

////// tématická studie / thematic article //////////////////////////////////////

HUME'S THEORY OF CAUSATION: IS THERE MORE THAN ONE?

Humova teorie kauzality: existuje více než jedna?

Abstract: *It is traditionally assumed that there is only one theory of causality in Hume's writings. In this article it is shown that we can distinguish between an early and mature theory. It is argued that the mature theory, strongly influenced by Newton's physics, accords with the New Hume (sceptical realist) interpretation by asserting that real causal relations are not accessible to the human mind.*

Abstrakt: *Tradičně se předpokládá, že se ve spisech Davida Huma nachází pouze jedna teorie kauzality. Tento článek dokazuje, že je naopak třeba rozlišit mezi Humovou ranou a zralou teorií. Zralá teorie je hluboce ovlivněna fyzikou Isaaca Newtona a je ve shodě s takzvanou novohumovskou (skepticky-realistic-kou) interpretací, podle níž skutečné kauzální vztahy nejsou lidské mysli přístupné.*

Keywords: Hume; causality; Newton; epistemology

Klíčová slova: Hume; kauzalita; Newton; epistemologie

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There can be little doubt that the centre piece of Hume's epistemological and ontological writings is his treatment of causation. It is the theme that provides a foundation for many of his other original theses – his doubts about the rational basis of inductive proof, his reconciliation of determinism and freedom, his critique of testimony about miracles, and his arguments against proofs of God's existence. Causation is also the theme that has most resonated in the reception of Hume. Most famously, it was Hume's scepticism about causation that aroused Kant from his dogmatic slumbers and spurred him to develop his critical philosophy – at least if Kant himself in his *Prolegomena* is to be believed. Hume's theory of causation has been more positively influential in later English-speaking philosophy, and attachment to the spirit of his theory – if not to its letter – is currently so widespread as to be perhaps the default position.

Hume's treatment of causation is of particular importance because he is convinced that the causal nexus is the basis for all our factual beliefs that go beyond the immediate deliverances of perception or memory. Hume argues that anything we know about the surrounding world which is not directly perceived or recalled, is known by causal inference. If I believe that a friend of mine is now in France I will base my belief on causal reasoning – I have a letter from him (effect), or I know his previous resolution (cause). If I hear an articulate voice from the next room I infer the presence of a person (cause). If I see a fire, I may infer its heat (effect) As Hume concludes, "If we anatomize all the other reasonings of this nature, we shall find that they are founded on the relation of cause and effect".¹ Our belief systems are saturated with causal inference and we would be prisoners of our own minds if we doubted all causal relations.

Hume goes on to show that our concept of cause is actually much less straightforward than we might at first think. We mistakenly assume, he argues, that we can directly perceive causal connections in nature, when in fact we are only acquainted with regular successions of events, or what he calls their "constant conjunctions". We perceive one kind of event followed by another on many different occasions, and gradually become acquainted

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¹ David HUME, *A Treatise of Human Nature*, L. A. Selby-Bigge (ed.), revised by P. H. Nidditch, Oxford: Clarendon Press 1978, 26–27.

with the regularities of nature. The impact of one billiard ball is followed by movement in the billiard ball that it strikes. This is observed to happen on different, but resembling occasions. Indeed it is characteristic of all such collisions between hard bodies. This law-like regularity then leads us to assume what we call a “causal” connection. Our conviction that there is a causal – or necessary – connection between the impact of the first billiard ball and the movement of the second is, in fact, traceable to our own subjective reaction to the regularity. We come to anticipate what will happen when the first ball strikes the second. On seeing the impact – or imminent impact – of the first billiard ball, we automatically expect the second ball to move off in a straight line. When this movement in the second ball does indeed happen we feel that it simply *had to* happen because it confirms our expectation. We thus invest the regularities of nature with our own subjective feeling of necessity.

The account of causation which I have just sketched, involves two components: regularity and subjective necessity, and these are reflected in Hume's two definitions of causation according to which a cause is, on the one hand, that which immediately precedes, and is constantly conjoined with, its effect; and, on the other hand, that which leads the imagination to anticipate the effect.² This dual characterisation of causation conspicuously avoids asserting an actual necessary connection between events. This can leave the reader feeling disenchanted or even robbed. The world has been reduced to a series of regular, law-like events, the necessity of which is a projection of our own psychology. Many treat this as not really a theory of causation at all, but a denial that causation exists.

In the last few decades of Hume scholarship a new interpretation of his view of causation has been proposed by, among others, John P. Wright, Donald Livingston and Galen Strawson, which has been dubbed “the New Hume”.³ This supplements the traditional account of Hume's theory that

² The two definitions are presented at HUME, *Treatise*, 169–172 and HUME, *Enquiries*, 76–77.

³ See J. P. WRIGHT, *The Sceptical Realism of David Hume*. Manchester: Manchester University Press 1983; D. W. LIVINGSTON, *Hume's Philosophy of Common Life*. Chicago: University of Chicago Press 1984; Galen STRAWSON, *The Secret Connexion: Causation, Realism and David Hume*. Oxford: Clarendon Press 1989. Strawson and Wright have further papers defending the sceptical realist interpretation in Rupert READ – Kenneth RICHMAN (eds.), *The New Hume Debate*. London: Routledge 2007. Most recently, Strawson provides a robust defence of the interpretation in Galen STRAWSON, *The Evident Connexion: Hume on Personal Identity*. Oxford: OUP 2011, see esp. p. 1–32. Kenneth WINKLER first called the sceptical realist interpretation “The New Hume”, which is also the title of his classic critique of the interpretation published in *Philosophical Review*, vol. 100, 1991, no. 4, p. 541–579. Winkler's

I have just sketched so as to alleviate the feeling that Hume is denying causality. They argue that Hume is not seeking to rob nature of real necessary connections. In fact he is happy to assume, with the rest of us, that real causal powers do indeed exist. Hume's point is to question our epistemic access to the nature of these powers. On this view of Hume, the world contains causal powers that elude our best attempts to uncover them. This interpretation claims that Hume is a "sceptical realist"⁴ about causation – realist because he never doubts the metaphysical reality of necessary connections, but sceptical because human minds are quite in the dark about what kind of necessary connections ground the regularity of phenomena.

With the emergence of the New Hume interpretation, commentators have tended to take sides, joining one of two opposing camps. On one side we have the Old Humeans, who defend the view that Hume is denying necessary connections in nature. These traditionalists argue that The New Hume is not really Hume because it ignores his empiricist strictures about meaning. All ideas are derived from impressions, and the lack of an impression of a necessary causal connection means that we have no meaningful idea of it that we might attach to the term "causation". On the other side are the New Humeans who argue that the traditional view is actually a product of twentieth-century positivism that anachronistically attributes to Hume a restrictive semantic theory. Hume is not Carnap. His texts clearly show that he worked with an intuitive understanding of causation, despite his holding that we are not acquainted with a single instance of such a causal connection. At no point, they argue, does Hume deny that this intuitive conception of causal power is applicable to nature. Indeed this is what makes him a sceptic, rather than a negative dogmatist. He confesses his ignorance of the nature of real causal connexion, but does not deny that it exists.

Not all commentators have taken sides in this debate. Helen Beebe,⁵ for example, has offered an interpretation of Hume on causation that fails to fit either interpretation. But the debate remains the central to contemporary discussion of Hume. In this paper I wish to argue that the two opposing parties actually share an important, and highly questionable, assumption. It is this that makes the conflict between them so intractable. I believe that when the assumption is brought into the open we can see that there is truth

paper is reprinted with a postscript in READ – RICHMAN (eds.), *The New Hume Debate*, p. 52–87.

⁴ See the title of J. P. Wright's book in note 3.

⁵ Helen BEEBEE, "The Two Definitions and the Doctrine of Necessity." In: *Proceedings of the Aristotelian Society*, vol. 107, 2007, p. 413–431.

contained in both interpretations of Hume's views on causation, and we can begin to find our way to a solution to the debate.

1. One theory or two?

The common assumption, made by practically all the contributors to the New Hume debate, is that there is only one theory of causation in Hume. It is assumed that in the three main discussions of causation that Hume gave us – in his *Treatise on Human Nature*, in his *Enquiry concerning Human Understanding* and in the *Dialogues concerning Natural Religion* – there is a single, unchanging, position being put forward. Strangely this assumption has been untouched by the widespread awareness that the New Hume interpretation finds more evident support in the *Enquiry* published in 1748, than it does in the first book of the *Treatise*, which was published nine years earlier in 1739.

I wish to make a simple suggestion: that we treat these differences of emphasis as pointing towards a deeper shift in Hume's theory. I would even go as far as to say that Hume has two theories of causation, one replacing the other. Of course there are important continuities between the two theories: they share core features and are recognisably by the same author. But Hume not only changes the details of his theory in the *Enquiry*, he also introduces a new understanding of its ontological status. The *Dialogues*, published posthumously, but largely written in the early 1750's, a few years after the *Enquiry*, confirm Hume's attachment to the new theory. There is an early Hume and a mature Hume on causation.

I should emphasise that I am not only concerned to make the descriptive, historical point that Hume's thought on causation developed in time. Rather, I wish to explore the philosophical question of *how* and *why* this development took place. We shall see that it is Hume's attitude to the mechanical philosophy and the emerging Newtonian understanding of nature, in which active forces play a fundamental role that drives the development of his thinking about causality. We shall also discover that the position Hume gradually arrives at is more subtle, and philosophically more satisfactory, than the original position put forward in his *Treatise* – a book which still receives disproportionate attention in spite of the author's later verdict that it is a 'juvenile work'.⁶

⁶ See his "Advertisement" to *An Enquiry Concerning Human Understanding* (E 2).

2. Why must Hume be static?

The idea that there is only one, unchanging, Hume has been a traditional mainstay of the secondary literature. It is bound up with the equally deep-rooted assumption that the *Treatise* contains the most complete account of his philosophical position, and that the *Enquiry* is a popular – and somewhat dumbed down – summary of that same position. It is common to find commentators framing an interpretation of a passage in the *Enquiry* by drawing on arguments that are not found in the *Enquiry* at all, but which were presented in the *Treatise*. It is also common to find the differences between the *Treatise* and *Enquiry* being treated not as evidence of a change of mind so much as a change in presentation. When topics are dropped from the *Enquiry* (for example, the theory of space and time, or the theory of personal identity), commentators often assume that Hume would still stand by the positions he advanced in the *Treatise*, but that he thought their complexities would not be appropriate in the more popular work.

If the contributors to the New Hume debate generally assume a static Hume, we seldom see this assumption being explicitly argued for. So Galen Strawson should be commended for actually recognising it and defending it as follows:

It cannot be plausibly argued that there is early Hume and late Hume, that they are importantly different, and that each deserves study in his own right. Hume was at work on the *Treatise*-clarifying *Enquiry* within five years of the publication of the *Treatise* and probably earlier, and (once again) was most insistent that the philosophical principles are the same in both. We have no reason to judge him to be self-deceived on this matter.⁷

Strawson offers two arguments against a developmental account here. The first is that there was not enough time between the *Treatise* and *Enquiry* for a significant shift of viewpoint; and secondly, that Hume himself ‘insisted’ that his philosophical principles had not altered. On the question of time one notices that in comparing the date of publication of the *Treatise* with the date of composition of the *Enquiry* Strawson is not actually comparing like with like. Hume tells John Stewart, in a letter of 1754,⁸ that he had finished composing the *Treatise* by the time he was 25, three years before it

⁷ Galen STRAWSON, “David Hume: Objects and Power.” In: READ, R. – RICHMAN, K. (eds.), *The New Hume Debate*, p. 33 (31–51).

⁸ GREIG, J. Y. T. (ed.) *The Letters of David Hume*. Vol. 1. New York and London: Garland Publishing 1983, p. 187.

was published, so Strawson's estimate of a five year gap is probably several years too short. But even if there were only five years between Hume composing the *Treatise* and the *Enquiry* one might still ask why this is too short a time for significant development to take place in his account of causation. Isn't five *weeks* long enough for a philosopher to have a change of mind on a significant question?

The support for Strawson's second claim that Hume himself was "most insistent" that his philosophical principles are the same in the *Enquiry* as in the *Treatise* is less easy to gauge because no reference is provided. One can certainly find Hume insisting that the changes between the two books are *more* a matter of presentation than of principles. But it is hard to put one's finger on an actual denial that there is any change of principles. For example, in the "Advertisement" to the *Enquiry* Hume implies that at least some of his principles in the later book are new, though he allows that "*most of the principles, and reasonings*" were contained in the *Treatise*. He also states that "some negligences in his former reasoning" have been corrected, which also suggests change in content, not just wording. Most importantly, the author tells us he would like the *Enquiry* "alone [to] be regarded as containing his philosophical sentiments and principles"⁹. In other words, Hume is urging us to read the *Enquiry* in isolation from the earlier work.

In the last ten years there has been a greater tendency to read the *Enquiry* as a separate, self-standing, philosophical work. Stephen Buckle's *Hume's Enlightenment Tract* (2001)¹⁰ and the collection of essays edited by Peter Millican, *Reading Hume on Human Understanding* (2002)¹¹ are fine examples of this tendency. These books, however, though they treat the *Enquiry* as relatively self-contained, do little to separate his account of causation there from what he says on the subject in the *Treatise*. It is my aim to do precisely that.

3. Causation and contact

In comparisons of the accounts of causation in the *Treatise* and *Enquiry* there is one difference that has often been noted, but which is usually given little more than passing attention. In the *Treatise* Hume claims that a cause must,

⁹ "Advertisement" (my emphasis), HUME, *Enquiries*, 2.

¹⁰ Stephen BUCKLE, *Hume's Enlightenment Tract: The Unity and Purpose of an Enquiry Concerning Human Understanding*. Oxford: Clarendon Press 2001.

¹¹ Peter MILLICAN (ed.), *Reading Hume on Human Understanding: Essays on the First Enquiry*. Oxford: Clarendon Press 2002.

by definition, be spatially contiguous with its effect, while in the *Enquiry* this condition is dropped and only temporal precedence is treated as necessary. In other words, the *Treatise* states that a cause and effect must be in a state of mutual contact, while in the *Enquiry* contact is no longer thought necessary to the causal relation and, indeed, Hume draws attention to causal powers, such as magnetic attraction and gravitational pull, in which perceivable contact does not in fact occur.¹²

To treat this change as negligible, and easily passed over, is an odd policy. Spatial contiguity was a defining feature of causation in the *Treatise* that Hume put considerable emphasis on. Hume points to spatial contiguity in the first characterisation of causation that he offers,¹³ and it then explicitly enters into his definitions of the causal relation,¹⁴ and it is also contained in the first of his eight “general rules” which are to determine our knowledge of real causal relations.¹⁵ In the *Enquiry* all such references to spatial contiguity are carefully and systematically avoided. The difference between the two texts on this issue is clearcut.

Now, by dropping the condition of spatial contiguity Hume changes his positive theory of causation. The vital term “constant conjunction” acquires a broader meaning in the second work. In the *Treatise* two objects are conjoined when they are not just temporal neighbours, but also spatial neighbours, on many repeated occasions. In the *Enquiry* temporal precedence is now enough, making constant conjunction quite compatible with action at a distance. This means not only that the intension of the term “constant conjunction” is different, but also that its extension – the class of event-pairings that it picks out – has become considerably wider.

What led Hume to make this change? One possibility is that he was reacting to a difficulty with mental causation. In the *Treatise* he admits that a place can hardly be ascribed to minds or their contents, and therefore they are not susceptible of the relation of spatial contiguity.¹⁶ Thus commentators have sometimes claimed that Hume drops the condition of spatial contiguity to accommodate “body-mind” and “mind-mind” causal relations. This may, indeed, be part of the truth, but it cannot be the whole story. Something was influencing him, in the *Treatise*, to assert spatial contiguity *despite* the

¹² Magnetism (“the attraction of a lodestone”) and gravitation (the falling of a stone) are specifically mentioned at E. 28 and 29 respectively.

¹³ HUME, *Treatise*, 75.

¹⁴ *Ibid.*, 170.

¹⁵ *Ibid.*, 173–174.

¹⁶ See *Treatise*, Part IV, section V (HUME, *Treatise*, 232–251).

problem with mental causation. And that “something” seems to be no longer influential on the Hume of the *Enquiry*. I wish to argue that a change in his understanding of natural philosophy is what is really behind the change. As Annette Baier has recently suggested, Hume sought to accommodate gravitational attraction in the *Enquiry*.¹⁷

It is well known that in the first half of the eighteenth century there was a lively controversy about the role of contact in material causation. The mechanical paradigm had asserted that matter can operate only by impulse, meaning that there must be pushing, collision, shock, percussion, or by some other interaction involving contact and motion. “The communication of motion by impulse”, to use Hume’s favoured phrase, was thought to be the only way in which material nature operates. Mechanism thus asserted a form of causal monism: there was only contact action. This monism was common to corpuscularians in both the English Boylean tradition, and in the French Cartesian tradition. It was strenuously asserted by Leibniz in his correspondence with Clarke, and it was also defended by Huyghens and by Jakub Bernouilli. It was accepted as obvious by Malebranche, whose work Hume was immersed in when composing the *Treatise*.¹⁸ Although these thinkers would have exempted the mind from their mechanistic world view, they held that, as far as the material world was concerned, there was a single kind of contact-based interaction. A body had no active power that might be the origin of motion in itself or another body. Rather it could only pass on motion that it received from another body. Matter was thus inert or “dead”.

But, during the period that Hume was writing, cracks were appearing in the mechanical consensus as the work of Isaac Newton and his followers exerted increasing pressure upon it. Newton put forward active forces, such as gravitational attraction, which resisted any reduction to mechanical impulse. These forces or powers went beyond the mere transfer of motion from one piece of inert matter to another by impulse. They were often characterised as “spontaneous” powers because they enabled a body to produce motion in another body without passing on its own motion and thus divesting itself of the power. Newton’s active powers meant that the essence of matter could no longer be reduced to the mechanical affections of size, shape, impenetrability and mobility. Instead matter contained a hitherto unknown –

¹⁷ See particularly Annette BAIER, “The Energy in the Cause.” In: *Death and Character: Further Reflections on Hume*, Cambridge, MA: Harvard University Press 2008, p. 224–236.

¹⁸ See Nicolas MALEBRANCHE, *The Search after Truth*. Lennon, T. M. – Olscamp, P. J. (eds.). Cambridge: Cambridge University Press 1997, p. 500 (“impulsion” in this passage involves contact action).

and perhaps unknowable – nature that grounded these active powers. Most shocking for the mechanical consensus, however, was that Newton's active powers – particularly gravitational force, but also the repulsive and associative forces between particles that he speculated over in his *Opticks* – seemed to involve action at a distance. It was no longer obvious that the condition of contact between cause and effect was a self-evident axiom.

In the Fourth Section of the *Enquiry*, Hume makes clear here that he endorses the Newtonian break with the mechanical philosophy. This section is one of a few extended passages that has no counterpart in the *Treatise*. In it Hume takes a transparent case of mechanical causation, the collision of billiard balls, and argues that there is nothing that makes this causal connexion more intrinsically intelligible than the cases of causal interaction which the mechanist disparaged as opaque – and thus in need of a micro-mechanical explanation – such as the adhesion of two pieces of smooth marble, the explosion of gunpowder, magnetic attraction, and the power of gravitation. The mechanical philosophy, Hume implies, is based on a false hierarchy of transparency. In fact there are only more or less customary causal relations, and the mechanical ones beguile us, by their very familiarity, into imagining that they reveal the real nature of causal interaction. This leads Hume to explicitly reject the causal monism of the mechanical philosophy:

Elasticity, gravity, cohesion of parts, communication of motion by impulse; these are probably the ultimate causes and principles which we shall ever discover in nature; and we may esteem ourselves sufficiently happy, if, by accurate enquiry and reasoning, we can trace up the particular phenomena to, or near to, these general principles.¹⁹

Here the openly non-mechanical principles of elasticity, gravity and cohesion are placed alongside impulse as equally fundamental to natural science. To attempt to reduce all causation to mechanical interaction, is to ignore the fact that the communication of motion between colliding billiard balls is no more necessary and transparent than the other three causal powers on the list: Hume reminds us that a collision can, in principle, lead to any number of different motions in the two balls, and we only know by experience what the outcome will be. All causal powers, whether mechanical or active, are known through mere regularity that is discovered by repeated experience.

¹⁹ HUME, *Enquiries*, 30–31.

In the same passage, Hume then embraces two other features of the Newtonian view. He argues that the pluralism of causal principles must be disciplined by a principle of parsimony. We cannot multiply the basic causal principles in natural science indefinitely. Rather, as Roger Cotes wrote in his Preface to the second edition of Newton's *Principia*, "the causes of all things are to be derived from the simplest possible principles".²⁰ In a similar spirit, Hume writes that we must aim

to reduce the principles, productive of natural phenomena, to a greater simplicity, and to resolve the many particular effects into a few general causes, by means of reasonings from analogy, experience, and observation.²¹

This is, no doubt, why his causal pluralism is extended to only four fundamental principles.

More importantly for us, Hume then goes on to assert that we should openly admit our ignorance about the real nature of the causal powers in question. Newton famously held that his experimental philosophy only dealt with law-like relations between phenomena. He offered no hypothesis about the *modus operandi* of the forces at work. He did not, like the Scholastics, indulge in pseudo-explanations drawing on occult qualities. Newton remained agnostic about the real nature of the powers whose effects he described with such mathematical precision. We know that mutual gravitational attraction diminishes in inverse proportion to the square of the distance between bodies, but we have no idea what that attractive force actually consists in. Hume expresses the same kind of scepticism about what lies behind the regularities of nature:

[The] ultimate springs and principles are totally shut up from human curiosity and enquiry. [...] The most perfect philosophy of the natural kind only staves off our ignorance a little longer. [...] Thus the observation of human blindness and weakness is the result of all philosophy, and meets us at every turn, in spite of our endeavours to elude or avoid it.²²

²⁰ Roger COTES, "Editor's Preface to the Second Edition." In: Isaac NEWTON, *The Principia*. Cohen, I. B. – Whitman, A. (eds.). Berkeley – Los Angeles: University of California Press 1999, p. 386 (385–399).

²¹ HUME, *Enquiries*, 30.

²² *Ibid.*, 30–31.

Hume tells us, in the Seventh section of the *Enquiry*, in a passage that once again has no counterpart in the *Treatise*, that there is an active power of gravity in nature as well as the inert power, or *vis inertiae*. We can trace the effects of these powers – i.e. the motions of bodies – but we do not comprehend the actual forces themselves, whether inert or active.

This agnostic conclusion about the inner nature of power is the real philosophical import of Newton's achievement for Hume. In his eulogy to Newton, in the *History of England* we are told that:

While Newton seemed to draw off the veil from some of the mysteries of nature, he shewed at the same time the imperfections of the mechanical philosophy; and thereby restored her ultimate secrets to that obscurity, in which they ever did and ever will remain.²³

4. The *Treatise*

So Hume has arrived at a sceptical, Newtonian, view of causal powers in the *Enquiry*. Real powers exist in nature, but their character is inaccessible. But what about the *Treatise*? Was not Hume aware of the Newtonian natural philosophy when writing this earlier work?

The answer, of course, is yes. But there is no evidence that his thinking about causality was in any deep way influenced by Newtonianism. It should not be forgotten that there was a fairly widespread view, particularly popular in France where Hume composed the *Treatise* between 1734 and 1737, that Newton's force-based natural philosophy would ultimately be amenable to a mechanical reduction. Eric Schliesser has recently reminded us that in the late 1730's, on the other side of the channel from Britain, Hume would have met with the view – put forward by such authors as Leibniz, Huyghens and Rohault – that the inverse-square law could be incorporated into mechanical systems.²⁴ French philosophers were wont to ignore Newton's talk of force and action at a distance, and to continue in their attachment to the paradigm of contact action. Bernard Fontenelle, who knew and respected Newton's physics, was still offering a mechanical view of the universe in his

²³ David HUME, *A History of England, from the Invasion of Julius Caesar to The Revolution in 1688*. Vol. 6. Holthoon, F. van (ed.), Charlottesville: InteLex Corporation 2000 (pagination as in 1778 edition), p. 542.

²⁴ Eric SCHLIESSER, "Hume's Attack on Newton's Philosophy." In: *Enlightenment and Dissent*, vol. 25, 2009, p. 173 (167–203).

Théorie des tourbillons cartésiens of 1752, published some 13 years after the *Treatise*.²⁵

There are indications in the *Treatise* that Hume himself still had a residual attachment to the paradigm of the mechanical philosophy which he had imbibed, perhaps not always consciously, from the *Recherche* of Nicolas Malebranche.²⁶ The most obvious sign of this is the explicit condition of spatial contiguity that we have already mentioned, which is given unqualified expression not only in the *Treatise*, as I have shown, but also in the *Abstract*, where Hume writes that “Contiguity in time and place is [...] a requisite circumstance to the operation of all causes”, and where he emphasises, with reference to the collision of billiard balls, that “the two balls touched one another before the motion was communicated”.²⁷

We should also notice that the one clear reference to Newton's physics in the *Treatise*, the famous comparison Hume makes between the association of ideas and gravitational attraction, is undermined by later comments in the same work.²⁸ As J. P. Wright has shown, Hume was in fact happy to assume an underlying mechanical account of association, adopted from Malebranche, in which the flow of the animal spirits in the brain creates furrows or traces along which the spirits will then be inclined to flow again. Indeed, he uses this account to explain certain anomalies in association.²⁹ Hume writes that “these spirits always excite the idea, when they run precisely into the proper traces, and rummage that cell which belongs to the idea”, but that sometimes they spill over into adjacent traces, thus rummaging neighbouring cells.³⁰ This mechanical framework for understanding the

²⁵ Bernard FONTENELLE, *Théorie des tourbillons cartésiens avec des réflexions sur l'attraction*. Paris 1752.

²⁶ The influence of Malebranche on Hume's account of causation has been demonstrated in detail over the years. See, for example, C. W. DOXEE, “Hume's relation to Malebranche.” In: *Philosophical Review*, vol. 25, 1916, no. 5, p. 692–710; R. W. CHURCH, “Malebranche and Hume.” *Revue internationale de philosophie*, vol. 1, 1938, no. 1, p. 143–161; and most importantly Charles McCracken, *Malebranche and British Philosophy*. Clarendon: Oxford 1983, p. 254–290. McCracken finds instances of Hume's reliance on Malebranche that come close to plagiarism. It is noteworthy that Hume instructs his friend Michael Ramsay to prepare himself for the argument of the *Treatise* by reading four books, the first of which is “*La Recherche de la Verité* of Pere Malebranche” (see McCracken, *Malebranche*, p. 254).

²⁷ HUME, *Treatise*, 649.

²⁸ “Here is a kind of ATTRACTION, which in the mental world will be found to have as extraordinary effects as in the natural, and to shew itself in as many and as various forms.” *Ibid.*, p. 12–13.

²⁹ See WRIGHT, *The Sceptical Realism*, e.g. p. 15–16.

³⁰ HUME, *Treatise*, 61.

operations of the imagination in the *Treatise* has been altogether abandoned in the *Enquiry*. Again, in the *Treatise* Hume talks of impressions “striking” on the mind, or ‘striking’ on the senses, or on the eye.³¹ This conjures up a Hobbesian, mechanical picture of sensation, in which impressions are caused by matter in motion. Or, as John Wright has argued, impressions themselves may even include motion.³² This mechanical language has been systematically excluded from the corresponding passages in the *Enquiry*. It would surely be far-fetched to treat this as accidental.

Now, I would not go as far as to say that Hume was a mechanist in the *Treatise*. His opposition to the primary-secondary quality distinction certainly seems to stand in the way of such an assertion.³³ It is also a fact that not all forms of contact action are mechanical – think, say, of a flame licking a pot and turning it black. So the condition of spatial contiguity is not tantamount to the assertion of mechanical causal monism. But I do wish to say that Hume’s thinking about causation has not yet taken on board the active powers of Newtonianism. For Malebranche, matter was quite inert and the only source of causal power was the infinite will of God. Hume, I suggest, preserves Malebranche’s basic model, treating bodies as utterly bereft of active causal power. He ascribes the seeming necessity of causal power not to God, but to the customary transition of our imaginations. He treats necessity as a determination of our minds, rather than a determination of His will.

The efficacy or energy of causes is neither placed in the causes themselves, nor in the deity, nor in the concurrence of these two principles; but belongs entirely to the soul, which considers the union of two or more objects in all past instances. ‘Tis here that the real power of causes is plac’d, along with their connexion and necessity.³⁴

³¹ Such descriptions are to be found at HUME, *Treatise*, 1, 2, 3, and 8. In the *Enquiry* “force and vivacity” qualify impressions themselves, rather than the way they “strike” the mind, or senses. It is no doubt for this reason that Hume states in the *Enquiry*, but not in the *Treatise*, that he is employing the term impression “in a sense somewhat different from the usual”. “Impression”, after all, originally refers to the mark left by a forceful, physical pressure.

³² John P. WRIGHT, *Hume’s A Treatise of Human Nature: An Introduction*. Cambridge: CUP 2009, p. 62.

³³ See HUME, *Treatise*, 225–231. Actually, I tend to think that attachment to the mechanical paradigm for causation does not necessarily mean attachment to the ontological split between primary and secondary qualities. Mechanism can be interpreted as a view not about which qualities exist in objects, but about which qualities in bodies are causally active.

³⁴ HUME, *Treatise*, 166.

To put it crudely, the *Treatise* offers us occasionalism without God. Instead of casting his eyes upwards, like Malebranche, Hume looks inwards. The source for our belief in a necessary connection is the subjective compulsion of our imagination, anticipating the unchanging regularities of nature. The mind then “spreads itself on external objects”,³⁵ lending to constant conjunctions the aura of necessity.

The interpretation of the *Enquiry* I have already advanced sees an important addition to this story. Hume supplements the regularity of causation, and the subjective feeling of necessity, with the action of real, albeit unknown, powers in nature. The theory of the *Enquiry* does, of course, share many significant features with the one put forward in the *Treatise*. It remains true that the sensible qualities of body reveal no causal powers, and that our idea of necessary connection is derived from our own imaginations. But now there is a new ontological dimension. There are hidden, non-mechanical, connections that underlie the active powers in nature. We are privy only to the regular effects of these powers, and their real nature lies beyond our ken. In the *Enquiry* causal realism and scepticism are born.

5. An Analogy in the *Dialogues*

The new account of causation in the *Enquiry* does create a tension in Hume's overall empiricist standpoint. As the Old Humeans have rightly pointed out, the postulation of secret connexions does not harmonise well with the “copy principle”, according to which all ideas are derived from impressions. The causal realism of the *Enquiry* must grant us some idea of necessary connection in nature, when we posit unknown causes underlying the regularity of events. Yet how can we come by such an idea when our impressions lack any discernible necessary connection between them? Hume may have escaped from the mechanical paradigm, and enriched his view of nature, by granting it real causal depth, but his new theory seems to offend against his own account of the intentionality of thought.

In the *Dialogues Concerning Natural Religion* we find this tension has been relieved. Some relief is, of course, provided by the very fact that Hume's theory of causation is put forward here without any reference to the “copy principle” of the *Treatise* and *Enquiry*.³⁶ Hume is certainly still an empiricist

³⁵ *Ibid.*, 167.

³⁶ David HUME, *Dialogues Concerning Natural Religion*. Coleman, D. (ed.). Cambridge: CUP 2007, Part 2, p. 17–28.

in the *Dialogues* – empiricism conspires to defeat Demea’s a priori argument for God’s existence – but he does not display an attachment to the radical concept-empiricism of the early works, or the strictures about meaning associated with it.

Now, it will almost certainly be objected that there are other reasons why the copy principle does not appear in the *Dialogues*. In particular it is not a technical work on the human understanding, like the *Treatise* and the *Enquiry*. So let us turn to a specific passage in the *Dialogues* that offers us a constructive way of making sceptical realism compatible with Hume’s radical empiricism. The passage in question is uttered by Philo, whom interpreters generally regard as the interlocutor most faithfully representing the author. Philo has already offered us a startling variety of hypotheses about the underlying nature of the active powers of nature – suggesting, for example, that they may be vegetative powers, or powers of an animating world soul – thus showing up the narrow assumptions of Cleanthes’ design argument which treats the world as a “machine”. Philo comes to express a Newtonian agnosticism about the real nature of necessary causal connections in the universe, which is quite in keeping with the sceptical realism of the New Hume. The deep necessities of nature are inaccessible to the human mind, though their presence is not to be doubted:

Were the inmost essence of things laid open to us, we should then discover a scene, of which, at present, we can have no idea. Instead of admiring the order of natural beings, we should clearly see that it was absolutely impossible from them, in the smallest article, ever to admit of any other disposition.³⁷

Philo argues for this theme most systematically in Part 9 where he offers us the crucial analogy:

It is observed by arithmeticians, that the products of 9 compose always either 9 or some lesser product of 9; if you add together all the characters, of which any of the former products is composed. Thus, of 18, 27, 36, which are products of 9, you make 9 by adding 1 to 8, 2 to 7, 3 to 6. To a superficial observer, so wonderful a regularity may be admired as the effect either of chance or design; but a skilful algebraist immediately concludes it to be the work of necessity, and demonstrates, that it must forever result from the nature of these numbers. Is it not probable, I ask, that the whole economy of the universe is conducted by

³⁷ *Ibid.*, p. 50.

a like necessity, though no human algebra can furnish a key, which solves the difficulty?³⁸

It must be remembered that Hume never, in any of his works, denies our knowledge of necessary mathematical truths. Mathematical examples are provided, in the *Enquiry*, for the relations of ideas which are “intuitively or demonstratively certain”.³⁹ We are now invited to use the example of mathematical demonstration in helping us comprehend the secret necessities of nature. Philo asks us to compare the relation between the superficial regularities of the economy of nature and the deep underlying causal necessities, with the relation between the superficial regularities in the digits composing the products of 9 and their deeper mathematical determination.

It is important to emphasise that Philo is not just claiming that causal necessity is a form of mathematical, or geometrical, necessity. That is not an option for Hume given his view that mathematical necessities are ultimately tautologies, and cannot therefore determine the relation between separate events, the order of which can always be imagined to be otherwise. Philo's point is more subtle. He is offering us an analogy between two relations: these are (i) the relation between certain superficial characteristics of arithmetic and the deep nature of their mathematical demonstration on the one hand, and (ii) the relation between superficial regularities of natural phenomena that we observe and a demonstrative physics of nature which would explain those regularities. This analogy allows Hume to bypass the problem of summoning up the bare idea of necessary connexion in nature. It is sufficient that we have an understanding of the role it plays. Hume is not saying causal necessity is mathematical necessity. He is saying that the two forms of necessity have analogous roles in producing the superficial regularities of their different spheres: numbers and natural phenomena.

The *Dialogues* can therefore be viewed as strengthening Hume's mature, sceptical realist, theory of causality. We are shown how to make intelligible the assertion of real, but unknown, natural necessity within the strictures of Hume's theory of intelligibility.

³⁸ *Ibid.*, p. 66.

³⁹ HUME, *Enquiries*, 25.