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Empiricism, Early Modern



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Introduction

Broadly speaking, “empiricism” is a label that usually denotes an epistemological view that emphasizes the role that experience plays in forming concepts and acquiring and justifying knowledge. In contemporary philosophy, there are some authors who call themselves as empiricists, although there are differences in the way they define what experience consists in, how it is related to theory, and the role experience plays in discovering and justifying knowledge, etc. (e.g.,

Ayer 1936; Van Fraassen 2002). In contrast, in the early modern period, empiricism was not a label that philosophers traditionally characterized until nowadays as empiricists (most famously, John Locke, George Berkeley, and David Hume) used to describe their doctrines. Indeed, as attributed to early modern philosophical authors, empiricism is not an actor’s category, but an analytic historiographical category retrospectively applied to them and confronted to rationalism, whose main representatives were considered to be Rene Descartes, Baruch Spinoza, and G.W. Leibniz. Such a narrative began to be established by the late nineteenth-century and described early modern empiricism as an epistemological stance maintaining (1) that the origin of all mental contents lies in experience (a genetic statement), and (2) that knowledge can only be justified *a posteriori* (an epistemic statement). This entails that empiricists deny the existence of innate mental contents and the possibility of a purely *a priori* knowledge. In the history of early modern science such a dichotomy has been usually rendered in terms of the opposition between continental rationalist Cartesian science vs British empiricist Newtonian science. In the last four decades, many aspects of this traditional narrative have been criticized, and the meaning of early modern empiricism is subject of renewed studies.

The Origins of the Category “Empiricism” and Its Historiographical Establishment

Francis Bacon (1561–1626) has been mentioned as an important antecedent of the opposition between empiricists and rationalists (Priest 2007, 8; Van Fraassen 2002, 203), most notably by his introduction of a nowadays famous simile: “Those who have treated of the sciences have been either empirics [*empirici*] or dogmatists [*dogmatici*]. The empirics, in the manner of the ant, only store up and use things; the rationalists [*rationales*], in the manner of spiders, spin webs from their own entrails” (Bacon 2004, 153). However, more nuanced, well-documented, and contextual research (Vanzo 2014) has convincingly argued that in employing the Latin “*empiricus*” or the English “*empiric*” (and its variants) in this and other passages, Bacon was not introducing an *epistemological view* but rather a *scientific practice* that does not fit neatly into the traditional sense of empiricism. He qualified as *empirici* those practitioners of natural philosophy who were right in relying on experience for acquiring knowledge but were wrong in the method they used for deriving theories from it.

Besides Bacon, the eighteenth-century Scottish philosopher Thomas Reid (1710–1796) was also considered as an antecedent providing the standard characterization of early modern empiricism. He presented the philosophies of Locke, Berkeley, and Hume as successive stages increasingly unveiling the skepticism to which the “way of ideas” inaugurated by Descartes fatally leads (Norton 1981; Haakonssen 2006). However, it is Immanuel Kant (1724–1804) who offers the closest account of what would become the standard meaning of empiricism (Vanzo 2013, 2014). In the section of the *Critique of Pure Reason* (1781) entitled “The History of Pure Reason,” he classified philosophical schools before him. With respect to the origin of the pure cognitions of reason (concepts and judgments), he divided philosophers into empiricists (*Empiristen*), who claim that cognitions derive from experience (like Aristotle and Locke), and noologists (*Noologisten*) – called

rationalists (*Rationalisten*) in later texts – (like Plato and Leibniz), who hold that cognitions are independent from experience and have their source in reason (Kant 1900, III: A852–56/B880–84; XX: 275).

While the very roots of the standard sense of empiricism are found in Kant, the whole narrative took full shape in the works of German Kantian historians. Wilhelm Gottlieb Tennemann (1761–1819) applied rigidly the opposition between empiricism and rationalism to the whole early modern period and presented Kant’s critical philosophy as its synthesis and endpoint. By associating philosophical systems with “national characters” in his *Geschichte der Philosophie* (12 vols., 1798–1819), he described empiricism as a typically British phenomenon – having its very first origins in Francis Bacon and Thomas Hobbes (1588–1679), and later continued by Locke, Berkeley, and Hume –, around which he places British and non-British peripheral figures (Pierre Gassendi (1592–1655), Claude Guillermet de Bérigard (1578–1663), Jacob Böhme (1575–1624), and Edward Herbert of Cherbury (1583–1648)) (Micheli 2015).

This “epistemological paradigm,” focusing the history of philosophy on the problem of knowledge (Haakonssen 2006), was gaining circulation beyond the limits of the German-speaking world and finally became dominant in the Western philosophical canon in the first decades of the twentieth century (Vanzo 2016). Since then, it has been the most commonly adopted framework for interpreting the early modern period and impacted on the representation of philosophical currents of later times. Nineteenth-century philosophy has been usually represented in terms of “national philosophies,” by replicating the earlier tripartite division “British empiricism, Continental rationalism, German critical philosophy” now under the labels “Franco-British empiricism/sensualism, French spiritualism, German idealism” (Antoine-Mahut and Manzo 2019). Later, in the twentieth century the traditional dichotomy rationalism-empiricism was often reinforced by being considered as an antecedent of the divide between continental and anglophone philosophy in contemporary philosophy.

Revisionism and Critical Approaches

Although some historians still maintain the main lines of the traditional view of empiricism as a sort of normative idealized type (e.g., Bennett 2001, Priest 2007), since the 1980s the understanding of empiricism became more nuanced and reformulated in the wake of the reassessment of the dichotomy empiricism – rationalism (Norton 1981; Loeb 1981; Cottingham 1988; Woolhouse 1988; Ayers 1998; Haakonssen 2006; Rutherford 2006). Newer historiographical approaches attempt to avoid both anachronism and a Eurocentric reduction of the entire early modern period to the problem of knowledge. Instead, they aim at describing the complexities and the great diversity of attitudes and doctrines toward experience, reason, and scientific method maintained by early modern actors. The canonical philosophers are no longer seen as members of opposite and rigidly closed parties that teleologically moved toward the conformation of an ideal internally consistent system. The national allegiances are dismissed as untenable historiographical clichés, and the epistemological paradigm of early modern philosophy constructed by this narrative has been challenged. Empiricism is characterized in far more flexible and complex terms by focusing on actors' discourses and practices, by recognizing their various historical debts and affiliations, and by going beyond the narrow limits of theoretical philosophy in order to incorporate into the analysis the practices and developments of several disciplines of natural science.

The once oversimplified oppositions and affiliations, as well as the “myth of British empiricism” (Norton 1981), are severely undermined by newer studies. On the one hand, continuities of empiricism with Cartesianism are found in a great number of Cartesian natural philosophers across Europe (e.g., Robert Desgabets (1610–1618) and Henricus Regius (1598–1679)), who argued that observation, experience, and/or experiment play a key role in knowledge acquisition (Nyden and Dobre 2013). On the other hand, the association of eighteenth-century empiricism with Newtonianism has been relativized, not only due to the fact that the plurality of readings of Newton

entailed several receptions, but also because some forms of empiricism were developed by Italian, French, Dutch, and German traditions (Biener and Schliesser 2014; Bodenmann and Rey 2018). Thirdly, the tradition of experimental philosophy undoubtedly played a major role in the conformation of empiricism (Gaukroger 2014; Feingold 2016). Thus, the several forms of empiricism that were developed across the period are rather an outcome of the exchange, dialog, and interaction between several traditions, at a time in which several disciplines (natural philosophy, medicine, chemistry, psychology, etc.) were establishing the rules of their empirical methods, and their patterns for observation and experimentation (Wolfe 2010; Crignon et al. 2013; Nyden and Dobre 2013; Bodenmann and Rey 2018). In addition, to distinguish several kinds of empiricism has proved helpful to obtain a comprehensive description of empiricist attitudes to be found in history (Garrett 1997, 29–38; Lowe 1995, 32–33).

An intellectual reappraisal can have two different goals. On the one hand, it can attempt at giving up long-established categories and replacing them by other mutually exclusive distinctions. Or, on the other hand, it can just attempt at not idealizing the categories any longer, and consequently redefining them more properly to obtain a better understanding of the past. This second option seems historiographically more plausible for two reasons. On the one hand, because conceptual history shows that long-established concepts, such as empiricism and many others, tend to remain in our discourses despite the criticisms they may receive (Bodenmann and Rey 2018). On the other hand, because it makes sense to keep the analytic category empiricism alive and give it an adequate content to understand the way in which some early modern thinkers perceived themselves as taking part in a certain tradition and to describe the oppositions and allegiances about the theory of knowledge that indeed took place in history.

Hence, it seems that a suitable *starting point* for interpretation consists in placing empiricism within a larger historical naturalistic tradition dating back to ancient atomism that subordinates reason to experience for the acquisition of

knowledge of the natural world and the formation of the concepts. Likewise, rationalism can be understood as taking part in a tradition of Platonic theological lineage, maintaining that the principles ruling the order of the world are evident to human reason (Ayers 2007; cf. Lennon 1993). However, such an initial hermeneutical framework should avoid two mistakes that were present in the earlier dominant account: antagonism and binarism. In the first place, the historiographical focus on the “battle,” i.e., the agonistic character of the relation of empiricism to rationalism, is one of the main causes that contributed to transforming those labels into normative clichés and essentialized ideal types. In the second place, it would be a mistake to presuppose that the great diversity of the early modern period should be reduced to two mutually exclusive possibilities, and that there were no other options. Only a hermeneutical perspective that avoids the prejudices of antagonism and binarism allows for a better understanding of the varieties of empiricism as well as the eclectic and heterogeneous stances existent in the period. It also makes it possible to claim that empiricist philosophers could perfectly endorse rationalist theses without being untrue to their theoretical epistemic commitments. In that sense, to replace the standard narrative by applying actors’ categories like “experimental philosophy” and “speculative philosophy” (as Anstey 2005 has proposed) may be helpful to understand some discussions maintained by certain figures in the seventeenth and eighteenth centuries, particularly around the Royal Society. But if they are employed from a binarist and antagonist point of view, they run the risk of reproducing the drawbacks of the traditional account.

First Representatives of Early Modern Empiricism

As we have seen, the post-Kantian standard narrative has considered British Francis Bacon and Thomas Hobbes as the very first exponents of early modern empiricism. As it has been said, the genetic statement is the reverse of innatism. But it is worth noting that what anti-innatism

rejects is the nativism of mental contents and not of faculties, operations, dispositions, or principles of association of the human mind.

Once this clarification is made, the stance of Francis Bacon does not offer enough evidence to conclude beyond any doubt that he was a strong supporter of the genetic statement. He was likely familiar with the widespread dictum, often attributed to Aristotle, *nihil est in intellectu quod non fuerit in sensu* (there is nothing in the intellect/mind which was not first in the senses) (Cranefield 1970; Wolfe 2018). And some traces of this principle might be found in his claiming that the process of cognition begins in the senses, “the doors of the intellect” through which the images of particular things enter into the human mind (Bacon 1857–1874, 1: 494–495, 2004, 342–343). Likewise, he says “of those things which have not offered themselves to the sense at all there can be no imagination, not even a dream” (Bacon 1996 VI 96–99). However, this does not entail an explicit denial of the innatism of mental contents. As for the justification of knowledge, being the most famous defender of experimentalism at the first stage of the early modern period, Bacon believed that knowledge of the natural world should be justified *a posteriori*. A naïve reading would consider him as sided with the “ants” of his famous simile. But he seems to have thought that the failures of empirics/ants were even worse than those of the rationalists/spiders (Bacon 2004, 100–101). In fact, he affirms that the best option is the one represented by the bees, who wisely combine “the experimental and the rational faculties” of the mind, both of which are equally valuable and necessary to obtain true knowledge. In sum, in Bacon’s case, although the epistemic statement can be found, the genetic statement is not strong enough as to consider him the “founder of early modern empiricism.”

Hobbes explicitly endorses the genetic statement by adopting the dictum *nihil est* and by developing a detailed theory of perception that not only denies innatism of mental contents, but also engages with a full materialist description of the cognition process (Hobbes 1996, §1–2). Unlike Bacon, Hobbes is not an experimental philosopher and he does not consider that the ultimate justification of every kind of science

can be *a posteriori*. Geometry is the science providing a model for science. He believes that evidence of universal propositions cannot be obtained by recourse to sense and memory, because they are fallible and only provide information of particular instances. Only reason can reach universal conclusions by its capacity of naming particulars, combining names and constructing chains of deductions in a computational way (Hobbes 1996, §9). For that reason, mathematics and civil science – that is, sciences that make their own objects – are in a better position to attain certainty than natural science – a science that departs from the observations of their objects and must infer their universal causes. Experience plays a role in justification but is unable to provide evidence for universal propositions (Sorell 1986).

Long ago it was noticed that before Hobbes, the French Pierre Gassendi (1592–1655) fully embraced the two empiricist statements as understood by the traditional narrative. Gassendi adopts an empiricist explanation of the origin of ideas and develops a theory for justifying knowledge that, among other methods, combines hypothesis with deductions. Hypothesis are the empirical starting points of science and are to be maintained as long as they are warranted by experience. Deduction provides evidence for empirical knowledge-claims, but since the ultimate basis of cognition is probabilistic, we never can reach certainty about the natural world. Thus, Gassendi constructed an empiricist epistemology that, rejecting dogmatism, promoted a moderate scepticism (Fisher 2005).

Empiricism and British Canonical Philosophers

When considering who the main exponents of the empiricist tradition are, the triad Locke, Berkeley, and Hume is inescapably mentioned. The first two parts of this section (“[The Origin of Ideas](#)” and “[Knowledge Justification](#)”) will specify and clarify the sense in which Locke and Hume can be classified as empiricists, considering the extent to which their philosophical proposals fit in the

genetic and the epistemic statements. It will be shown that in their philosophies there are elements that belong to both the so-called rationalist and empiricist traditions, and their relative weight within their thought is not in every topic on the side of what is habitually understood as empiricism. This can be considered as evidence favoring a more nuanced and less antagonistic view of what these two traditions stand for. The third part of the section (“[The Place of Berkeley](#)”) will provide a short review of the reasons why Berkeley does not fit easily in the category empiricism. In line with Reid’s purposes, Berkeley’s place between Locke and Hume makes sense as a link in the chain that inevitably leads to skepticism, but the legitimacy of his inclusion becomes challenged once one realizes that skepticism was one of the main targets of Berkeley’s criticisms. For that reason, Berkeley’s stance deserves a separated consideration.

The Origin of Ideas

It can be affirmed that Locke’s case fully fulfils the genetic statement. Book I of the *Essay concerning Human Understanding* (1690) is dedicated in its entirety to rejecting the existence of innate ideas. Locke makes it clear that what he is refuting is the possibility that there are specific contents or principles that are universally imprinted in the minds of men, both of speculative character – e.g., the principle of noncontradiction (E 1.1.4) – and of moral character – e.g., “To do as one would be done to” (E 1.2.7). Once Locke refutes the possibility that our mind contains certain original contents stamped upon it, he must then offer an alternative explanation regarding the origin of ideas. Hence, he postulates his famous account of the mind being like a blank sheet, empty of characters, in the sense of empty of ideas, which acquires its materials from experience (E 2.1. 2, 2.11. 17). The important thing then is to determine what is meant by “experience.”

Locke is often considered to understand experience in terms of ideas, which he defines as “whatsoever is the *object* of the understanding when a man thinks” (E Intro 8, see 2.1.1). However, he defines experience as “our observation employed either, about external sensitive objects,

or about the internal operations of our minds perceived and reflected on by ourselves” (E 2.1.2). It can be noticed that Locke does not affirm that the materials of thought – i.e., ideas – constitute experience themselves, but rather come from experience, understood as the action of observing sensible external events and internal operations of the mind. Locke also emphasizes that the process of producing ideas is gradual (E 2.1.6-8), so time and familiarity with what we observe are essential in order for the mind to be able to recognize, classify, and use them in reasoning. Therefore, rather than proposing a mere identification between experience and ideas, Locke links the former with certain features that give rise to ideas such as observation, temporal extension, and familiarization, which involve the ability to recognize, classify, and systematize the acquired contents.

It has been believed that Hume is urged as Locke to fight against the possibility of the existence of innate knowledge and, therefore, adheres to his position (Stroud 1977, 23–24, Dicker 2002, 2). This is supposed to be expressed in the copy principle, by means of which Hume argues that, in its first appearance, every simple idea is identical to and preceded by a simple impression (T 1.1.1.5). However, Hume does not seem to show as much urgency as Locke about it and, although he states that the doctrine of innate ideas has been refuted (T 1.3.14.6), he also points out that the arguments of anti-innatists can be reduced to the statement that ideas are preceded and caused by impressions, emphasizing that what distinguishes them is the strength and vivacity of the latter (T 1.1.1.12). In the *Abstract* (1740), he adds that “it is evident our stronger perceptions or impressions are innate, and that natural affection, love of virtue, resentment, and all the other passions, arise immediately from nature” (ABST 6). This means that Hume’s distinction between impressions and ideas leads him to deny the innate character of ideas only but not necessarily that of impressions, while for Locke there is no innate mental content at all. Hume reaffirms this position in *An Inquiry concerning Human Understanding* (1748) when he defines innate as “what is original or copied from no

precedent perception,” which allows him to state that “all our impressions are innate, and our ideas not innate” (EHU 2.9n). Therefore, it is less than obvious that Hume must be lined up with Locke’s radical anti-innatism, much less that simple impressions of sensation can be identified with simple ideas proposed by his predecessor.

It can be noticed, then, that the genetic statement cannot be interpreted equally when applied to Locke than to Hume. In the first place, that is due to Hume’s particular interpretation of innatism, which is not understood in terms of from anything else. Moreover, if this definition is applied retrospectively to Locke’s thinking, he can even be labeled as an innatist, because he considers that both sensation and reflection are original sources of ideas (E 2.1.4). Secondly, another important difference between Locke and Hume is the latter’s skepticism about the origin of sensory impressions, which arises “in the soul originally, from unknown causes” (T 1.1.2.1, see 2.1.1.1, EHU 12.11). The possibility of establishing a causal connection between impressions of sensation and their supposed extramental sources is out of human reach, since “we may observe a conjunction or a relation of cause and effect between different perceptions, but can never observe it between perceptions and objects” (T 1.4.2.47, see EHU 12.12). Hume does not appeal to Divine guarantee in order to ensure correspondence between simple ideas and the qualities of the external material objects that cause them, as Locke does (E 2.30.1, 2.31.2, 2.32.14). That is why the extent of his skepticism about the possibility of getting to know the outside world is deeper than in Locke.

As in the case of Locke, experience involves in Hume observation, that is, a deliberate act by which the mind focuses its attention on those phenomena that arise before the senses or in the mind itself. It also involves a temporal dimension, that is, repeated observation of objects that leads us to be acquainted with their possible qualities, causes, and effects (EHU 4.6), which in turn imply the mental capacity to organize the objects observed in classes and recognize types of relationships between them. This capacity allows us to form a “collection” of cases (EHU 8.7) that

remain in the mind and operate as the foundation or justification of our beliefs. It allows us to understand and discern each event in our environment and to make causal inferences (EHU 5.4), which by definition take us beyond what is present to sense perception (EHU 5.3).

Finally, to understand experience in terms of sensation only has often led historians to assess that within the empiricist tradition the mind plays a passive role, at least in the first steps of knowledge, since its function would initially be restricted to receiving sensible stimuli (e. g., Taylor 1964; Mounce 1999, 24; Hatfield 2014; Glenney and Silva 2019). Therefore, it is also necessary to review this point to offer a more accurate view. Locke argues that “in bare naked perception, the mind is, for the most part, only passive, and what it perceives, it cannot avoid perceiving” (E 2.9.1, see 2.1.25, 2.22.2). However, this quotation does not constitute enough evidence to infer that the mind or, more specifically, perception, is passive. Locke himself acknowledges that the notion of perception has several meanings. In a broad sense, it is equivalent to thinking in general, understood as the operations the mind exerts on its ideas, “the mind is active; where it, with some degree of voluntary attention, considers anything” (E 2.9.1). Later on, he distinguishes between three types of perception: the perception of ideas in the mind, the meaning of signs, and the agreement or disagreement between ideas (E 2.21.5). Specifically, with respect to the first type of perception, he argues that in order for a bodily affection to become an idea, it should be noticed by the mind, “wherein consists of actual perception” (E 2.9.3). How should mind’s passivity be understood, then? First, it is possible to regard it as an aspect of perception that is linked to the inevitability of recording what is present to the mind: there is no stimulus that reaches the mind without being noticed by it. This argument, in turn, is grounded in Locke’s anti-innatism: there is nothing that is in the mind that cannot be perceived (E 1.1.5). Second, it is also possible to connect this sense of passivity to involuntariness, given that in E 2.9.1 Locke speaks of mental content that is not voluntarily sought by the mind, but bursts into

consciousness, so to speak, and can only be attended to. Finally, passivity can be explained by the fact that the mind cannot create or destroy any simple ideas. Once such ideas are in the mind, “the understanding can no more refuse to have, nor alter when they are imprinted, nor blot them out and make new ones itself” (E 2.1.25). It is possible that Locke appeals to the mind’s passivity as resource to guarantee that simple ideas are real, adequate, and true, since if mental activity is minimized when perceiving the qualities of objects, the margin of error is also reduced and the correspondence between these qualities and simple ideas is protected from the risks of free will. In addition, it should be noted that Locke himself points out in E 2.9.1 that the mind is “for the most part” passive, and not completely passive.

Hume does not refer to the passivity of the mind or the allegedly passive nature of perception in his writings. As it has been shown, the origin of perceptions is an issue that remains undefined and surrounded by a veil of skepticism. The mind can only perceive its own contents and can never establish a reliable connection between them and their supposed external causes. There is a single passage where Hume mentions something that could be linked to the pretended passivity of the mind regarding sensory impressions: “When both the objects are present to the senses along with the relation, we call this perception rather than reasoning; nor is there in this case any exercise of the thought, or any action, properly speaking, but a mere passive admission of the impressions thro’ the organs of sensation” (T 1.3.2.2). At first glance, it is possible to understand that Hume openly states that sensitive perception does not involve any mental activity, other than the mere admission of what is presented to the senses. However, as in the case of Locke, Hume offers a broad and explicit definition of perception, which he openly associates with action: “the mind can never exert itself in any action, which we may not comprehend under the term of perception and consequently that term is no less applicable to those judgments, by which we distinguish moral good and evil, than to every other operation of the mind” (T 3.1.1.2, v. T 1.2.6.7). Moreover, within

the actions that Hume considers as perceptions in T 3.1.1.2, he lists sensations such as seeing and listening. In short, textual evidence leads us to conclude that both Locke and Hume predominantly conceive perception in an active rather than passive sense (see Yolton 1963, 54–55, 65–67; Mackie 1976, 210; Lososky 2001, 72–75; Biro 2009, 48).

Knowledge Justification

When addressing the issue of knowledge justification, it is important to keep in mind that Locke does not use the distinction *a priori* / *a posteriori*. Hume generally opposes abstract or *a priori* reasoning to inferences based on experience (EHU 4.6–10, 4.18, 7.15n13) and does not use the term *a posteriori* in his theory of knowledge. Both authors consider knowledge as the result of a mental process where raw material supplied by means of experience is as relevant as the operations that the mind exerts on them. Therefore, experience is a necessary but not sufficient condition to elaborate knowledge. It plays an important role in the production of ideas, and out of these materials, reason produces knowledge of different kinds, some of which can be justified without having recourse to experience at all.

Locke defines knowledge as the perception of the relationship of agreement or disagreement between ideas (E 4.2.1). Within perception, Locke distinguishes various degrees of clearness: intuition, demonstration, and sensation. Intuition reaches the highest degree of clearness because it implies the immediate apprehension of the relationship between ideas; hence it is the most certain knowledge that the human mind can reach (E 4.2.1). Demonstrative knowledge follows in clearness, since in this case the mind does not perceive agreement or disagreement between ideas immediately, but through other ideas (E 4.2.2–7). Locke notes that usually mathematics is considered as the only realm subject to intuitive or demonstrative knowledge. However, he believes that intuition and demonstration are not an exclusive privilege of number, extension, and figure, but that “it may possibly be want of due method and application in us, and not of sufficient evidence in things, that demonstration has been

thought to have so little to do in other parts of knowledge” (E 4.2.9). The mind can potentially perceive the agreement or disagreement between ideas immediately or mediated by other ideas in any field of knowledge. For example, Locke considers that moral ideas are capable of demonstration as much as Euclid’s axioms (E 4.3.18). What ultimately prevent us from reaching intuitive and demonstrative knowledge in all areas are our cognitive limitations rather than the nature of the objects to be known.

For Locke, knowledge consists of an intramental activity, independent of the real existence of the content of ideas – therefore it can be claimed to be *a priori*. Mathematicians’ statements about the quadrature of the circle are independent of the existence of any circle in the world, just as moral discourses and definitions are independent of men’s lives; so in both areas it is possible to reach certainty without recourse to experience, since it is knowledge that is constructed entirely from mental models or real essences to which we can have full access (E 4.4.8). But what happens with sensation? It is not defined as the perception of a certain kind of relation between ideas but as the perception of the relation between ideas and particular external existences (E 4.1.7). Nevertheless, Locke classifies it as knowledge and not as opinion (E 4.2.14, 4.11.3). What leads him to do so? Within his philosophy, there is no place for skeptical arguments that might call into question whether the ideas we have come from a real object, a dream or are an outcome of our fantasy (E 4.2.14). Therefore, the perception we have that certain ideas come from particular external objects can reach a degree of certainty enough to constitute a case of knowledge, and we can be sure that the senses do not err in the information they provide us regarding the things outside our minds (E 4.11.2).

Intuitive and demonstrative knowledge, being independent of the existence of the objects to which ideas represent, is universal in nature. On the other hand, knowledge about the existence of what is represented by ideas is about particulars and is tied to the actual existence of objects that affect the senses in the present moment or that are

clearly remembered (E 4.3.21, 4.11.9, 4.11.11 4.11.13). This latter kind of knowledge can be considered to be justifiable *a posteriori*, since there is no way to verify the existence of particular objects and beings but through the affections their qualities produce in the organs of sensation.

Hume makes a distinction between two fields of knowledge: relations of ideas, and matters of fact and existence (EHU 4.1). These fields are similar to Locke's distinction between intuition and demonstration on one side, and sensation on the other. The meaning of intuition and demonstration in Hume is very much the same that can be found in Locke (T 1.3.1.2, T 1.3.7.3), but Hume restricts intuitive and demonstrative knowledge to the scope of the relations of ideas, while Locke argues that there are matters of existence that can be known intuitively, such as our own existence, or demonstratively, as the existence of God (E 4.9.1). Hume limits relations of ideas to mathematics. Regarding matters of fact, he argues that in this area knowledge is not limited only to what is present to the senses or is clearly remembered, but also and fundamentally to events and objects that are not present before the senses nor can be found in memory records. The means by which we get to know about these kind of events and objects are causal inferences (EHU 4.3-4), although such inferences do not reach the degree of certainty of intuitive and demonstrative knowledge but counts only as opinion.

Apart from those areas in which certainty can be attained, both philosophers recognize that there are other occasions where the mind cannot recognize without a doubt the relationship between two ideas or objects, but can only state it with a greater or lesser degree of probability, from what has been frequently observed to happen in most cases (E 4.15.1, 4.16.6-9, 4.17.17; T 1.3.6.7). Both agree that probable knowledge is *a posteriori*, that is, achieved entirely through sensation and experience, and they prefer to call it opinion or belief rather than knowledge (E 4.15.3; T 1.3.7.3-5), even though they have different conceptions of belief. For example, Locke points out that the possibility of determining the coexistence of the qualities that make up particular substances only reaches the degree of probability, because we can

never fully account for all of them, nor is there a necessary connection or inconsistency between most of these qualities that could be discovered *a priori* (E 4.12.9-10). In this case, all we can learn about it is by means of trials, observations, and natural histories (E 4.12.12). This is a kind of knowledge always capable of being reviewed, rectified, and expanded; it is unfinished by nature. Hume considers that all causal inferences about matters of fact can only reach the degree of probability because this kind of knowledge, unlike the strictly sensitive one about the existence of particular objects mentioned by Locke, implies an inference that connects the present testimony of the senses or memory with something that is absent and not immediately perceived (T 1.3.2.3 SB 74), which is supported by previous experience of its constant conjunction (EHU 4.6). Although there are conjunctions that have a high degree of uniformity, within matters of fact it is always possible that an opposite case occurs, which weakens the constancy of that conjunction (E 4.2). One of Hume's great contributions to the history of philosophy is to review the nature of inferential knowledge about questions of fact and existence – a topic that Locke does not deal with –, which leads him to his famous analysis and criticism of the notion of causality, and the formulation of the problem of induction.

In sum, it can be argued that Locke believes there is a core of truths that are independent of experience, within which mathematics and moral propositions can be counted. In addition, he considers the real existence of particular material objects as a kind of knowledge, even though it is reached *a posteriori*. In the case of Hume, knowledge is strictly identified with the truths based in intuition and demonstration, which by definition are independent of experience, within which only mathematics is counted; while everything that falls within matters of fact is known empirically and only reaches the degree of probability.

The Place of Berkeley

Of all philosophers traditionally considered as British empiricists, George Berkeley is beyond any doubt the one who most notably does not fit easily into this category (there is a controversy on

this matter, see Bracken 1974; Loeb 1981; Ayers 2005). Although he shares some points with Locke and Hume regarding epistemic matters, his metaphysical and epistemic concerns are quite opposite to theirs.

On the one hand, Berkeley certainly maintains the genetic and the epistemic statements. Although in a passage of his posthumous *Philosophical Commentaries* or *Notebooks* he seems to endorse innatism (“There are innate Ideas i.e., Ideas created with us” Berkeley 1948–57, I § 645, 79), his most consistently maintained stance is openly anti-innatist. Senses are required to have ideas since “if it were not for them the mind could have no knowledge no thought at all” (Berkeley 1948–1957, I: § 539, 67; cf. ib. § 318, 39; II: § 1, 41). As for the justification of knowledge, Berkeley maintained that cognition can be achieved either by intuitive or by demonstrative reasoning, admitting this distinction in a similar way to that of Locke’s, but rejecting its skeptical connotations (Berkeley 1948–57, II: § 230; Ayers 2005). These views evidently make him close to Locke, whose philosophy Berkeley read attentively. But, on the other hand, Berkeley considered that Locke’s philosophy involved risky consequences, for it inevitably tended to skepticism/skepticism and atheism. Those unacceptable stances resulted from a wrong metaphysical starting point: the assumption that the material substance exists. Thus, although he shares some epistemic empiricist theses with Locke, it cannot be said that he was part of the same “philosophical club” as him. To the contrary, Berkeley’s main philosophical goal was precisely to counter the skeptic and atheist consequences of Lockean theses.

In addition, Berkeley thinks of the distinction between minds and material bodies in Cartesian terms. By assuming that a gap separates minds from bodies, he argues that ideas of the mind are unable to resemble the material bodies that they are supposed to represent. Given the fact that an idea cannot resemble but an idea, Berkeley thought that in order to secure the possibility of certain knowledge, ontology should be restricted to minds and ideas perceived by minds. Thus, Berkeley’s philosophy, on the one hand, replaced the metaphysics that affirmed the existence of

matter by an idealism according to which there only exist ideas and minds. On the other hand, Berkeley rejected representational or indirect realism and maintained, instead, a phenomenalist approach: what we know are ideas, i.e., phenomena occurring in minds.

The permanent existence of the objective world can be secured only if an infinite divine mind is postulated. For that reason, in contrast to Locke’s and Hume’s philosophy, God plays a central role in Berkeley’s idealism. God is the mind in which all the ideas constituting the objective and intersubjective world are present. Otherwise, ideas would perish whenever a finite mind stops thinking on them. The sky, the houses, and the other minds would exist intermittently as mental items of human minds. In addition, God orders objective ideas in a harmonious and coherent way. We call “laws of nature” those ideas that we perceive as regularly – but not necessarily – connected. The succession of these ideas can be changed if God’s will decides to do so. In this approach, we can see not only the traces of what would be part of Hume’s analysis of the idea of causality but also the proximity of Berkeley’s thought to Malebranche.

In sum, Berkeley’s adherence to genetic and epistemic statements connects him to a certain degree to Locke and Hume. But none of these statements took center stage in Berkeley’s concerns: they play a secondary role in his proposal. His robust commitment to defend God’s existence and criticize skepticism and atheism are marks linking him with Malebranche and Cartesianism. That is why Berkeley cannot be considered simply as an empiricist or a rationalist. His thought does not perfectly match with either of these labels. This is one of the many instances indicating that the early modern philosophy and science should not be reduced to two antagonistic and mutually exclusive trends.

Empiricism, Skepticism, and Materialism

An important derivation from the traditional account is the association of empiricism with two major philosophical and scientific trends:

skepticism and materialism. The link of empiricism with skepticism was early established by Reid in the eighteenth century. He not only constructed the lineage Locke-Berkeley-Hume, but also joined them together with Descartes and Malebranche – who for many historians are on the side of the rationalists – in what he refers to as the “ideal system” or the “Cartesian system.” This means that the complete sequence, as it appears in Reid’s *An Inquiry into the Human Mind* (1764), does not refer to either the origin of knowledge or its method of justification. Reid argues that these authors have in common their defense of a representationalist theory of knowledge that he summarizes in the motto: “nothing is perceived but what is in the mind that perceives it” (Reid 2010, 4). And Reid’s concern about representationism is that it inevitably leads to universal skepticism. The link of empiricism with skepticism was reinforced, from a very different perspective, by Kant’s and post-Kantian narratives and still remains in most accounts of the early modern period. In fact, as we have seen, many, but not all, of the most famous representatives of empiricism adopted skeptical stances.

The association of empiricism with materialism took place particularly during the French eighteenth century and was directly related to the reception of Locke’s philosophy in France. The first significant reception was constituted by the “sensualism” of Étienne Bonnot de Condillac (1714–1780) that reworked Locke’s theory of ideas. Although Condillac was not a materialist, somehow his work played as a stimulus to exploring the consequences of the Locke’s “thinking matter” hypothesis. From then on, some Enlightenment philosophers explained the perception and cognition process in physiological terms, by arguing that the mind is as material as the body (Julien Offray de La Mettrie (1709–1751), Denis Diderot (1713–1784), Claude-Adrien Helvétius (1715–1771), Paul Henri Thiry d’Holbach (1723–1789), etc.). This materialistic ontology, which departed from an empiricist theory of knowledge, entailed important moral and political consequences and in some cases was attached to atheist stances (Yolton 1983; Wolfe 2018).

Cross-References

- ▶ [Cartesianism and Experimental Philosophy](#)
- ▶ [David Hume](#)
- ▶ [Empirics in Early Modern Medicine](#)
- ▶ [Experimental/Speculative Distinction](#)
- ▶ [Francis Bacon](#)
- ▶ [Locke’s Philosophy](#)
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- ▶ [Newtonianism](#)
- ▶ [Reason and Experience in Women Responses to Descartes and Locke](#)
- ▶ [Skepticism in Early Modern Thought](#)

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