matters is not an all-or-nothing affair. Importantly as x and t vary (within S) the attempt to find the incidence of beliefs B about M in S will result in a scatter of individuals who are enlightened to some degree; but this will shade off into a scatter of individuals who lack any such beliefs - the unenlightened. As indicated this scatter can vary over time and place; determining what is the scatter is a matter of empirical science.

The epidemiological approach taken here shows that one cannot talk in a general way about “The Enlightenment”; this is part of the inflation of the term ‘Enlightenment’ and its denotational obscurity. Rather there is just the social scatter of the property of being enlightened and unenlightened with respect to people. Perhaps with some charity, the term ‘Enlightenment’ can be understood on some occasions of its use to be a shorthand way of referring to this scatter.

2.5 Early Attempts to Define ‘Enlightenment’: Moses Mendelssohn and Immanuel Kant

In his brief 1784 commentary, Moses Mendelssohn does not really attempt to provide a definition of the term ‘enlightenment’; but he makes links between it and other notions such as Culture (Kultur) and Education (Bildung) (though the term ‘Bildung’ can cover all three concepts). He also makes comments which link nicely with what has been developed in the above sections about the epidemiological scatter of the property of being enlightened.

Enlightenment, he says, concerns more theoretical matters, such as our knowledge and our ability to rationally reflect and to eliminate prejudices. This is said to stand in contrast to culture which is oriented towards more practical matters that can arise in political, ethical and aesthetic contexts. He readily acknowledges the different degrees to which societies can be enlightened; the epidemiology of being enlightened differs between different cultural groups such as Berliners, the English, the Chinese and the Ancient Greeks. He also recognises that enlightenment can come in different degrees: ‘... the enlightenment of a nation is proportional to (1) the amount of knowledge, (2) its importance (3) its dissemination through all estates, (4) its accord with their vocations’ (Mendelssohn 1784/1996, p. 55). Each of these four considerations can fit with the above set of parameters for determining the scatter, in any population, of the property of being enlightened.

Mendelssohn also acknowledges the way in which education is important in spreading enlightenment. Education is the main way of providing us with an enlight-

ened view of the world (viz., increasing knowledge and understanding of the world), a critical stance from which to evaluate prejudice, and an appreciation of how rational reflection is involved in both these matters. Here Mendelssohn touches on the significant issue of, given the small scatter of enlightened people compared with the larger scatter of the unenlightened, how the number of the enlightened is to be increased. Since the acquisition of knowledge and understanding lies at the heart of the enlightenment project, education becomes important in increasing the extent and degree of enlightenment in any society.

In contrast, Kant does attempt to say what the enlightenment is; this attempt is commonly cited but not often critically evaluated (one exception is Bittner 1996). Kant tells us that the motto of the enlightenment is: ‘*Sapere aude!* Have the courage to use your *own* understanding!’ (Kant 1784/1996, p. 58). As has been said above, understanding and explanation are two proper goals of the epistemic enterprise associated with enlightened thinking. We can all agree that each person, when they can, ought to autonomously employ their own powers of reason in thinking, in constructing explanations and forming their understanding of some subject matter.

Importantly the injunction rules out (1) appeal to authorities (such as religious or monarchical), socially sanctioned traditions, habits and conventions so that epistemic democracy prevails. Kant also emphasises two additional points when he talks of (2) courage, which might well have to be employed in (3) the use of ones’ own understanding rather than that of another. These three points are emphasised in what can be taken to be Kant’s account of ‘enlightenment’: ‘*Enlightenment is mankind’s exit from self-incurred immaturity. Immaturity is the inability to make use of one’s own understanding without the guidance of another*’ (*loc. Cit.*).

A number of points need to be made about Kant’s account. First, the definition (if that is what it is) given by the injunction ‘*Sapere aude*’ is almost content-less. As important as the injunction is, and although it states that individuals should ‘own’ their beliefs and not be swayed by mere authority, it does not tell us anything about the actual beliefs and values that an enlightened person ought to entertain or reject, for example, along the lines of the eight cardinal points listed by Israel (modified or unmodified).

Second, one might summon up one’s courage to have beliefs with some content but miscalculate what the proper use of one’s understanding ought to be. So, something normative has to be added to using one’s understanding to ensure that it is a *proper* use so that the products of one’s understanding bear some relationship to the truth.

Thirdly, one might well dispute whether any immaturity¹⁸ one suffers from is self-inflicted so that one is unable to make use of one’s understanding without the

¹⁸Some argue that part of the problem in understanding Kant here is with the use of the English term ‘immaturity’ which commonly translates a German term which has legal overtones not present in the English. Thus the German term can apply to the legal status of minors who do not have certain kinds of responsibilities; but this is not the necessarily the case with the English ‘immaturity’.

help of another. One's inability to use one's own understanding may not be self-inflicted and could well be due to other factors outside one's control such as lack of the right education, lack of training to acquire the right skills, lack of opportunity during one's life, and so on.

Fourthly, one should not make the inference that there was a prior stage in which one was mature and then later one is immature (whether it is one's own fault or not) and that one might try to recover the earlier phase of maturity; there might well be no such earlier phase to recover.

Finally, is Kant saying that we ought to put no, or very little, weight on the judgments of others in forming our own beliefs and that always we ought to maximize our own judgmental autonomy? For an enlightened outlook Kant says that we need to make a public use of our reason in all matters. In contrast there are those who tell us not to. Thus the tax collector says: 'Don't argue, just pay. The clergyman says: 'Don't argue, just believe'. And so on.¹⁹ Certainly the injunction '*Sapere aude!*' rules out such cases. But would it rule out the following case from science (rather than religion)? Suppose that a scientist, or Isaac Newton himself, says, pointing to *Principia*, Book III on gravitational attraction, 'Don't argue; just believe this stuff on gravitational attraction!'

We lay people often take what scientists say about their field as authoritative. Moreover scientists in one field (say, genetics) take what other scientists in another field (say, plasma physics) on authority and do not think through the other's science. In general a scientific claim that *p* (say, about Newtonian gravitation) is taken on trust by others who do not work in the field. And they take it on trust because of the authority of the scientist (after all it is Isaac Newton!), or the authority of the book or journal in which the claim that *p* is published; and so on. In such cases there is an authoritative person who offers us expert testimony.²⁰ Standardly in such a case we do not have to argue for ourselves all the ins and outs with some Newton about his theory but simply accept matters on his word. But if one simply takes on board Newton's claims as a matter of expert testimony does it follow that one is immature in some way, as Kant might be understood to claim?

What this example shows is that we can separate Kant's connection between self-incurred immaturity and the guidance that another can provide without fully using one's own understanding. Importantly in education a student can accept such guidance without being self-incurably immature, as in the case of coming to know on the basis of testimony. Kant might well be asking for too much in requiring that the light of reason shine in all cases of knowing. After all we do get much of our knowledge from expert testimony without reckoning we are immature in some way. But it should always remain an open possibility, as Kant indicates, that we also come to know matters, such as Newton's theory of gravitational attraction, on the basis of the exercise of our own powers of reason. This is an aspect of epistemic democracy (see Sect. 2.2) which is at the core of Enlightenment ideas and ideals.

¹⁹ See Kant 1996, p. 59. Kant talks of our freedom to use public reason in not following these injunctions.

²⁰ On expert testimony see Gelfert 2014, especially Chapter 9.

2.6 Some Modern Critics of “The Enlightenment”

(a) John Gray

There is a general tendency found in several contemporary critics to want turn off the lights of “The Enlightenment”. Rather than cast light on the world it has been claimed to be responsible for some of the dark episodes of recent human history from colonialism to imperialism, anti-Semitism, the Holocaust, racism, and the like. Thus John Gray wants to tell us: ‘The role of the Enlightenment in twentieth-century terror remains a blind spot in western perception’ (Gray 2008, p. 50). One can take this to be a causal claim saying that “The Enlightenment” has been casually responsible for some acts of twentieth century terror - though we have failed to notice this. Further on he tells us: ‘The Enlightenment played an indispensable role in the development of Nazism’.²¹ Indispensability is more casual talk. Thankfully Gray does not think that the Enlightenment was causally involved in *all* twentieth century acts of terror, the case of the 1994 massacre in Rwanda being an exception he mentions. But he does allege there is a causal role of “The Enlightenment” in bringing about some twentieth century acts of terror, or the Nazis.

Contrary to Gray, many would find it hard to envisage how Kant’s directive ‘*Sapere aude!*’, viz., ‘employ one’s own understanding!’, or Israel’s eight cardinal points of Enlightenment doctrine (see Sect. 2.1), could have been responsible for either terror or Nazism. Gray’s remarks are fatuous in an important way. He talks of “The Enlightenment” as if it had causal powers to bring about things. But this is a category error due to the inflated use of language. We have noted in Sect. 2.4 that it is hard to determine what the denotation of the abstract name ‘The Enlightenment’ is. Perhaps it refers to period of time, say from 1660 to 1790. But periods of time have no causal powers. Nor can the eighteenth century “Enlightenment” make a leap over time to causally affect the Nazis of the twentieth century. Perhaps it refers to some eighteenth century doctrines; but again, propositional doctrines, in themselves, have no casual powers.

The suggestion made in Sect. 2.4 about the epidemiology of beliefs and values held by people in some society over time might bring us closer to the right kind of ground for the casual powers allegedly at work here; it is people and the beliefs on which they act that have causal powers. Putting matters this way turns on the important distinction between a group of people who were enlightened (they adopted something like the eight doctrines listed by Israel) and the complementary group who were unenlightened (either they had never heard of Israel’s eight doctrines or, if they had, they were counter-enlightenment people who rejected them).

²¹ See chapter 2, ‘Enlightenment and Terror in the Twentieth Century’ in Gray 2008, p. 78. Again on p. 78 Gray tells us that ‘Nazi ideologues picked up from ... Counter-Enlightenment thinkers whatever they found useful – as they did with the thinkers of the Enlightenment’. But Gray also speaks of ‘... a Nazi state which spurned the Enlightenment and all its works ...’ (Gray 2002, p. 101). Doing both of these seems impossible, even for the Nazis.

Here another distinction mentioned in Sect. 2.4, but not noticed by Gray, becomes important: it is Kant's distinction between "living in an enlightened age" (we do not) but "living in an age of enlightenment" (we do because there are some enlightened people, however few). In this context, the reference of Gray's use of the term 'The Enlightenment' remains quite obscure. We can ask: which group, the enlightened or the unenlightened, might be the best candidate of the alleged causes of twentieth century terror or the Nazis? One would have to attribute a great deal of cognitive dissonance to the enlightened if they are to be deemed causal agents which bring about terror or Nazism.

The above merely addresses the question of what is the alleged casual power at work in these cases of terror, or the rise of the Nazis. It does not yet say whether the supposed casual power actually brings about the alleged effects. The problem with claims of the sort made by Gray and others is that there is no investigation into what are the cause-effect relations that are supposed to hold that would rule out merely accompanying features which are not causes. That there are enlightened people who hold enlightenment doctrines and that they are contemporaneous with people who do not hold or reject enlightenment doctrines (some of whom are agents of terror or Nazism), seems to go unnoticed in vague all-encompassing talk of "The Enlightenment" as some kind of causal power. One would have to show which of the enlightened and the unenlightened is casually responsible for terror or the Nazis; but even this much is not done. What we have are obscure and untested claims about causal relations in which no care has been taken to separate out genuine causes of particular events from spurious accompaniments. This is bad science. But this is one way in which causal claims about the supposed obnoxious effects of "The Enlightenment" get their currency.

Gray tells us about one of the sources of his claims about the rise of the Nazis: 'The argument advanced by some members of the neo-Marxist Frankfurt School, which says that Nazism is a logical development of Enlightenment thinking, is much overstated; but there is more than a grain of truth in it' (Gray 2008, p 78). Here the reference is to the 1944 work of Horkheimer and Adorno, *The Dialectics of Enlightenment*. If Nazism were to be a *logical* development of a certain kind of enlightenment thinking, then that would be to misuse the notion of logic and to confuse it with causation. Happily, this is said to be an overstatement; so we can pass over this claim. But it is left to us to search out what grains of truth we have been offered. Alas, the grains are meagre pickings. Horkheimer and Adorno wrote their book towards the end of WWII in exile in California. They wished to explain the rise of the Nazis in Germany and the Enlightenment is invoked to that end. How this explanation is supposed to work remains obscure or contestable.

(b) Max Horkheimer and Theodor Adorno

In the 'Introduction' to their book *The Dialectics of Enlightenment*, Horkheimer and Adorno summarize their final chapter 'Elements of Anti-Semitism: The Limits of Enlightenment' as follows: 'The argument and thesis of "Elements of Anti-Semitism" is concerned with the actual reversion of enlightened civilization to barbarism' (Horkheimer and Adorno 1994 pp. xvi-xvii). Though seven theses are

advanced about the nature of anti-Semitism, nothing substantial is established to causally connect a reversion of “enlightened civilization” to anti-Semitic and Nazi barbarism with “The Enlightenment” supposedly invoked as the temporally distant cause.²² Again as in the case of Gray, lack of clarity about the reference of ‘The Enlightenment’ does its job of obfuscation. All three commentators ride roughshod over Kant’s subtle distinction between “living in an enlightened age” and “living in age of enlightenment”.

One commentator, James Schmidt, finds there is hardly a connection at all between “The Enlightenment” and Nazism owing to the broad way in which Horkheimer and Adorno understand ‘The Enlightenment’:

The conception of enlightenment the book elaborated lacked historical specificity and its account of Nazi genocide ultimately made the choice of victims appear as contingent. The costs incurred by both these points should not be underestimated.

In the account offered by Horkheimer and Adorno, “enlightenment” has been defined so broadly as to make it virtually identical with the attempt to master nature through instrumental reasoning. As a consequence, any hope of understanding what was historically specific to the eighteenth-century Enlightenment is lost. (Schmidt 2000, p. 97)

There are two objections here. The first is the familiar point that the referent of ‘Enlightenment’ is obscure. The second is a new, surprising, point: Horkheimer and Adorno claim that the use of instrumental reasoning to obtain mastery defines ‘The Enlightenment’ (and that this leads to a disaster for the Enlightenment – a claim to be evaluated shortly). But they give the game away when they refer to non-enlightenment figures such as Francis Bacon, and Odysseus (!), as users of instrumental reasoning. In fact humans have used such reasoning ever since humans began to think. So, such reasoning cannot be a defining characteristic of “The Enlightenment”.

Instrumental reasoning is not specifically listed in Israel’s 8 cardinal points; but let us not quibble about whether or not such reasoning is to be found there. (It would be in an expanded version of Israel’s point (1) as suggested in Sect. 2.2, but other kinds of rationality are covered in point (1) than just instrumental reasoning.) Importantly Israel lists much more in his eight cardinal points which emerged in the eighteenth century Enlightenment period, and are characteristic of it. These items should be invoked if claims are to be made about any casual connection between the Enlightenment and anti-Semitism or Nazism. But it hard to see how any of these, such as toleration, equality, freedom of thought, liberty, equality, republicanism, etc., could in any way be casually responsible for anti-Semitism or Nazism. They in fact count against any such casual connection.

Horkheimer and Adorno have bigger fish to fry. They begin their book by telling us: ‘In the most general sense of progressive thought, the Enlightenment has always aimed at liberating men from fear and establishing their sovereignty. Yet the fully enlightened earth radiates disaster triumphant’ (*ibid.*, p. 3). And they speak of ‘the

²²The seven theses to be found in ‘Elements of Anti-Semitism’ is usefully discussed in Schmidt 2000 in a section entitled ‘Projection and Anti-Semitism’, pp. 91–97.

indefatigable self-destructiveness of the enlightenment' (*ibid.*, p. xi). To emphasise this they also tell us of '... the first phenomenon for investigation: the self-destruction of the Enlightenment' and add that '... the actual historic forms – the social institutions – with which it [The Enlightenment] is interwoven, already contains the seed of the reversal universally apparent today' (*ibid.*, p. xiii). These and other like passages spell out the main idea behind the title of their book *Dialectic of Enlightenment*. There is a *dialectic* at work in the Enlightenment; this is said to be a contradiction or, more metaphorically, something that contains the seed of its own destruction or transformation into something else. The emergence of anti-Semitism is, allegedly, just one aspect of the working out of these dialectical tensions.

Talk of a "dialectic" at work has always been obscure with many resisting such talk; they rightly ask for a more specific account of what are the causes at work which have supposed incompatible tendencies. But it can also be away of obfuscating what one wishes to talk about. Marx himself was not above this, and in fact says as much in a letter to Engels when he temporarily took over his job of newspaper commentator on Indian affairs when Engels fell ill: 'It's possible that I shall make an ass of myself. But in that case one can always get out of it with a little dialectic. I have, of course, so worded my proposition as to be right either way.'²³ One might well suspect that Horkheimer and Adorno have more than a little of Marx's dishonest cunning in using dialectic to get out of intellectual trouble and to be right regardless whatever they say.

It is hard to determine what dialectical contradiction lies at the heart of "The Enlightenment" which contains the "seeds" of its own destruction. But it is generally supposed to be due to the dominant role of instrumental reason to the exclusion of other forms of reason in our coming to master nature. The Elizabethan Francis Bacon (hardly an Enlightenment figure though he is prominent in the so-called 'scientific revolution'), is excoriated for promoting this kind of thinking in his advocacy of science. In summing up Bacon's alleged stance Horkheimer and Adorno tell us:

What men [sic] want to learn from nature is how to use it in order wholly to dominate it and other men. That is the only aim. Ruthlessly, in spite of itself, the Enlightenment has extinguished any trace of its own self-consciousness. The only kind of thinking that is sufficiently hard to shatter myths is ultimately self-destructive' (Horkheimer and Adorno 1994, p. 4)

In this context they also cite Bacon's claim that 'power is knowledge'.²⁴ Though this is a common view it is hardly compelling. First, it supposes that all principles of reasoning are instrumental in character which, we may suppose, is of the form 'if

²³A letter by Marx to Engels, 15 August, 1857; see Marx-Engels *Collected Works Vol 40* (1983) p. 152.

²⁴This is a slogan, often advocated by Foucault, which should be resisted. Most books on epistemology do not claim that the definition of knowledge involves power. In fact they do not even mention it, since they think that the view is so mistaken it is not worth noting. But of course if you know something then your powers of action can be enhanced. But this has nothing to do with the nature of knowledge itself; at best it is a possible consequence.

you want V then do X'. These are means-ends claims where 'X' is some procedure or action to be carried out and 'V' is something one might want, or value, or it might even be a value itself.²⁵ But as has been suggested in Sects. 2.2 and 2.5 in which principles of scientific reasoning are mentioned, in particular Newton's *Rules of Reasoning in Philosophy*, these are not instrumental in form; they are categorical. In fact in science one finds both instrumental claims alongside categorical claims. And in some of these categoricals the value might be truth itself; and X tells one how to arrive at truth. This is hardly an instrumental value to be excoriated.

Horkheimer and Adorno have a very one-sided and blinkered view of both science and its methods in ignoring categorical claims or the values that can enter into instrumentalities; but this is not uncommon in theoreticians of their ilk. For this reason their considerations about the dominance of instrumental reasoning fails to make its point.

A second unacceptable claim is that domination of nature and other men is 'the *only* aim' that instrumental principles can have. True, people do wish to find means (some provided by science) to dominate others. But this is not always the case and one can have instrumentalities that involve aims other than domination, such as those mentioned in Israel's cardinal points which express values such as equality, secularism, toleration, freedom, and the like. Though there are a lot of instrumentalities of domination to be noted, they are not the only instrumentalities and they have competitors with other values. This is something that most advocates of enlightenment values would recognise in their struggle against the absolutist tendencies of the churches, monarchies and governments of the time. And it is something we should recognize *pace* Horkheimer and Adorno.

Thirdly, there is the unacceptable claim that, as a result, the Enlightenment is somehow self-destructive. This *might* be so if the instrumentalities are *only* directed at dominance. But they are not. As just mentioned the social and ethical values espoused by enlightenment thinkers also involve values such as equality, secularism, toleration, freedom, republicanism and the like. These are ignored by Horkheimer and Adorno.

At the end of their book Horkheimer and Adorno tell us: 'Enlightenment which is in possession of itself and coming to power can break the bounds of enlightenment' (p. 208). Characteristically this is a somewhat obscure remark about an Enlightenment "in possession of itself" which somehow "breaks its own bounds". (This occurs when, presumably, issues of equality, secularism, toleration, freedom are given prominent recognition). If such a kind of Enlightenment is possible, then it would appear to be in contradiction with claims they make at the beginning of the book about 'the indefatigable self-destructiveness of enlightenment' in which this possibility appears to be ruled out. No dialectical wriggle can get them out of this contradiction; rather they must seriously modify the core of the dialectical claim

²⁵ It is important to note that in instrumentalities of the form mentioned, V can be a value itself, and not merely some goal or end that one might wish whatever its value. Horkheimer and Adorno seem not to recognise this point and reduce all instrumentalities to means-ends claims whatever the end.

about Enlightenment's self-destructiveness. And this they appear to do when, as some commentators suggest, they had planned to write a sequel which would counteract the negative view of *Dialectic of Enlightenment* with a more positive view in a work tentatively called *Saving the Enlightenment*.²⁶

It is hard to tell from Horkheimer and Adorno's critique whether there is anything worth saving in "The Enlightenment", contorted as it allegedly is by instrumental reasoning amongst other defects. If there were genuinely a "dialectical contradiction" at the heart of the Enlightenment then there is nothing to write about in any sequel; the Enlightenment is stuck with its alleged internal contradiction (and whatever fate is supposed to follow from this). But that there is such a contradiction is hopelessly obscure. As Marx advises, Horkheimer and Adorno can wriggle out of their predicament with a little dialectic and be right either way.

Do Gray or Horkheimer and Adorno manage to tell us something about the nature of Enlightenment? At best Gray gives us false causal consequences of it. And I leave it to a recent (not unsympathetic) commentator to tell us about Horkheimer's and Adorno's book: 'The few mentions of the original libertarian and emancipatory nature of the Enlightenment within the volume were hardly adequate to counterbalance its apocalyptic tone and unsubstantiated indictments, or the authors' unilateral pronouncements according to which "Enlightenment is as totalitarian as any system" (Horkheimer and Adorno, p. 24)' (Ferrone 2015, p. 33).

2.7 Conclusion

Here just three of the many critics of "The Enlightenment" have been mentioned. But there is now an academic industry hard at work discrediting the Enlightenment by showing that it is intimately bound up with the Nazis, the holocaust, capitalism, colonialism, universalism in education – you name it! To deal with all of these would require much more space than is available here. But many of them make Gray's false assumption that if something is coincidental with "The Enlightenment" then "The Enlightenment" must be the cause of it. To make this error one must not only have a poor idea of how casual connections are to be tested; also one has failed to see that talk of "The Enlightenment" is often quite obscure and that its referent is unclear. By introducing the idea of the epidemiology of enlightenment one can then begin to see how excessive focus on a nominalization of what is more properly adjectival can lead one astray. Talk of 'The Enlightenment' can be a convenient shorthand; but it comes at the cost of taking the nominalized name at face value and assuming that there is a definite "object" to be spoken about. The epidemiology of being enlightened tells us what are the real facts hidden behind the veil of a nominalizing abstraction.

²⁶On this supposed sequel see Schmidt 2000, p. 101. It seems as if little of it was actually written down.

References

- Bittner, R. (1996). What is enlightenment? In Schmidt (Ed.) (1996) pp. 345–358.
- Brickhouse, N. W. (2001). Embodying science: A feminist perspective on learning. *Journal of Research in Science Teaching*, 38(3), 282–295.
- Bristow, W. (2010). Enlightenment. In E. N. Zalta (Ed.) *The Stanford Encyclopedia of Philosophy*. URL = <http://plato.stanford.edu/entries/enlightenment/>. Accessed 26 Apr 2016.
- Cassirer, E. (1951/1932). *The philosophy of the enlightenment*. Princeton: Princeton University Press.
- Coyne, J. A. (2015). *Faith vs. fact: Why science and religion are incompatible*. New York: Viking.
- Ferrone, V. (2015). *The enlightenment: History of an idea*. Princeton: Princeton University Press.
- Gay, P. (1967). *The enlightenment: An interpretation: Volume 1, the rise of modern paganism*. London: Weidenfeld and Nicholson.
- Gay, P. (1970). *The enlightenment: An interpretation: Volume 2, the science of freedom*. London: Weidenfeld and Nicholson.
- Gelfert, A. (2014). *A critical introduction to testimony*. London: Bloomsbury.
- Goldstein, R. (2015, May). Don't overthink it. Review of Matthew B. Crawford, *The world beyond your head: On becoming an individual in an age of distraction*. In *The Atlantic monthly* (pp. 50–52). Boston: The Atlantic Co.
- Gould, S. J. (1999). *Rocks of ages: Science and religion and the fullness of life*. New York: Ballantine.
- Gray, J. (2002). *False dawn: The delusions of global capitalism*. London: Granta Books.
- Gray, J. (2008). *Black mass: Apocalyptic religion and the death of utopia*. London: Penguin.
- Habermas, J. (1990). *The philosophical discourse of modernity: Twelve lectures*. Cambridge, MA: The MIT Press.
- Honneth, A., McCarthy, T., Offe, C., & Wellmer, A. (Eds.). (1992). *Philosophical interventions in the unfinished project of enlightenment*. Cambridge, MA: The MIT Press.
- Horkheimer, M., & Adorno, T. (1994/1944/1947). *The dialectics of enlightenment* (Cumming J., Trans). New York: Continuum.
- Hume, D. (1985). Of national characters. In E. F. Miller (Ed.), *David Hume: Essays moral, political and literary* (pp. 197–215). Indianapolis: Liberty Classics.
- Israel, J. I. (2006). *Enlightenment contested*. Oxford: Oxford University Press.
- Israel, J. I. (2011). *Democratic enlightenment*. Oxford: Oxford University Press.
- Kant, I. (1996/1784). An answer to the question: What is enlightenment? In J. Schmidt (Ed.) (1996) pp. 58–64.
- Locke, J. (1689/2010–15). 'Toleration' (or 'First letter on toleration') translated by Jonathan Bennett. <http://www.earlymoderntexts.com/assets/pdfs/locke1689b.pdf>. Accessed 20 Apr 2016.
- Marx, K., & Engels, F. (1983). *Letter of Marx to Engels, 15 August 1857. Collected works volume 40. Marx and Engels 1856–1859*. London: Lawrence and Wishart.
- Matthews, M. R. (2015). *Science teaching: The contribution of history and philosophy of science*. New York: Routledge.
- Mendelssohn, M. (1784/1996). *On the question: What is Enlightenment?* In Schmidt (Ed.) (1996): pp. 53–57.
- Pocock, J. G. A. (1999). *Barbarism and religion: Volume 1, the enlightenments of Edward Gibbon, 1737–1764*. Cambridge: Cambridge University Press.
- Schmidt, J. (Ed.). (1996). *What is enlightenment? Eighteenth-century answers and twentieth-century questions*. Berkeley: University of California Press.
- Schmidt, J. (2000). Genocide and the limits of enlightenment: Horkheimer and Adorno revisited. In Str ath and Kaye (Eds.) (2000), pp. 81–102.

- Shimony, A. (1997). Some historical and philosophical reflections on science and enlightenment. In L. Darden (Ed.), *Proceedings of the 1996 PSA meeting* (pp. S1–S14). East Lansing: Philosophy of Science Association.
- Sperber, D. (1996). *Explaining culture: A naturalistic approach*. Oxford: Blackwell.
- Stråth, B., & Kaye, J. (Eds.). (2000). *Enlightenment and genocide, contradictions of modernity (philosophy and politics, volume 5)*. Brussels: Peter Lang International Academic Publishers.