

Naturalised Realism in the Metaphysics of Science: Hume’s “Mitigated Scepticism” on Causality and Reality

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Abstract: The inception of modern science, in the 17th century, was accompanied by epistemological analyses that see its foundation as laid on observation and experiment — a stance often regarded as excluding (or, at least, devaluating) metaphysics, especially in the English-speaking world. Qualms about metaphysics were already noticeable in Locke’s *Essay* (1690), and were supposedly deepened by Hume, in the following century. For almost two hundred years, Hume’s philosophy was regarded as radically sceptical concerning metaphysics generally, but particularly about causality and the very existence of an external, objective reality. In this paper, we argue, following a more recent interpretive vein in Hume’s scholarship, that Hume’s scepticism about these basic metaphysical issues was effectively “mitigated” (in his own words) by his pioneering adoption of a form of naturalised realism. According to it, belief in both causal relations and in the external world is taken as resulting from the natural operations of the human mind and, in this condition, as being justified, in an epistemologically non-ordinary sense of this notion. As a consequence, epistemology was seen by him as an undertaking akin to the natural sciences, both employing similar empirical methods and metaphysical hypotheses to explore the mind, in the former case, and the physical world, in the latter. Thus, instead of interpreting Hume as one of the forerunners of the anti-metaphysical trend within empiricism, we believe that his wide-ranging project of instituting a “science of man” made some room for metaphysics, as cultivated within the same fallibilistic, naturalistic approach of empirical science itself.

Keywords: metaphysics of science; naturalised epistemology; David Hume; causation problem; external world scepticism.

1. Introduction

Understanding will come, therefore, only if we allow ourselves to indulge in a little metaphysics, only if we ask ourselves what “non-local” theories tell us about the world. This is more than a little frightening to those of us who are the metaphysically repressed children and grandchildren of the Viennese diaspora. But duty calls, so sin, if sin we must. (Don Howard, 1989, p. 225).

Although modern and contemporary science emphasises the empirical method for producing knowledge, there are several metaphysical questions underlying scientific practice

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that date back to Antiquity, and were renewed with particular emphasis in the modern period. Two of the most basic of them are: 1) Does an “external” world exist, in the sense that the physical bodies studied by natural science have a reality independent of being observed? 2) If so, are there causal relations between the bodies that make up this physical world, in the sense of metaphysical links that would be responsible for the occurrence of events according to regular laws? Although philosophers interested in natural philosophy (the current natural sciences) were aware of these issues in the 17th and 18th centuries — and in many cases discussed them explicitly —, with the advancement of science, especially from the 19th century onwards, they were usually ignored by the scientists, precisely because they are metaphysical, *and therefore* no longer belonged to the scope of science. However, these questions unexpectedly resurfaced in the realm of science in the 20th century, due, particularly, to certain theoretical characteristics of quantum physics.

Some of the founding fathers of quantum physics were led to deny the objectivity of physical knowledge, or to propose that there are physical events entirely lacking causes. In his reply to the Einstein-Podolsky-Rosen 1935 paper (EPR, 1935), Bohr claimed, for instance, that “the *finite interaction between object and measuring agencies* conditioned by the very existence of the quantum of action entails [...] the necessity of a final renunciation of the classical ideal of causality and a radical revision of our attitude toward the problem of physical reality” (Bohr, 1935, p. 697; italics in the original). Such anti-realistic views rapidly became dominant, forming the so-called “Copenhagen interpretation of quantum mechanics”. Einstein and Schrödinger were among the few dissidents. The heated debate on such philosophical issues became famous, and lasted for several decades, with no clear resolution (Brown, 1981). Unexpectedly, however, this philosophical debate opened up new areas of scientific research in physics, when new actors entered in scene — notably David Bohm, with his proposal of a “causal interpretation of quantum mechanics” (Bohm, 1952), and John S. Bell, with his proof that “causal”, or “deterministic” theories such as Bohm’s, must be nonlocal (Bell, 1964). The subsequent, very complex experimental tests of the Bell inequalities belatedly led to a Nobel Prize, in 2022.³ Thus, independently from other classical reasons, philosophers *and physicists* appear now entirely justified in rekindling their interest

³ There is a vast literature on these issues. Some of it is discussed in depth in Chibeni (1997b). Among the classical reviews of the literature, we mention, for instance, D’Espagnat (1983). An insightful analysis of the links between metaphysics and the new results in the foundation of quantum physics is provided by Michael Redhead in a short, but insightful book, *From Metaphysics to Physics* (1995). Another influential text on these links is Shimony “Search for a worldview which can accommodate our knowledge of microphysics” (Shimony, 1989). It was in this paper that he provocatively introduced the seemingly paradoxical notion of an “experimental metaphysics”.

in the metaphysical issues of causality and reality. However, instead of delving into the details of the many metaphysical issues specifically related to the foundations of contemporary physics, in this paper we will examine the two above-mentioned issues that were of paramount interest to the philosopher-scientists promoting the advent of modern science. In particular, we will examine the positions assumed by David Hume, not only because he is one of the greatest modern philosophers, but also because, ironically, he still is widely believed to have been one of the main precursors of the *anti*-metaphysical tide that reached its peak within the logical positivist movement, in the early 20th century.⁴

For nearly 250 years, Hume was regarded as a radical sceptic about those two metaphysical questions (among others), and therefore as someone who had *not* contributed positively to philosophy in general, especially to the epistemology and metaphysics of science. In this traditional interpretation, Hume's philosophy is seen as essentially "negative", in the sense of dismantling classical conceptions of philosophy, especially regarding causation, without proposing any substitute or alternative route. However, in the second half of the past century, a ground-breaking reinterpretation gained prominence among scholars: the naturalist reading of Hume's epistemology. It was first introduced in two largely overlooked papers published by Norman Kemp Smith in *Mind*, which were later expanded in his 1941 book. The papers, suggestively called "The Naturalism of Hume" (parts 1 and 2), anticipated many decades of the use of the word 'naturalism', which was to become widely discussed as a result of the pioneering proposal of Willard Quine, in his epoch-making "Epistemology naturalized" (1969).⁵ According to the naturalistic reading of Hume's epistemology, his empiricism acknowledges — *but circumvents* — scepticism on causation and reality by rendering it *irrelevant* to empirical inquiry involved in science (including his "science of man").

Our objective in this paper is to argue that through the original adoption of a perspective we would nowadays call "naturalist", *Hume effectively paved the way for considering that the natural sciences do indeed rest on an underlying metaphysics*, and that *the classical rejections of metaphysics in the name of empiricism become largely neutralised in this perspective*. Before getting into details, we warn the reader that this article is *not* a

⁴ In listing their predecessors in the fields of "positivism and empiricism", the logical positivists included Hume (see Hahn, Neurath and Carnap, 1929, p. 304), well at the opening of the list. Readers inattentive to Hume's own texts have, then, a-critically accepted the idea that the Hume shared with the logical positivists the notorious aversion to metaphysical issues whatsoever.

⁵ For an abragent view of naturalism in epistemology, see Abrantes (1993a, 1993b, 1998), Sousa (2017) and Rysiew (2020).

comparative analysis of the contrast between the traditional interpretation of Hume's philosophy with the naturalistic interpretation. Neither is it an exegetical reconstruction of his texts, but rather an attempt to show how a specific, historically neglected version of naturalism can contribute to addressing two of the deepest problems in the metaphysics of science: the problem of causation, and the problem of the existence of the external world. Our choice of these two *loci* of analysis is motivated not only by their historical importance, but also, and mainly, by the fact that they are logically prior to the more specific issues related to the metaphysics of science, typically associated with historically situated theories of science.⁶ And, although Hume himself dedicated close attention to a relevant sample of such specific metaphysical issues — as the nature of space and time, the distinction between primary and secondary qualities, the existence of action-at-a-distance, etc.⁷ — we will leave these discussions aside, focusing on the two basic problems in devising an appropriate, general metaphysical background on which these specific issues can be discussed. Here, we will simply underline Hume's usual formula, reminiscent of the ancient sceptics: to quit traditional philosophy and live our ordinary lives, with commonsensical beliefs in causal relations and in the reality of the external world.

2. The epistemological and the ontological problems of causality

In dealing with the problems of the external world existence and causation, it could be thought natural to discuss these two problems in this order, since we cannot examine the issues related to causality among physical bodies unless they actually exist. However, we will deliberately invert this order, for two main reasons. First, Hume himself discusses them in this order (in, respectively, the third part of Book 1, and in section 2 of the fourth part of this same book of the *Treatise of Human Nature*). Secondly, his epistemological theory links the issues in such a way that his main reason for scepticism about the external world directly depends on his theory of causality. As we will show, the causation problem *produces* Hume's (mitigated) scepticism concerning the external world's existence.

It is a view commonly held by philosophers that Hume argued that we cannot justify our belief in causal relations through rational means. We agree with this view. Hume's detailed and powerful sceptical arguments are articulated in the third part of the first book of

⁶ Indeed, if the very existence of the realm of physical objects, constituting par excellence the subject matter of the natural sciences, or the basic, causal mode of interaction between them, are called into question, no further discussion is possible concerning particular, derivative metaphysical issues resulting from the philosophical analysis of specific scientific theories or research programmes.

⁷ For a specific analysis on how the "New Hume" interpretation impacts the debate in metaphysics of science about natural laws, see Borge & Azar (2015).

his *Treatise on Human Nature* (1739/40) and section 4 of the *Enquiry on Human Understanding* (1748).⁸ This is the Humean version of the *causation problem*, often mistaken for the induction problem.⁹ Hume was led to his detailed analysis of causation – undoubtedly the most significant contribution to the field since Aristotle – by his interest in the Lockean issue of the limits, or extension of human knowledge. In particular, he was interested in determining how we can know matters of fact that have not yet been observed, or that cannot be observed. In the *Treatise*, the path leading to this problem is rather complex, and will not be discussed here. In the simpler approach adopted in the *Enquiry*, it is formulated at the beginning of section 4, whose title is “Sceptical doubts concerning the operations of the understanding”. In EHU 4.3 he asks: “What is the nature of the evidence that assures us of any real existence and matter of fact, beyond the present testimony of our senses, or the records of our memory?” Hume is thus interested in how we can – if at all – be assured about facts that are not directly accessible to our senses at the present moment, or are not memories of past experiences. On what basis are our beliefs in such facts founded? Hume maintains that any belief on such unobserved matters of fact must be founded on *causal inference*, or “*reasoning*”, as he says: “[...] all reasoning concerning matters of fact seems to be founded on the relation of cause and effect. Only using this relation can we go beyond the evidence of our memory and senses” (EHU 4.4). For example, whenever we see dark clouds in the sky (cause), we expect that soon it will rain (effect).

The next step is, then, to inquire into the grounds and nature of our knowledge of the causal relations. And here Hume’s answer is unequivocal: our knowledge of causal relations derives entirely from *experience*. As to what kind of experience this is, the proposal is, again, clear: inferential knowledge of matters of fact “is in no case obtained by a priori reasoning but arises entirely from experience, when we find that certain objects are *constantly conjoined* with each other” (EHU 4.6, our italics). Besides some controversial auxiliary assumptions put

⁸ These books will henceforth be denoted by ‘*Treatise*’ or ‘*T*’, and ‘*Enquiry*’ or ‘*EHU*’, and the references follow the now standard, scholar editions found in the Reference list. For instance, ‘*T* 1.3.8.5’ means paragraph 5 of section 8 of part 3 of book 1 of the *Treatise*; and ‘EHU 5.2’ denotes the paragraph 2 of section 5 of the *Enquiry*.

⁹ The problem of causation is a problem involving generalization of experience, much like the problem of induction, but it is *not* limited to that. By labelling Hume’s causation problem as the ‘problem of induction’, we overlook a fundamental element of his entire philosophy: *causality*. For example, the question of whether all swans are white simply because all the ones we have seen so far are white is an instance of the problem of induction, whereas the question of whether gravity will cause a stone to fall if we drop it from a window is an instance of the problem of causation. As Monteiro rightly observed (2009, p. 12, 104), Hume *never* used the term ‘induction’, mainly because his primary concern was not the relationship between *objects and qualities*, but rather the relationship between *causes and effects*. Nevertheless, although Hume never explicitly tackled the problem of induction, his notion of causality *includes* the concept of induction — although the reverse is not true — because “every inference based on what we call inductive generalization is, for him, a causal inference, as all knowledge of nature rests on the discovery of some kind of causal relation” (Monteiro, 2009, p. 27).

forward in the *Treatise*, but not in the *Enquiry*, the constant conjunction of phenomena is the empirical kernel of causality. But then a new question arises: what assures us that the observed conjunction will continue to be observed in the future, or otherwise unobserved cases? This is the most sensitive issue in Hume's epistemological theory. His answer is, in a nutshell, that no "process of the understanding", be it rational or empirical, can give us such an assurance. Hume's powerful arguments to this conclusion cannot be examined here. We just notice that it was mainly this that established Hume's reputation of being a radical sceptic about causality, and therefore, given the other parts of his analysis, about any kind of empirical belief on unobserved matters of fact.¹⁰

The "Old Hume" view portrays him as a radical sceptic whose epistemology leads to irreconcilable doubts about causation, the external world, and even personal identity.¹¹ According to this reading, Hume's arguments against rational justification for causal inferences and the independent existence of the external world amount to a form of epistemological despair. On this view, Hume's philosophy is largely negative — he dismantles the rationalist foundations of knowledge but offers no constructive alternative beyond an appeal to custom and habit. This interpretation is supported by figures such as the logical positivists, Russell and Quine, among others. Indeed, we concede: Hume never retreats from the thesis according to which causal inferences cannot be rationally justified, nor the consequences of this thesis — including the external world scepticism, which we will approach soon. Before Hume, Locke had already shown, although by entirely different means, that it is vain to expect certain knowledge in most realms of human concern, including science.¹² Probable belief is *all* we can reasonably expect to attain concerning unobserved matters of fact — *a thesis we cannot emphasise enough in the appraisal of all the theses we are defending in this paper.*

However, following the refreshingly new reading of Hume's texts proposed by Kemp Smith and other authors in the second half of the 20th century — dubbed "The New Hume" by its critics — we now call attention to the fact that, contrary to what his traditional interpreters seemed to assume, *Hume doesn't surrender to this sceptical conclusion, and his theory does*

¹⁰ These are the three natural beliefs, about which we will talk a little bit later.

¹¹ For a more robust analysis of the current debate among Hume's specialists about the sceptic vs. naturalistic reading of Hume, see Millican (2009) and Read & Richman (2000).

¹² It was Locke who first observed that all knowledge that experience can provide, no matter how probable, is not certain knowledge (*Essay IV iii 14*), so that a perfect empirical science, which produces certain and universal knowledge of matters of fact, is beyond our capacity and would be a futile endeavour to pursue (*Essay IV iii 29*). A detailed examination of Locke's arguments can be found in Chibeni (2005a).

*not end at this sceptical conclusion as well.*¹³ Just for the record, there is a whole set of *ten* dense sections on causality in part 3 of book 1 of the *Treatise*, and several others in the *Enquiry*. The first reason why Hume didn't stop at his sceptical conclusion is that it is *not enough* to establish that we are ignorant about causality to conclude that we are not allowed to trust in our causal inferences (EHU 7.25). Besides that, to reject its epistemological legitimacy is absurd, for rejecting causation implies not only the denial of our scientific investigations, which are inevitably empiric, but also the more trustable intuitions that we dispose of to guide us day to day. It is so evidently the case that "one would appear ridiculous, who would say, that 'tis *only probable* the sun will rise tomorrow, or that all men must dye [...]" (T 1.3.11.2, our italics). Therefore, as one of us argued elsewhere (Chibeni, 2014, p. 11), Hume did not merely reject the a priori view of causal explanations; rather, he "faced the challenge of seeking foundations for such important inferences" and, by doing so, he developed his own naturalistic theory on the matter.

For the sake of brevity, we will limit ourselves here to section 5 of the latter book, interestingly named "Sceptical solution of these doubts". By the very title of the section, it is clear (although not for Hume's readers for more than two centuries!) that Hume has a *solution* to the sceptical doubts that he carefully raised in section 4.¹⁴ It is disarmingly straightforward: it is just *custom* (or *habit*) in conjunction with *imagination* that gives us the sought epistemic "assurance". Hume cautiously talks here of *assurance*, not of *proof*, because the proposed custom-based inferences are not *logically valid*, and therefore do not guarantee their conclusions with apodictic certainty, even when the premises are taken for granted. Accordingly, the whole and all-important realm of beliefs generated by causal inferences consists just of *beliefs*, *not knowledge*, in the strict sense adopted by the modern philosophers. By producing beliefs, but not knowledge, the experimental reasoning upon which all conduct of life depends, "is nothing but a species of *instinct* or *mechanical power*, that acts in us unknown to ourselves" (EHU 9.6, our italics; see also EHU 5.22). In other words, "not only is habit an instinct, but the very experimental reasoning arising from this instinct is also

¹³ Besides Kemp Smith's article and book (1905, 1941), two of the most influential works in the new interpretation are John Wright (1983) and Galen Strawson (1989). The ensuing debate was ironically dubbed "The New Hume" by Kenneth Winkler (1991). Before the debate begins, an incisive, if compendious, warn against the sceptical interpretation was made by Nelson Goodman in his well-known "The new riddle of induction" (Goodman, 1954/1983). See also Craig (1987), Loeb (2002), Read & Richman (2000).

¹⁴ A separate, historical issue, that will not be pursued here, is that in exposing the doubts about the possibility of a rational justification of knowledge of causation Hume had predecessors, the most important of whom being Nicolas Malebranche. His main doctrine is expounded in *De la recherche de la verité*, first published in 1688.

instinctual” — instinct, here, taken as the opposite of rational, autonomous deliberation, that is, “something natural, automatic, mechanical” (Santos, 2023, p. 8).

The fact that Hume’s “solution” to the sceptical problem of causality has not been recognised as such for so much time is certainly linked to the fact that habit – its kernel – has never been previously considered to have any epistemological relevance *at all!* To fully appreciate this move of Hume requires a complete reversal of the typical, aprioristic approach to epistemology. Hume does not seek to overcome the sceptical doubts by offering new *arguments*, but by *changing the entire epistemological game*. From this point on we need to *supplement* classical epistemology with a new “tool”: the empirical study of the mental processes responsible for beliefs formation. This is just what was later called “epistemology naturalized” by Quine, in his ground-breaking essay (1969). Both in the case of Hume’s theory and in Quine’s approach, this ambitious and disturbingly new project arises from an acute sense of powerlessness of classical epistemology in dealing with some of the basic issues of human knowledge. In a rough metaphor, these authors see epistemology as a “hybrid car”: when one of its motors ceases to work, the other assumes its function and keeps the car going.

We have no space here to justify our sympathy for this new approach in epistemology. We just want to expand a little more the discussion of Hume’s proposal, to see what costs and benefits it implies in the context of our investigation. The major cost is, as we remarked, a profound rupture with the classical approach in epistemology. But if it was showing clear signals of powerlessness to deal with such important issues as causality and the reality of the physical world, it was perhaps time to explore alternatives. Thus far we saw that the naturalisation of the epistemological issue of our putative knowledge of unobserved matters of fact – via naturalisation of the causal inferences – does already represent a potential gain. It avoids radical proposals of banishing causality from the realm of physical objects, such as the extremely well-designed theory put forward by Berkeley a couple of decades before Hume; or Russell’s even more radical proposal of banishing causality from philosophy altogether.¹⁵ In Hume’s naturalistic approach, causal inferences, amply regarded as an indispensable tool not only in science but also in everyday life, are rehabilitated as *bona fide* intellectual instruments.¹⁶ As this is a crucial point, it is worth spending some more time analysing it.

¹⁵ For a detailed analysis of Berkeley’s theory, see Chibeni (2008a). Russell’s indictments on causality and his later recantation from this position were examined by Chibeni (2001).

¹⁶ There is ample textual evidence that Hume took seriously his custom-based causal inferences, and not as only an epistemically irrelevant psychological phenomenon. See, for more detail, Chibeni (2008b).

As we mentioned, the new epistemological theory put forward by Hume is that belief in the causal relations between events is derived from the habit produced by past experience in conjunction with imagination. But, again, imagination was invariably regarded as “alien” to epistemology. Hume argues that the human mind is naturally inclined by the imagination to form *associations*¹⁷ between events that are frequently observed together, suggesting that this propensity is the result of a natural disposition. He repeatedly says it is a “species of instinct”, akin to other innate, non-experience-induced instincts of man and beasts. Since reason cannot establish the connection between objects, even with the repeated observation of their conjunction, our belief in causal relations is guided by principles of association that unite ideas in the imagination (T 1.3.6.12). Imagination is shaped by experience; it is in this interplay between habit and imagination that the principle of causal association is rooted. Without this associative process, we would be unable to infer causes from effects or vice-versa, and consequently to form any belief about unobserved matters of fact. Causal inferences result from “a species of natural instincts, which no reasoning or process of the thought and understanding is able, either to produce or to prevent” (EHU 5.8). *It is involuntary and essential to human life, as are the other instincts.* The custom of inferring causal relations is our guiding principle both in science and in everyday life, allowing us to learn from experience and expect the future to resemble the past. Without it, we would know nothing beyond immediate perception or past perception, being unable to associate causes with effects. As a result, both action and reasoning about matters of fact would cease, and therefore we wouldn’t be authorized to believe that the fire burns, that all men die, that water hydrates, and so forth. Habit, as he says, is the “great guide of human life”; it is this principle that makes our experience useful, enabling us to adapt means to ends and providing knowledge of matters of fact beyond the immediate testimony of the senses and the records of memory (EHU 5.6).¹⁸

As a sign of the radical novelty of Hume’s theory of causality, there is the fact that not even a refined mind such as Russell’s was not able to recognise it as a serious epistemological proposal. In a chapter of his *A History of Western Philosophy* (1945) dedicated to Hume, he offers a classical sceptical reading of Hume’s epistemology, arguing that his account of causal

¹⁷ It was Locke who first introduced this concept, and pejoratively so, as he did so in the context of warning against the risk of hasty associations (cf. *Essay* III xxx). Hume, rather than emphasising the fallibility of natural associations (as Locke did), conceives them as the fundamental element for *legitimising* (although not for justifying), from an epistemological standpoint, our habit of making causal inferences.

¹⁸ Nevertheless, Hume adds that, although we can, through this principle, transcend the limited domain of the senses and memory by making causal inferences, it is essential that there be some fact present to the senses and memory, otherwise our reasoning would be purely arbitrary, and the chain of causal inferences would lose all its support (EHU 5.7). For example, it is essential that there be smoke in order for us to infer that there is fire, just as it is essential that there be a constant conjunction between fire and smoke in our memory to such inference.

belief *merely describes* how we form such beliefs through habit and imagination, without actually justifying them. Since justification, in Russell's view, must be rational, and Hume denies the possibility of rational justification for causal inferences, he is taken by Russell to be a consummate sceptic or even an irrationalist. Hume's philosophy, Russell said, "represents the bankruptcy of eighteenth-century reasonableness", adding that Hume arrived at "the disastrous conclusion that from experience and observation nothing is to be learnt", and that "there is no such thing as rational belief" (1945, p. 672). Indeed, Hume never retreats from the sceptical conclusions summarised in the fourth section of the *Enquiry*. However, this does *not* imply that Hume has stopped at this point, since he proposes a solution to the problem — as he himself said. Hume proposes, in a vein inaugurated by Locke, an expansion and a relaxation of the criteria by which we judge to know the world. As one of us remarked elsewhere (Chibeni, 2012, p. 248), "one of Hume's great contributions to epistemology was precisely to deepen Locke's insight, in the sense of treating belief as a respectable epistemic category, complementary to knowledge."

However, this issue of the grounds of the causal inferences does not exhaust the causation problem. In a more metaphysical vein, we can now ask whether causation has some kind of *ontological reality*, or whether it belongs simply to the way human minds (and, according to Hume, the other animals' minds too)¹⁹ function when stimulated with the constant conjunction of events and/or objects. Although Hume's answer to the epistemological aspect of the causation problem — whether we can assure our beliefs in matters of fact, which are derived from causal inferences — is undoubtedly naturalistic, at least according to the naturalist reading, Hume's answer to the metaphysical aspect of the causation is not that clear. There is much debate and controversy in the literature, some authors holding that on this topic, at least, Hume's scepticism prevails; and some others boldly attempting to show that Hume held a cautiously realist view on the ontological status of causality. Again, this is not the place to delve into this polemic, as that would require much more space and time than we have here.²⁰ For our purposes, it is enough to point out that the very fact that Hume *did* discuss this metaphysical issue casts further doubt on the usual view

¹⁹ The inclusion of non-human animals in the discussion of the problem of causation is one of the most original – and relevant – contributions of Hume. Although he recognises that the relations of ideas still distinguish human thought from that of animals, his inclusion of causal reasoning in the broader scope of human cognition marked a bold intellectual step (see Chibeni 2014: 18). In doing so, Hume expanded the concept of reason beyond demonstrative reasoning to embrace empirical, causal inference—a redefinition of empirical knowledge similar to later shifts seen in the work of Willard Quine. See the sections specifically devoted to it in T 1.3.16 and EHU 9; see also Chibeni (2014), and Santos (2023) for a discussion about Hume's pioneerism on the matter.

²⁰ For a recent, thorough discussion on the topic, see Fabian (2022).

that his philosophy was completely hostile to metaphysics generally. By the way, it should also be remarked that in the charming first section of the *Enquiry*, Hume contrasts two kinds of metaphysics, arguing that we “must cultivate *true* metaphysics with some care, in order to destroy the false and adulterate” (§ 12).

Given all this repertory about the causation problem, in the following section, we shall see that, *mutatis mutandis*, a similar understanding is plausible concerning Hume’s stance on our second major metaphysical in this paper, the reality of the external world.

3. The reality of the external world

One of the most important – if not *the* most important – problems of modern philosophy is that, regarding our putative knowledge that, besides the contents of our own mind – our “ideas”, in the parlance of the epoch –, there is an objective, “external” reality, partly corresponding to these ideas, and represented by them. As it is well known, this problem was first raised by Descartes in the first book of his *Meditations* (1641), and positively answered by him in the sixth, last book. Descartes’ argument is entirely “rational”, in the sense of being entirely based on abstract arguments, purportedly “proving” their conclusion. But, as with any argument, Descartes’s proof rests on several premises; and both these premises and the very validity of the inferences involved in the complex proof, have soon been called into question by subsequent philosophers. Rejecting Descartes’s proof – and, indeed, his whole aprioristic approach to this specific, central issue in philosophy –, but not wanting to become a sceptic, Locke endeavoured, in *Essay* IV.xi, to devise another argument for the belief in the external world. This argument is, in fact, a series of plausibility reasons for the *belief* in such a world. For Locke, this was enough. Deeply unsatisfied by both Descartes’s proof and approach, and by Locke’s plausibility considerations, Berkeley, in his turn, opted out of the game and ingeniously devised a philosophical system in which simply there is not such an “external” world. In it, the physical world is entirely mental, composed of ideas in the mind of God. This world, he argued, is as real as Descartes’s and Locke’s purportedly “material” world. One of the main motivations for Berkeley’s radical modification of the usual materialistic metaphysics was epistemological: the said material world, if it existed, would be entirely unknowable.²¹

Knowing all of this, Hume disparaged the whole issue! He could not accept any of these three solutions — neither Malebranche’s rather bizarre “occasionalist” solution, which

²¹ Berkeley’s argument is deployed in paragraph 18 of his *Treatise concerning the Principles of Human Knowledge* (1710).

was largely dismissed among his interlocutors.²² The first passage in which Hume reveals his pessimistic position is in *Treatise* 1.3.5, in which Hume briefly comments on the causes of the impressions of sense and memory. Concerning this issue, Hume bluntly asserts that the ultimate cause of the impressions, which arise from the senses, is “*perfectly inexplicable by human reason*, and ’twill always be impossible to decide *with certainty*, whether they arise immediately from the object, or are produc’d by the creative power of the mind, or are deriv’d from the author of our being” (T 1.3.5.2, our italics). As we see, Hume enumerates here, in this order, the (Cartesian-Lockean) realist position, the solipsist position, and (Berkeley’s) idealistic position concerning the reality of the physical world. He is very clear in saying that this issue is insoluble, *if what we seek is certainty*. Since Hume was going, in the sequel, to follow Locke’s modest position of being satisfied with belief, or probability, instead of certain knowledge, one could expect that the same stance would be adopted concerning the existence of the external world. Surprisingly, however, what we find is an immediate declaration that this issue is *irrelevant* to him! As he said immediately later, “nor is such a question any way material to our present purposes. We may draw inferences from the coherence of our perceptions, whether they be true or false; whether they represent nature justly, or be mere illusions of our senses” (T 1.3.5.2).

Since what he is going to discuss at length in the third part of Book 1 is causality, we may think that these remarks represent a kind of deliberate, provisional strategy to continue examining causal inferences and related issues *as if* they involved bodies (and minds, by the way), whatever their nature, but only for the sake of the argument. We believe this suggestion is not entirely unreasonable; among other facts, we should notice that exactly the same strategy is adopted by Locke in his *Essay*, which defers the discussion about the external world to one of the final chapters of the book. In the *Treatise* also the issue is resumed in section 2 of the fourth and last part of book 1, called “Of scepticism with regard to the senses”. Hume scholars usually acknowledge that this is one of the most difficult sections of the whole book. T 1.4.2 begins with a series of unexpected, disconcerting statements. Let us see at once the entire first paragraph:

Thus the sceptic still continues to reason and believe, even tho’ he asserts, that he cannot defend his reason by reason; and by the same rule he must assent to the principle concerning the existence of body, tho’ he cannot pretend by any arguments of philosophy to maintain its veracity. Nature has not left this to his choice, and has doubtless esteem’d it an affair of too great

²² Malebranche’s solution to the problem of our knowledge of the external world is grounded in his doctrine of *occasionalism*: for him, there are material bodies, but they are not the real causes of our ideas; they just provide God the *occasion* for Him to cause them in our minds.

importance to be trusted to our uncertain reasonings and speculations. We may well ask, *What causes induce us to believe in the existence of body?* but 'tis in vain to ask, *Whether there be body or not?* That is a point, which we must take for granted in all our reasonings. (T 1.4.2.1; Hume's emphasis.)

Notice, first, that the same key issue of how the sceptic can continue to live his life, that had already been raised in the discussion of causation, appears here, with reference to the topic of the previous section in the book, namely, "Scepticism with regard to reason". Hume then asks the same question concerning the topic of the new section, "Scepticism with regard to the senses". And the answer is essentially the same: "Nature has not left this to his choice". In other words: *naturalism*.

According to this naturalistic interpretation of Hume's solution to the external world scepticism, the matter is no longer a classical, philosophical issue, belonging to the sphere of reason and philosophically elaborated evidence, but of "nature". As Hume made clear in dealing with the powerlessness of reason to ground causal inferences, he means that a *different mental mechanism intervenes*, assuming to itself such an "affair of too great importance". Accordingly, Hume devotes the rest of the section to the pioneering investigation of such innate, somewhat "a-rational" (but *not irrational!*) mental processes responsible for the formation of the belief in physical bodies. But, contrary to what he did in the case of causation, in which he set about to reinforce the sceptical arguments before studying the process of belief formation, here he drops the issue with this short, if all-important, remark: "'tis in vain to ask, Whether there be body or not? That is a point, which we must take for granted in all our reasonings" (T 1.4.2.1). Why is it vain to ask that question? Exactly because philosophy, *as classically conceived*, is powerless to afford an answer, whatever it be.²³

Commenting on this general stance of Hume's, David Norton cunningly remarked, in his introduction of *The Cambridge Companion to Hume*, that "Hume was satisfied that the battle to establish reliable links between thought and reality had been fought *and lost*, and hence made his contributions to philosophy from a post skeptical perspective that incorporates and builds on the sceptical results of his predecessors" (Norton, 2009, p. 12; his italics). Entirely in line with the naturalistic interpretation of Hume's philosophy, Norton sees Hume's main contribution, at least regarding the problems of causation and the external world, as the development of "a post skeptical perspective". As we have been defending in this paper, such

²³ Interestingly, Quine made a very similar statement almost two centuries later: asking what reality is truly like, independent of human categories, is, in fact, *contradictory*; it is like to ask how long the Nile River really is, without considering units of measurement like "miles or meters" (Quine, 1992, p. 9).

a perspective involves the study of the mental phenomena of belief formation using tools akin to those of empirical science. Arguably, this is the main message Hume himself intends to pass to his reader already in the subtitle of the *Treatise*: “An attempt to introduce the experimental method of reasoning into moral subjects”. This is the method that natural philosophers — or scientists, as we would call them now – have been successfully employing for more than a century in studying natural phenomena. And this is what we now call *naturalised philosophy*, which deliberately blurs the frontiers between philosophy and science. In putting the issue in this way, it is not amiss to remind that this is just how philosophy was originally conceived by the Greeks — no distinction in kind was conceived between the study of the many realms of phenomena, natural or human, or even logics and mathematics: everything was philosophy. Although the project of naturalizing philosophy was not even recognised as a *bona fide* philosophical enterprise when it was formulated by Hume as a “science of man”, and was regarded with suspicion when it assumed an explicit form in Quine’s epoch-making 1969 paper, it can be seen as just a species of “recovery” of the origins of the field in Antiquity.

Resuming the problem of the external world, there is an important issue worth mentioning as to the grounds for the sceptical conclusion. As we have just seen, Hume appears to be entirely satisfied that scepticism was already established by the failure (in his view) of his predecessors in proving, or otherwise rationally arguing that there is an external world corresponding to certain of our impressions or ideas. But, in fact, a new blow to this hope can trivially be derived from Hume’s philosophy: the previous attempts to establish a realist position about the material world have all assumed (with the notable exception of Malebranche)²⁴ that the physical objects are the *causes* of the impressions of sensation. But in Hume’s theory of causation, the empirical kernel of causality is the experience of the “constant conjunction” of objects or events. It is from this experience, *and from it alone*, that we become authorised to place such items as causes and effects, and subsequently to form the idea of a metaphysical “necessary connection” between them. Now, there is not, and there can be *no* such an experience between bodies and our impressions of sensation: we have experience of the former elements of the putative cause-effect pair. We have no grounds to

²⁴ In Malebranche’s theory, there are bodies, but they are not the causes of our ideas; they just provide God the occasion for Him to cause them in our minds. As Hume himself noticed, this makes things even worse, for God is even more remote from our observation than the putative material bodies. The negative implications of Hume’s theory of causality to the problem of establishing the existence of matter is essentially the same in both cases. Berkeley’s solution is, as we have already noticed, to abolish matter from his ontology, and take the physical bodies and the ideas as the very same ontological items; there is question, therefore, the former causing the latter, and of inferring the former from the latter. For more details, see Chibeni (2008a, 2010, 2023).

even *conceive* such a causal relation. Therefore, any attempt to argue for the existence of bodies from mental impressions and ideas is bound to fail, according to Hume.²⁵

As to Hume's naturalistic analysis of the mechanism of belief formation in the existence of external bodies, it is too complex to be examined here. We shall just quote some important passages of the text to indicate how he develops his proposal. Let us begin with the paragraph following immediately the one cited a couple of pages above:

The subject, then, of our present inquiry, is concerning the *causes* which induce us to believe in the existence of body: and my reasonings on this head I shall begin with a distinction, which at first sight may seem superfluous, but which will contribute very much to the perfect understanding of what follows. We ought to examine apart those two questions, which are commonly confounded together, viz. Why we attribute a *continued* existence to objects, even when they are not present to the senses; and why we suppose them to have an existence *distinct* from the mind and perception? Under this last head I comprehend their situation as well as relations, their *external* position as well as the *independence* of their existence and operation. These two questions concerning the continu'd and distinct existence of body are intimately connected together. (T 1.4.2.2; italics in the original.)

Hume starts from the obvious empirical fact that our impressions (i.e. strong perceptions of the putative bodies) are not continuous. At first, it is not compatible with the supposition of any permanent, continually existing reality. Such a hypothetical ontological item is not made known by us by experience, nor by any reasoning, as the sceptical arguments show. Notwithstanding, we *do believe* in such a reality. This belief must therefore arise from the operation of another faculty of the mind; again, Hume's answer is: *imagination and custom*. These faculties not only lead us to patch up the intermittency of our perceptions with an underlying permanent item (the body) but also, at the same time, project it outward, to a level of external, distinct reality. In this way, the "vulgar" is usually led to mistakenly confound perceptions with objects. But this is wrong, of course. To mend this situation the "philosopher" then devises the "system of a double existence": bodies and perceptions. He thus tries to satisfy reason (viz. perceptions as *de facto* dependent and interrupted) and the experience (viz. the habit of imagining the existence of something independent from the mind and existing continuously). In other words, while the experience leads us to believe that similar perceptions persist without interruption, reason reminds us that even these similar impressions are in fact discontinuous and distinct. Faced with this contradiction, we adopt a

²⁵ With hindsight, we see that Berkeley has effectively captured this point in arguing against the possibility of proving, or arguing that it is probable, that there are material bodies in paragraphs 18 and 19 of the *Principles*.

kind of twofold compromise: we assign the quality of continuity to objects, even though we acknowledge the intermittent nature of our perceptions.

However, through a detailed, intricate analysis, Hume then shows that this system of double existence leads to insoluble paradoxes: it “is the monstrous offspring of two principles, which are contrary to each other, which are both at once embrac’d by the mind, and which are unable mutually to destroy each other” (T 1.4.2.52). Hume further contends that nature itself, despite being heavily challenged by reason, remains unyielding and ever-present, while reason is so clear in its judgments that its conclusions cannot be easily dismissed. Because these two forces — nature and reason — appear irreconcilable, we find ourselves compelled to grant each what it demands. If we were entirely convinced that our perceptions were continuous and independent, there would be no need to posit a separate, external reality; and if we were fully convinced of the intermittent, dependent nature of our perceptions, we would have no reason to assume an independent existence for objects. The contradiction between these two positions “we elude by a new fiction, which is conformable to the hypotheses both of reflection and fancy, by ascribing these contrary qualities to different existences; the *interruption* to perceptions, and the *continuance* to objects” (T 1.4.2.52; italics in the original). Thus, it is from this conflicted, intermediate state of the mind that the notion of a “double” existence arises: it is “from the intermediate situation of the mind, that this opinion arises, and from such an adherence to these two contrary principles, as makes us seek some pretext to justify our receiving both; which happily, at last, is found in *the system of a double existence*” (T 1.4.2.52, our italics). Hume is playing the sceptic game. What he wants is, of course, to clog the path of traditional philosophy to predispose the reader to accept his naturalistic solution.

Traditional philosophy — in this case, epistemology and metaphysics — is a total failure. Here, as elsewhere in the domain of matters of fact (as contradistinguished from the relations of ideas, where it retains some of its prerogatives, as in algebra and arithmetic; T 1.3.1.5) it entangles us in difficulties and paradoxes, apt only to lead us to complete scepticism. The section ends, then, with the usual recommendation: leave the issue to nature, after trying to understand exactly how it operates “in the background” of the philosophical endeavours. The pervasive sceptical doubt regarding both reason and the senses is an incurable “malady” that inevitably resurfaces, regardless of how vigorously we try to eliminate it, and as we delve deeper into these reflections, the doubt only grows stronger: “As the sceptical doubt arises naturally from a profound and intense reflection on those subjects, it always increases, the farther we carry our reflections, whether in opposition or conformity to

it” (T 1.4.2.57). In this scenario, Hume relies entirely upon “carelessness and inattention”, for they alone “can afford us any remedy” and therefore provide us with some relief; he takes it “for granted, whatever may be the reader’s opinion at this present moment, that an hour hence he will be persuaded *there is both an external and internal world* [...]” (T 1.4.2.57, our italic).

4. Concluding remarks

Our main aim in this article was to argue that, contrary to a common belief, Hume’s philosophy *should not* be seen as a pioneering repudiation of metaphysics from the realms of philosophy and science. Following a relatively new interpretation inaugurated by Kemp Smith, we endeavoured to show that Hume’s ambitious philosophical project of a “science of man” *can*, to some extent, accommodate two of the most basic metaphysical theses — the existence of an external (mental-independent) world, and the existence of causal links between its constituent physical bodies. This accommodation should not be understood as the existence of *arguments* in Hume’s texts purporting to *prove*, or somewhat rationally establish such theses, but quite the contrary: in the critical, initial analyses of them, Hume not only acknowledged the sceptical doubts already expounded by some of his predecessors, but also contributed to *reinforce* them. Nevertheless, his positive contribution – largely unrecognised for nearly two hundred years – consisted in advancing his project *beyond* the sceptical stopping point. As Stroud (2016, pp. 30-31) has argued, Hume’s epistemology is neither fully sceptical nor entirely realist but, instead, represents a sophisticated form of “mitigated scepticism” (in Hume’s own words, EHU 12.24-25) or “naturalised realism” (as we prefer to call it), according to which the focus of philosophy shifts from the classical notion of *rational justification* to *empirical explanation* of phenomena. Hume’s change of focus from justification to explanation allows Hume to bridge the gap between empiricism and realism, laying the groundwork for the pragmatic stance widely adopted in contemporary philosophy of science. Philosophy, and particularly epistemology and metaphysics, can – and, in some cases, *should* – shift its focus from the formal analysis of arguments to an empirical, open-ended, scientific study of the functioning of the human (and, arguably, animal) mind in forming beliefs, especially beliefs in those two metaphysical theses, and how we put such beliefs at work by developing a whole host of derivative mental operations.

Hume’s strategy is, therefore, not to refute scepticism (about causality and reality) in a traditional manner, but rather to render it practically irrelevant. As we briefly indicated in section 2, Hume began by reducing causal inference to a species of “instinct”, which can neither be justified nor rejected by the mind. And although this inferential practice operates on

the basis of an idea of a “necessary connection” between cause and effect, such an idea does not originate directly from any empirical input. Instead, it is also formed by the mind by a complex process beyond rational control. The same reading is possible, *mutatis mutandis*, concerning what Hume says about the belief in an external, mind-independent reality, as we showed in section 3. Assuming, following the hints of some of his predecessors, that this belief cannot be rational and empirically established, he shifted his attention to its natural belief-forming process in the mind. By considering our capacity to make causal inferences as a natural instinct, Hume considered both our trust in these inferences and our belief in an external world as *natural beliefs*.²⁶ As Hume himself argued, these beliefs are not only *inevitable* but also *necessary* for our survival as living beings. According to Kemp-Smith (1941/2005, p. 76), Hume’s approach to the problems himself raises regarding causation leads him to recognise that natural beliefs are “‘manifest’ in experience and therefore more certain [...] than any theory that might be presented to explain them.” Again, although by this approach – akin to those of the natural sciences – no justification can be offered for these beliefs, they are somewhat legitimated as natural mental processes, capable of establishing in the mind a kind of metaphysical background on which it can then build up our theories about the (physical and mental) world. Instead of pursuing impossible epistemic goals, philosophers can then devote their energies to developing their particular interests in the study of man and nature, avoiding both losing themselves in the “unfathomable depths of metaphysics” (in Locke’s famous and pioneering warnings) and to confining their enquiries to the barren, metaphysics-free soil on which the logical positivists and their real predecessors (such as Ernst Mach) attempt to build the edifice of human knowledge — science in particular.

If we are not at ease with such a bold proposal for philosophy, a compromise option would perhaps be to take the two basic beliefs that we have been discussing in this paper as *philosophical hypotheses*, as Hume himself has dimly considered in some passages.²⁷ But in

²⁶ There are, in Hume’s theory, three natural and indemonstrable beliefs: (i) the necessary connection between cause and effect, (ii) the existence of a world composed of external bodies whose existence is independent of the mind perceiving them, and (iii) the persistence of personal identity over time. We do not pay attention to the third natural belief in this paper. However, it is interesting to stress that both the second and the third natural beliefs are, in fact, consequences of the first one, since these beliefs are products of causal inferences.

²⁷ As one of us suggested elsewhere, it seems that “Hume adopts a position quite close to that of contemporary realist empiricists”, according to which (1) the justification of a hypothesis (like the custom-imagination hypothesis for causal inferences) derives from its ability to exhibit certain theoretical virtues, such as explanatory power and simplicity, and (2) “hypotheses should not be evaluated in isolation, merely in comparison with experimental facts, but rather as part of integrated systems of hypotheses and in comparison with alternative systems” (Chibeni, 2011, p. 249). It would be interesting to compare Hume’s mitigated scepticism with some contemporary realist empiricists in future work. For an analysis of Humean scientific realism, see Chibeni (2005b); for a general analysis of empiricist scientific realism, see Chibeni (1997a).

this case, we should *not* entertain any hope that they can be evaluated, and eventually justified, by the classical, rational and empirical methods by which ordinary, low-level scientific hypotheses are evaluated. In the same way as, according to Hume, they do not arise, from a deliberate, explicit philosophical undertaking, they are not expected to be subjected to the ordinary methods of analysis. What Hume suggests is, rather, that they are the unavoidable product of basal mental processes, concerning it is vain to argue against. Such basal beliefs have their specific, and rather modest place in Hume's philosophical project as a whole. And this should suffice, we believe, to rectify the usual understanding of his contribution to philosophy as being purely sceptical. As we tried to show, Hume proposes his own form of naturalised epistemology: a unique combination of empiricism, holism, fallibilism, pragmatism, and ("mitigated") realism. Hume, therefore, anticipates many later developments in naturalised epistemology, especially Quine's view that epistemic justification is best understood in terms of a posteriori adequacy rather than a priori certainty. If this interpretation is correct, Hume should be seen as someone who had cleared the way for science by dissolving two major metaphysical problems (of causation and the external world existence) through a naturalistic approach. By doing so, he creates the conditions for contemporary scientists and naturalists to adopt — as they indeed do — a realist stance on both matters.

As a final, marginal remark, we note that Hume's naturalistic explanation of causal inferences, as well as the belief in the existence of a physical, external world, goes against the long-standing theological notion that humans were made in "the image of God", endowed with a divine rational faculty that set them apart from the rest of creation.²⁸ By showing that our fundamental epistemic practices are based on the same principles that govern animal cognition, Hume rejected the idea that humans occupy a privileged, godlike position in the order of nature. Instead, he portrayed human thought as an extension of the same natural processes that govern all sentient beings. This was a major blow to both religious epistemology and the Enlightenment ideal of human reason as a quasi-divine faculty capable of grasping ultimate truths through pure intellect. Indeed, the main part of Hume's contribution to epistemology is to propose a kind of scientific study of the human mind, putting aside this idealised, "supernatural" conception of it. Nevertheless, Hume did not view this proposal as *abandoning philosophy* in favour of something like psychology — as Russell, for instance, explicitly held (see Russell, 1945, p. 666). —, but rather as implementing his

²⁸ On this issue, see Craig (1987, chap. 2).

“original proposal of a science of human nature, from which philosophical questions should be addressed: not only epistemological issues but also ethical ones” (Chibeni, 2014, p. 9, our italics). Hume was proposing a new way of doing philosophy when its classical resources began to fail — much like what Quine did two centuries later. And if even then the project of a naturalised philosophy has met strong resistance throughout its proposal by Quine,²⁹ the more so occurred in Hume’s time, and for so much time afterwards. Finally, instead of interpreting Hume as one of the forerunners of the anti-metaphysical trend within empiricism, we believe that his “science of man” made some room for metaphysics, as cultivated within the same empirical approach of natural science itself. In the spirit of Dom Howard’s challenge, true understanding can only emerge if we dare to embrace a bit of metaphysics and explore what it reveals about the world.

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²⁹ See, for instance, Kim (1993), BonJour (1997) and Tsehay (2019).

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