**Hume on the Prospects for a Scientific Psychology**

Abstract: In an *Enquiry Concerning Human Understanding,* Hume distinguishes between two approaches to psychology: first, an attempt at what he calls ‘mental geography’ and, second, an approach which he compares to Newton’s project in astronomy. I explain the Hume’s vision of Newtonian psychology, and then I explain its application to Hume’s psychological theory in the first *Enquiry.* Hume’s attempt to explain causal inference in Part 2 of Section 5 is shown to be an attempt at Newtonian psychology: it’s speculative, explanatory, and attempts to enunciate a psychological law. The paper closes by asking whether Hume succeeded in his attempt to put psychology on Newtonian foundations.

# Two Species of What?[[1]](#footnote-1)

In Section 1 of his *Enquiry Concerning Human Understanding,* Hume draws a distinction between two approaches, one easy and one abstruse, to what he calls “moral philosophy, or the science of human nature” (*EHU* 1.1).[[2]](#footnote-2) The goal of the first approach is to paint virtue “in the most amiable colours; borrowing all helps from poetry and eloquence, and treating their subject in an easy and obvious manner” (*EHU* 1.1). The goal of the second approach is “to find those principles, which regulate our understanding, excite our sentiments, and make us approve or blame any particular object, action, or behaviour” (*EHU* 1.2). That is, the goal of the second approach to find the principles that govern the mind.

 Neither term in Hume’s initial disjunctive description of the discipline (‘moral philosophy’ or ‘the science of human nature’) seems ideal. Moral philosophy seems like an odd expression to describe the science that describes the principles that regulate human understanding. ‘Professor of Moral Philosophy’ was, as M.A. Stewart observes, the academic position that Hume that doesn’t get in 1745 at the University of Edinburgh, and its province extends to topics that we today count as part of psychology.[[3]](#footnote-3) Sometimes, as in the subtitle of the *Treatise* and in his comparison of moral and mathematical sciences at the beginning of Section 7 of the first *Enquiry,* Hume uses the term as broadly he does here, so as to include all of the principles that regulate the human mind. More often he uses ‘morals’ as we do to mean *ethics*, for example in the discussion elsewhere in the first section about the foundations of morals (*EHU* 1.2) and in title of the second *Enquiry* (“Concerning the Principles of Morals”). The ‘science of human nature’ is fine as an expression for the project pursued by the second species of philosopher, but not the most exact expression for works that attempt to inspire the love of virtue in their readers.

 The terms that Hume uses for the first approach to this sort of inquiry, namely, ‘easy,’ ‘obvious,’ and ‘humane,’ all seem apt given the other things that he says about such approaches. None of the terms that he gives for the second sort of project seem entirely well chosen, either because they don’t fit the way that this sort of study of the mind is actually practiced his predecessors or because they don’t fit the way that Hume thinks that they ought to be practiced. He thinks that most attempts at the second sort of psychology as it is actually practiced end up on the wrong track, so, I say, it’s misleading to call them ‘accurate.’ If they are ‘profound,’ it’s only in their ambition. On the other hand, Hume thinks that the second sort of psychology ought to be well written, so it’s misleading to call the ideal form of the genre ‘abstruse,’ and he thinks that its first principles ought to be discovered by experience, so it’s misleading to call it abstract.

 We may call the generic discipline that Hume is interested in in the opening lines of the *Enquiry* ‘psychology.’ The first approach is interested in the applications of psychology to life to help us better and more sociable lives. The second is interested in the principles regulating the understanding, passions, and our moral affections. If ‘psychology’ is anachronistic in this context, it’s only by the slimmest margin. The first uses of the term are from the 16th century to describe the science of the soul. One of the first uses in English of the term ‘psychology’ to describe the science of the mind without being committed to a substantial soul is David Hartley, in his *Observations on Man* published the first year after Hume’s first *Enquiry*.[[4]](#footnote-4) Hartley divides natural philosophy into the follow parts: “mechanics, hydrostatis, pneumatics, optics, astronomy, chemistry, the theories of the several manual arts and trades, medicine and psychology, or the theory of the human mind, with that of the intellectual principles of brute animals.[[5]](#footnote-5)

Hartley says in the preface to his *Observations on Man* that reading John Gay’s *Preliminary Dissertation Concerning the Fundamental Principle of Virtue of Morality* eighteen years earlier sets him on a path of examining the consequences of association for morality and of its possible physical causes.[[6]](#footnote-6) In the first chapter of the book, Hartley says that he develops his doctrine “from what Mr. Locke and other ingenious persons since his Time, have delivered concerning the Influence of *Association* over our Opinions and Affections.”[[7]](#footnote-7) Barbera Oberg reasonably remarks, “Given Hartley’s wide reading in theology and philosophy—Locke, Joseph Butler, Descartes, Malebranche, Leibniz—and his acknowledgement that he had read other sources on the subject of association, it is probable that he would also have read Hume.”[[8]](#footnote-8)

 Oberg also asserts, “for Hobbes, for Locke, and for Hume . . . the theory of association was only incidental to other concerns. For Hartley, the association of ideas explained the working of the human mind.”[[9]](#footnote-9) This contrast, however, is incompatible with Hume’s own presentation of his work. In the abstract of the *Treatise,* written under a guise of anonymity, he claims, “Thro' this whole book, there are great pretensions to new discoveries in philosophy; but if any thing can intitle the author to so glorious a name as that of an *inventor*, 'tis the use he makes of the principle of the association of ideas, which enters into most of his philosophy” (Abstract ¶35). Given that Hume very probably influences Hartley’s account and given the centrality of principles of association to both of their projects, it would be unreasonable to say that Hartley is doing psychology while Hume is doing something else.

 Hume implies that the successful pursuit of abstruse psychology would constitute a science. The second approach to psychology aims at finding “those original principles, by which, in every science, all human curiosity must be bounded” (*EHU* 1.2). In defense of the abstruse approach, Hume writes, “The sweetest and most inoffensive path of life leads through the avenues of science and learning” (*EHU* 1.10). As Hume understands it, the second approach to psychology has two parts, one of which attempts “barely to know the different operations of the mind” and constitutes, “no inconsiderable part of science” (*EHU* 1.13). In the next paragraph, Hume reassures us about the possibility of this kind of mental description by saying that we shouldn’t worry “that this science is uncertain and chimerical” (*EHU* 1.14). In describing his hopes for a second, explanatory description of the laws governing the mind, Hume says that others have pursued this project with partial success and that “more ardent application may bring these sciences still nearer their perfection” (*EHU* 1.15).

 Using the term ‘psychology’ for the first, easy and humane approach to ‘moral psychology or the science of man’ is just a piece of shorthand, a way of avoiding the ungainly disjunctive expression ‘moral philosophy or the science of human nature.’ But the core topics of the abstruse investigation that Hume sketches in the first section of the first *Enquiry* are the principles that regulate the mind, and he envisions that this discipline is or may become a science. Hume has a vision of a scientific psychology, and we may be curious to learn what it is.

# The Challenge of Common Sense Psychology

According to Hume, easy psychology is generally more reliable than previous attempts at abstruse psychology. Humane psychologists aren’t trying to come up with original hypotheses about the explanatory principles of the mind. In their project of inspiring good thoughts and good behavior, they assume the truth of common-sense psychology and are thus less likely to make substantial errors:

a philosopher, who purposes only to represent the common sense of mankind in more beautiful and more engaging colours, if by accident he falls into error, goes no farther; but renewing his appeal to common sense, and the natural sentiments of the mind, returns into the right path, and secures himself from any dangerous illusions (*EHU* 1.4).

Someone who wants to paint virtue in attractive colors doesn’t attempt to improve on common sense and folk psychology. In contrast, abstruse philosophers are indifferent towards what most people think. They set off from their own premises and embark on a chain of inferences. When there’s one mistake in the chain, the whole endeavor to go off the rails:

It is easy for a profound philosopher to commit a mistake in his subtile reasonings; and one mistake is the necessary parent of another, while he pushes on his consequences, and is not deterred from embracing any conclusion, by its unusual appearance, or its contradiction to popular opinion (*EHU* 1.4).

The practitioner of this sort of inquiry into the mind gains a temporary reputation from “from the caprice or ignorance of their own age,” but such philosophers haven’t acquired a reputation from later thinkers, who are better judges (*EHU* 1.4).

 We might doubt Hume’s sincerity in his endorsement of the reliability of common sense. In his essay “The Standard of Taste,” he implies that there is a tension between common sense and the skeptical philosophy, though in the particular case under discussion, the subjectivity of aesthetic taste, common sense is said to agree with philosophy (“common sense, which is so often at variance with philosophy, especially with the sceptical kind, is found, in one instance at least, to agree in pronouncing the same decision,” “Standard,” p. 226). In spite of this purported tension, every time Hume says in his own voice that some doctrine represents common sense, he endorses the doctrine. Common sense tells us, he tells us, that knowledge of Caesar’s existence will be preserved by knowledge of printing (*T* 1.3.13.4), it tells us that the desire for rewards causes action (*T* 2.3.2.5), that there’s no essential difference between high and low (*T* 2.3.8.8), that revolt against tyrants is morally permissible (*T* 3.2.9.4), that there’s normally an obligation to obey the law (*T* 3.2.10.7), that there is a difference between right and wrong (*EPM* 1.2), and that perfect equality of possessions is impractical (*EPM* 3.26). Hume’s preferred version of skepticism, mitigated or academic skepticism, is the result of correcting Pyrrhonism “by common sense and reflection” (*EHU* 12.24). The lesson these passages is that Hume thinks that common sense is generally reliable, and that the promise of doing better than common sense is a weighty one.

 In Hume’s Abstract of the *Treatise,* we have a version of the competition between the two species of philosophy. There he asserts,

Most of the philosophers of antiquity, who treated of human nature have shewn more of a delicacy of sentiment, a just sense of morals, or a greatness of soul, than a depth of reasoning and reflection. They content themselves with representing the common sense of mankind in the strongest lights, and with the best turn of thought and expression, without following out steadily a chain of propositions, or forming the several truths into a regular science. (Abstract ¶1).

But, according to Hume, we have reason to hope for better and “‘tis at least worth while to try if the science of *man* will not admit of the same accuracy which several parts of natural philosophy are found susceptible of. There seems to be all the reason in the world to imagine that it may be carried to the greatest degree of exactness” (Abstract ¶1).

 The challenge for a defender of scientific psychology is to show how it can be more accurate than common-sense psychology. Common sense psychology can call upon the collective experience of humanity and on our innate inclinations. A scientific psychology that purports to be superior to common sense and also independent of common sense has its work cut out for it.

# Mental Geography

Hume defends the possibility of scientific psychology by dividing the prospective field in two: a descriptive part and an explanatory part. The first, he calls ‘mental geography’; the second, we might call a Newtonian science of mind. For both fields, he presents paradigms of success as models for emulation and reasons for hope. For the descriptive psychology he calls mental geography, he gives some general reasons believing in its possibility.

By “mental geography,” Hume means the “delineation of the distinct parts and powers of the mind” (*EHU* 1.13). Its goal is “barely to know the different operations of the mind, to separate them from each other, to class them under their proper heads” *(EHU* 1.13). Mental geography, as Hume uses the expression, is merely descriptive and taxonomic. Once we have built a solid and certain description of mental phenomena, Hume hopes we can find explanatory laws and forces in psychology.

 Hume concedes that it’s difficult to redescribe the mind through reflection independently of tradition. Even though “the operations of the mind” are “most intimately present to us” when we reflect on them they seem obscure and hard to distinguish (*EHU* 1.13).[[10]](#footnote-10) Mental objects are delicate, so they change; they are “too fine to remain long in the same aspect or situation; and must be apprehended in an instant,” so to understand them, one needs “superior penetration, derived from nature, and improved by habit and reflection” (*EHU* 1.13).

Even so, Hume believes we can reach a high degree of certitude with respect to mental geography. He expresses this optimism in strong words: “Nor can there remain any suspicion, that this science is uncertain and chimerical; unless we should entertain such a scepticism as is entirely subversive of all speculation, and even action” (*EHU* 1.14). The only way to doubt the possibility of knowledge of mental geography, according to Hume, is to embrace Pyrrhonian skepticism.

The justifications that Hume gives for the possibility of this science don’t seem to support such strong words. One appeals to the successes of others and the other two turn on our ability to introspect our faculties.

In the first two editions of the first *Enquiry,* Hume cites the successes of Francis Hutcheson and Joseph Butler in arguing for the possibility of mental geography. Hutcheson showed that the faculty by which we distinguish truth from falsehood is distinct from the faculty by which we distinguish virtue and vice “by the most convincing arguments” (*EHU* p. 232). Butler showed the impropriety of the standard division between selfish and benevolent passions and “prov'd, beyond all Controversy, that even the Passions, commonly esteem'd selfish, carry the Mind beyond Self, directly to the Object” (*EHU* p. 234). “These two instances,” according to Hume, “may suffice to show us the Nature and Importance of this Species of Philosophy” (*EHU* p. 234). Hume thinks that since Butler and Hutcheson succeeded, so can we.In the later editions of the *Enquiry,* takes the details out of his successful case studies and gives a truncated justification, “Some instances, especially late ones, of success in these enquiries, may give us a juster notion of the certainty and solidity of this branch of learning” (*EHU* 1.14). How good a justification this of mental geography depends on one’s opinion of Butler’s and Hutcheson’s work.

The two other justifications that Hume gives for thinking that that moral geography is possible appeal to our ability to see mental faculties through introspection. The first argument just appeals to the ability of reflection to distinguish between distinct objects of introspection:

It cannot be doubted, that the mind is endowed with several powers and faculties, that these powers are distinct from each other, that what is really distinct to the immediate perception may be distinguished by reflection; and consequently, that there is a truth and falsehood in all propositions on this subject, and a truth and falsehood, which lie not beyond the compass of human understanding (*EHU* 1.14).

The mind has distinct faculties, distinct faculties are distinguishable by immediate perception, what’s distinct to immediate perception is distinguishable to reflection, and what can be distinguished by reflection can be known by the understanding, so the distinct powers of the mind can be known by the understanding. It’s a straightforward appeal to the transparency of the mind, applied to psychological faculties.

Hume follows up this defense with another, less straightforward argument:

There are many obvious distinctions of this kind, such as those between the will and understanding, the imagination and passions, which fall within the comprehension of every human creature; and the finer and more philosophical distinctions are no less real and certain, though more difficult to be comprehended (*EHU* 1.14).

Some distinctions between faculties are drawn by every human being. If everyone can draw rightly some distinctions, then some other distinctions can be drawn by those who are better at drawing such distinctions.

I have my doubts about both of these arguments. I’m not sure that the basic features of the mind’s faculties are accessible to immediate perception. I’m also not sure that the fact that common-sense psychology draws some distinctions shows that a present-day investigator should be optimistic about the prospect of discovering new and better distinctions.

These appeals to the accessibility of mental faculties to reflection seem a little incongruous given other things that Hume asserts. The faculties that he says in Section 1 of the *Enquiry* are known to everyone (will, understanding, imagination, passion) are all present in the *Treatise.* They don’t seem to be immediately epistemically accessible in the earlier work, however. There he famously declares, “when I enter most intimately into what I call *myself*, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and never can observe any thing but the perception” (*T* 1.4.6.3), which seems to exclude knowledge of our faculties by reflection. Indeed, the theory of the mind offered at the end of that chapter on personal identity seems to restrict the constituents of the mind to perceptions: “the true idea of the human mind, is to consider it as a system of different perceptions or different existences, which are link'd together by the relation of cause and effect, and mutually produce, destroy, influence, and modify each other” (*T* 1.4.6.19).

It may be that Hume’s thoughts on the place of faculties in the furniture of the mind change over time. In the *Dialogues Concerning Natural Religion,* written in the 1750s*,* Hume has Demea declare, “What is the soul of man? A composition of various faculties, passions, sentiments, ideas; united, indeed, into one self or person, but still distinct from each other” (*DNR* p. 159). This listing expands the constituents of the self to include faculties. Perhaps the new list reflects a change of Hume’s opinion about the metaphysics of mind. Still, it’s a little odd to go from thinking that denying that anything besides perceptions is present to introspection to saying that only a Pyrrhonian would deny that mental faculties are available to introspection.

The other incongruity is that the defense of mental geography by appealing to the obviousness of faculties doesn’t seem to fit with how mental geography is practiced in the *Enquiry.* The principles enunciated in the *Enquiry,* whether these are explanatory or not, seem to govern perceptions and the relations between them. Hume’s arguments for them seem to turn on our internal observations of our perceptions and the relations between them, and not on a distinct awareness of the faculties they belong to.

Tamás Demeter’s complaint about scholars who “translate Hume’s language of the faculties into ‘process’ talk”[[11]](#footnote-11) highlights the difficulty. If Hume has processes in mind by faculties, why does he talk about faculties? On the other hand, if, as Demeter claims, “Instead of *from* faculties, Hume argues *to* them; they are not the beginning but the aim of proper, experimental inquiry that reveals the characteristic of faculties” (“Fodor’s Guide,” 5364), how is the ascent from the study of faculties to the Newtonian study of mental laws and forces supposed to work?

I don’t think we should get too hung up on the role of faculties in Hume’s justification of mental geography. His descriptions of the relations and dependences between perceptions as we find in the Copy Principle and the Principles of Association have to count as descriptions of mental faculties or the gap between proclaimed method and practice will be too great. Hume conceptualizes these generalizations as tied to mental faculties (mostly the imagination in the first *Enquiry*) but that isn’t an essential part of descriptive mental geography.

The reason that Hume says that mental geography is trustworthy if we aren’t going to be Pyrrhonists is that he thinks of its generalizations as simple inductions, that is, as arguments of the form: all observed F are G, so, probably, all F are G. In the first *Enquiry,* he uses arguments that move from a premise that if we observe a number of perceptions and they all turn out to have a feature, to the conclusion that all perceptions have that feature. In Section 12 of the *Enquiry,* Hume raises the worry about simple induction that “nothing leads us to this inference but custom or a certain instinct of our nature” (*EHU* 12.22). If Pyrrhonists were successful is persuading people to avoid this and similar inferences, “All discourse, all action would immediately cease; and men remain in a total lethargy, till the necessities of nature, unsatisfied, put an end to their miserable existence” (*EHU* 12.23). Something like this must be behind Hume’s claim that to reject the possibility of mental geography is to reject all speculation and action.

 Though it may be useful to distinguish between mental geography and a more theoretical approach to psychology, I don’t think that Hume makes a great leap forward in describing mental phenomena in the first *Enquiry.* On the standard stories that psychology tells about its own history, scientific psychology begins in the 1860s with the work of Gustav Fechner, Hermann von Helmholz, and Wilhelm Wundt.[[12]](#footnote-12) They figure out ways to systematize psychological experiments in ways that allow for clarity and replication. Of course, not all psychological research today is done in laboratories and not every problem of replicability has been solved. Still, scientific psychology today marks its origin with the rise of the reproducible psychology experiment in the nineteenth century, something that’s absent from Hume’s treatment of mental geography.

# Brevity and Error

Hume gives three ways to guard against error in the last paragraph of Section 1. He tells us that the vices of abstract philosophy can be overcome “by care and art, and the avoiding of all unnecessary detail” (*EHU* 1.17). With respect to care, he earlier claims that if the abstruse version of philosophy is “carefully cultivated by several,’ it would diffuse throughout society (*EHU* 1.9), that we “must cultivate true metaphysics with some care, in order to destroy the false and adulterate” (*EHU* 1.12). He raises the hope “that philosophy, if cultivated with care, and encouraged by the attention of the public” might succeed in discovering a Newtonian science of mind and asserts that “care and attention” is required in order to discover whether such a science is possible (*EHU* 1.15). As for the value of art, as we’ve seen, Hume thinks that especially skillful mental geographers might observe features of the mind that have evaded common-sense psychology.

 The most interesting of Hume’s three suggestions of how to improve the defects of abstract philosophy is that we ought to avoid unnecessary details. This is one of Hume’s central diagnoses of what can go wrong in metaphysics, and it explains some of the most important differences between the *Treatise* and the first *Enquiry* in both content and form.

 Recall Hume’s explanation of how abstract psychology has fallen into error in the past. A profound philosopher makes a mistake, that mistake gives rise to others, and the philosopher is unwilling to change doctrine to match common opinion. One way of fending off this series of errors is to make fewer inferences.

 In Section 7, Hume accuses Malebranche of making this sort of mistake. Of occasionalism, he writes,

Though the chain of arguments, which conduct to it, were ever so logical, there must arise a strong suspicion, if not an absolute assurance, that it has carried us quite beyond the reach of our faculties, when it leads to conclusions so extraordinary, and so remote from common life and experience. We are got into fairy land, long ere we have reached the last steps of our theory; and there we have no reason to trust our common methods of argument, or to think that our usual analogies and probabilities have any authority (EHU 7.24)

Though the occasionalists believe that they have experience and verisimilitude on their side, these sorts of arguments don’t apply outside of common life and common experience. “We may be assured,” Hume tells us, that such arguments have “no authority, when we thus apply it to subjects, that lie entirely out of the sphere of experience” (*EHU* 7.24).

 He promises to revisit this topic in Section 12 (“on this we shall have occasion to touch afterwards,” *EHU* 7.24). There he argues that we can sustain interesting derivations in mathematics, and we can’t in other subjects. The difference lies in a difference in their constituent ideas. Ideas of mathematics are homogeneous, and, “As the component parts of quantity and number are entirely similar, their relations become intricate and involved; and nothing can be more curious, as well as useful, than to trace, by a variety of mediums, their equality or inequality, through their different appearances” (*EHU* 12.27). But those are the only ideas that lend themselves to such inferences: “all other ideas are clearly distinct and different from each other, we can never advance farther, by our outmost scrutiny, than to observe this diversity” (*EHU* 12.27). So, it seems, longs chains of inferences containing the ideas of psychology won’t be reliable. Hume’s considered recommendations are the following: be careful, make short inferences, and the explanatory principles that you appeal to ought to be justified by experience.

 Hume worries about long inferences already in the *Treatise.* He says that because of the difficulties in fixing proportions in geometry, “There remain, therefore, algebra and arithmetic as the only sciences, in which we can carry on a chain of reasoning to any degree of intricacy, and yet preserve a perfect exactness and certainty” (*T* 1.3.1.5). As a psychological matter, he observes, “when the imagination is carry'd thro' a long chain of connected arguments, however infallible the connexion of each link may be esteem'd” persuasive is less lively than cases where the inference is more direct (*T* 1.3.13.3). In inferences from cause to effect, with “the connexion dependent on a long chain of objects” we believe the conclusion with a diminished probability (*T* 1.3.13.19).

 Notwithstanding this wariness about long inferences, in the Advertisement for the *Treatise,* Hume implies that the work’s first two books “make a compleat chain of reasoning by themselves.” Readers might reasonably worry that something will go wrong somewhere in such a long chain. In the Abstract, Hume doesn’t confess to any mistakes, but he does say that the *Treatise* “has been complained of as obscure and difficult to be comprehended, and I am apt to think, that this proceeded as much from the length as from the abstractedness of the argument” (Abstract ¶2).

 In his later writings, Hume takes his own advice. He applies the general worry that long chains of inference are likely to contain a corrupting mistake and applies it to his own work. The chains of inference are made shorter and material that’s irrelevant to the main points that he wants to make are omitted. In 1751 letter he writes to Gilbert Eliot discouraging him from reading the *Treatise,* Hume describes that work as “very defective” (*Letter* #73 1.158). According to Hume, “By shortening & simplfying the Questions, I really render them much more complete. *Addo dum minuo,*” I add while taking away. Obviously, there’s room to disagree with Hume about how defective the *Treatise* is, and there are certainly good things in that work that he doesn’t reproduce in later writings. My point is that Hume’s diagnosis of how the abstruse philosopher goes wrong with a long chain of reasoning, the brevity of the two *Enquiries* and the *Dissertation on the Passions,* and his analysis of his own work in his letter to Eliot all fit together as a coherent methodological principle: avoid unnecessary inferences.

 The first *Enquiry* is originally titled “Philosophical Essays Concerning Human Understanding” which carries a suggestion that the sections are independent of one another. According to Stewart, “that the whole collection might be presented as something more than the sum of its constituent essays seems to have occurred to Hume first around 1758, when he retitled it *An Enquiry concerning Human Understanding*.”[[13]](#footnote-13) The change of title does signify a change in presentation, but I worry that Stewart’s remark understates the unity of the work as it was originally presented. Section 5 is a solution to a problem presented in Section 4, Section 7 appeals to the copy principle from Section 2 and the theory of causal inference in Section 5. Part 2 of section 5 is said to not be needed for the rest of the *Enquiry,* which means that Part 1 of Section 5 is needed. Section 8 is straightforwardly dependent on the analysis of causation in Section 7, and Section 9 is a justification of the central claim in Section 5, Part 1.

 Still, it’s true that calling the work ‘essays’ suggests a certain modularity. Hume’s mode of presentation makes later sections somewhat immune to errors in the earlier sections. If someone accepts Hume’s account of reasoning concerning matters of fact and agrees that rejecting such reasoning would undermine all thought and action, they might be more likely to accept his arguments on miracles. Still, one could accept the arguments in his essay on miracles without believing anything else that Hume writes in the first *Enquiry.*

# Newtonian Psychology

According to Hume, we may reasonably hope to do better than mental geography. We may, he argues, hope to find explanatory principles. His model for optimism is Newton’s account of the solar system:

Astronomers had long contented themselves with proving, from the phænomena, the true motions, order, and magnitude of the heavenly bodies: Till a philosopher, at last, arose, who seems, from the happiest reasoning, to have also determined the laws and forces, by which the revolutions of the planets are governed and directed (*EHU* 1.15).

Before Newton, according to Hume, astronomers merely described the motion of the planets. Newton finds the laws and the fundamental force that explains those descriptive patterns.

 Hume’s ambition is to find explanatory mechanisms and principles that lie beneath the surface. By carrying out this Newtonian project, we may “hope, that philosophy, if cultivated with care, and encouraged by the attention of the public, may carry its researches still farther, and discover, at least in some degree, the secret springs and principles, by which the human mind is actuated in its operations?” (*EHU* 1.15). The only reason that Hume gives for thinking that a similar feat can be carried out in the mind is that “It is probable, that one operation and principle of the mind depends on another; which, again, may be resolved into one more general and universal” (*EHU* 1.15). Since operations of the mind probably stand in explanatory relations to one another, we can probably discover some of these relations.

 Newtonian psychology is more ambitious than mental geography and correspondingly, Hume has less confidence in it. According to him, “how far” Newtonian psychology “may possibly be carried, it will be difficult for us, before, or even after, a careful trial, exactly to determine” (*EHU* 1.15). That is, even after we’ve acquired collected evidence for our hypotheses, it can be hard to know whether we are right. All that Hume wants in mental geography is getting general descriptive principles right. In Newtonian science, one is looking for explanatory depth, and new epistemic dangersloom here. Positing new laws and forces goes beyond mere description and can go wrong in ways that mere description cannot.

Eric Schliesser and Demeter rightly observe that in the *Treatise,* Hume offers an operationalist interpretation of what the existence of a vacuum means on “the Newtonian philosophy . . . rightly understood” (*THN* 1.2.5.26n12), namely, that “bodies are said to be plac'd after such a manner, as to receive bodies betwixt them, without impulsion or penetration” (*THN* 1.2.5.26n12).[[14]](#footnote-14) So, according to Schliesser and Demeter, Hume’s discussion of Newton’s in Section 1 of the *Enquiry* “must be interpreted in light of his deflationary commitments.”[[15]](#footnote-15) If we do that, however, we won’t be able to understand Hume’s distinction between mental geography and Newtonian psychology, and we want to understand that distinction. I would rather say, following James Hill, that Hume’s later realism about Newtonian forces is one of the main differences between the *Treatise* and the first *Enquiry.*[[16]](#footnote-16)

Though I suppose that Hume changes his views on the metaphysics of Newtonian laws between the *Treatise* and the first *Enquiry,* I don’t suppose that he changes the basic principles in his theory of causal inference between the two works. In the letter to Eliot that he writes to discourage his friend from reading the *Treatise,* he states, “the philosophical Principles are the same in both” (*Letters* #73, 1.158) Hume’s claims about Newton as a model for psychology are new in the *Enquiry.* He appeals to Newton to justify and motivate his account, but I don’t think that this appeal has anything to do with how he comes up with his principles before composing the *Treatise.*

# Categorizing Psychological Principles in the *Enquiry*

By my count, there are five psychological principles advanced in the *Enquiry.* The copy principle in Section 2, Hume’s enumeration of rules of association in Section 3, the principle of customary inference given in Part 1 of Section 5, the principle of the transfer of vivacity across associated perceptions, given in Part 2 of Section 5, and the principle of the partial transfer of vivacity in the case of non-uniform experiences given in Section 6. I think of the analyses of causation and necessity in Section 7 as applications of the copy principle and the principle of customary inference, I think of the defense of mental determinism as an application of the analysis of causation in Section 7, and I think of the account of animal psychology in Section 9 as a defense of the principle of customary inference.

 The first three of these principles, the copy principle, the list of rules of association, and the principle of customary inference are all, I think, supposed to be examples of mental geography. In justifying the copy principle, Hume argues,

We may prosecute this enquiry to what length we please; where we shall always find, that every idea which we examine is copied from a similar impression. Those who would assert, that this position is not universally true nor without exception, have only one, and that an easy method of refuting it; by producing that idea, which, in their opinion, is not derived from this source (*EHU* 2.6)

In every instance we’re aware of, simple ideas are copied from similar impressions, and there are no counter examples. This is a simple induction from enumerated instances

Hume also justifies the Copy Principle by appealing to the purported fact that “If it happen, from a defect of the organ, that a man is not susceptible of any species of sensation, we always find, that he is as little susceptible of the correspondent ideas. A blind man can form no notion of colours; a deaf man of sounds.” (*EHU* 2.7). Hume then lists a few other cases of ideational privation (Laplanders don’t have ideas of the taste of wine; selfish people can’t conceive of generosity.) This is another case of simple induction, with the “singular” exception of the missing shade of blue.

Hume thinks that all of his readers that will grant that his principles of association “serve to connect ideas” (*EHU* 3.3). That he has given an exhaustive list should be decided by running

over several instances, and examine carefully the principle, which binds the different thoughts to each other, never stopping till we render the principle as general as possible. The more instances we examine, and the more care we employ, the more assurance shall we acquire, that the enumeration, which we form from the whole, is compleat and entire (*EHU* 3.3).

Every instance of association of ideas that we examine falls into one of Hume’s three kinds, so, very probably, they all do.

Hume does not explicitly rest the principle of customary inference on simple induction, but he does say that his description is non-explanatory. Speaking of someone who was created suddenly with fully developed faculties, he writes, after “he has acquired more experience, and has lived so long in the world as to have observed similar objects or events to be constantly conjoined together; what is the consequence of this experience? He immediately infers the existence of one object from the appearance of the other” (*EHU* 5.4). We can call this process, if we like, custom, but “By employing that word, we pretend not to have given the ultimate reason of such a propensity. We only point out a principle of human nature, which is universally acknowledged, and which is well known by its effects” (*EHU* 5.5). This is description, not explanation.

 Hume’s account of the generation of belief in Part 2 of Section 5 is supposed to be an attempt at Newtonian psychology. I say this for three reasons: first, because it’s supposed to explain the customary causal inference described in Part 1; second, because it includes a statement of a possible psychological law; and, third, because he describes it as being less certain than the claims in the other parts of the *Enquiry.*

In Part 2 of Section 5, Hume gives a conjectural explanation of the mechanism underlying this customary inference. He repeats material from the Appendix giving his account of belief as a *sui generis* feeling (*EHU* 5.12=*T* 1.3.7.7) and repeats some of the arguments that he offered in the *Treatise* for thinking that vivacity spreads across associated perceptions (*EHU* 5.15-17=*T* 1.3.8.3-6).[[17]](#footnote-17) If repetition establishes a customary association between perception, then Hume will have explained the principle of customary inference. That’s the sort of explanation that he holds out hope for in Section 1. The explanatory relation between his proposed law and the principles falling under it takes him beyond mere mental geography and into a Newtonian science of the mind.

 If Hume’s proposed law is true, a similar process works for ideas associated by resemblance or contiguity. Vivacity moves from a stimulus to an associated perception. In understanding the content of the theory of the second part of Section 5, we should understand the development of his thinking about vivacity. In the main part of the *Treatise,* he asserts that perceptions only vary along a single dimension of vivacity (*T* 1.3.7.5).. In the Appendix, Hume realizes that he has oversimplified matters and that a piece of poetry might be more vivid than a belief in one respect and less vivid in another (*T* App ¶22, *T* 1.3.10.10). As a result, he concludes that belief is an idiosyncratic feeling that comes with its own degrees of vivacity (*T* App. ¶6).[[18]](#footnote-18) By the time Hume writes the first *Enquiry,* he isn’t thinking of vivacity as only a matter of the brightness of mental imagery. In the *Enquiry,* various qualities of perceptions can be more or less vivid along various dimensions and this vivacity can be be transferred across associated perceptions.

 Hume defends his hypothesis by bringing out its empirical implications. The transfer of vivacity may generate belief, including expectation; alternatively, it may produce more intense feelings, including greater religious devotion. When we consider the resembling picture of an absent friend, all the emotions that the friend produces are produced by the image (*EHU* 5.15). The iconography and sensible images of Catholicism produce more faith than intellectual contemplation (*EHU* 5.16). When we are near home, the feelings we have concerning it affect us more (*EHU* 5.17). Superstitious people are fond of relics because effects are associated with causes, and the sensations of the relics enliven their conception of the saint (*EHU* 5.18). If the son of a long-absent friend is presented to us, our idea of the friend will be revived in more lively colors and we’ll recall “past intimacies and familiarities” (*EHU* 5.19).

Recall that Hume says that Newton’s advancement in astronomy is characterized by his discovery of the laws and forces that govern the motion of the planets. The only place that Hume claims to have possibly discovered a general law governing the operations of the mind is in the Part 2 of Section 5, where he tells us that if the principle that vivacity spreads across associated perceptions can be confirmed, then “this may be established as a general law, which takes place in all the operations of the mind” (*EHU* 5.14). This hypothesis is at the heart of Hume’s proposed Newtonian psychology. It’s not a mere generalization that rests on other generalization but an explanatory principle that explains other principles describing the landscape of the mind. In the special case of causal inference, custom instills an association between two perceptions of different kinds of things. When we receive a sensation of one these sorts, the vivacity spread to the associated perception, and we believe in the presence of the associated object. If belief is a sort of vivacity, if associations are established by constant conjunctions, and if each sort of vivacity is spread across associated perceptions, then he will have explained the probable inferences described in the first part of Section 5.

 Recall also that Hume describes mental geography as having a high degree of certitude. He describes Part 2 of Section 5, as optional and speculative in a way that Part 1 is not. For readers who don’t like uncertain speculations, “the remaining part of this section is not calculated for them, and the following enquiries may well be understood, though it be neglected” (*EHU* 5.9). Part 2 is offered for those who “love the abstract sciences, and can be entertained with speculations, which, however accurate, may still retain a degree of doubt and uncertainty” (*EHU* 5.9). The speculative character of Hume’s discussion is a sign that we have left mental geography behind and he is attempting to explain customary inference.

 According to Justin Broackes, Hume’s statement that Part 2 of Section 5 is optional is evidence of a loss of confidence in his theory of belief: “Hume’s anxieties seem to have gotten the better of him altogether.”[[19]](#footnote-19) There is something right about this, but I wouldn’t personalize the point. Hume is thinking that a hypothetical law is less certain than mental geography, but it’s also more ambitious. He makes his speculation optional so that its uncertainty doesn’t infect the rest of the work, but he still thinks of it as an attempt to do for the science of mind what Newton did for astronomy.

# Epilogue

Did Hume establish a law in empirical, scientific psychology? In thinking about this question, it’s worth situating his account in light of modern treatments of psychological priming. According to Jeffrey Sherman and Andrew Rivers, “Broadly, priming refers to the phenomenon whereby exposure to a stimulus influences subsequent behavior without conscious guidance or intention.”[[20]](#footnote-20) This account of priming is too broad for our purposes, and it lets in every reflex action and every piece of subconscious processing. Let me stipulate that ‘associative priming’ is the phenomenon where a stimulus brings about a psychological effect without conscious guidance or intention along certain determinate principles of association. Hume’s proposed Newtonian psychology is an early version of associative priming, and perhaps the earliest version.

 Some tests of associative priming have replicated fairly well. So, for example, there are old and well-confirmed studies showing that when subjects are exposed to a word they find it easier to identify related words.[[21]](#footnote-21) Researchers who have raised doubts over other sorts of priming don’t doubt the reality of this sort of priming.[[22]](#footnote-22)

 Other experiments, especially those done by social psychologists, haven’t replicated well. According to Christine Harris, Doug Rohrer, and Harold Pashler, “essentially 100%” of well-known “priming results coming out of the social cognition field” can’t be reproduced.[[23]](#footnote-23) Harris, Rohrer, and Pasher suggest that it’s easy to draw the line between priming effects that replicate and those that do not. According to them, the effects that replicate,

reflect a bias toward perceiving an ambiguous stimulus as (or recalling) an instance of a kind of stimulus that would be more likely to occur given the prime . . . his kind of threshold modulation based on conditional probabilities is likely to be entirely rational from a Bayesian perspective. If doctors and nurses are often encountered together (in texts as well as in real life), and if you just saw a doctor and now you see something that might be a nurse (or a letter string that might be ‘nurse’), it is sensible to process new information with priors that favor that interpretation. The bias is a “feature not a bug.”[[24]](#footnote-24)

This answer is the right sort of thing, but one of the priming examples that defenders of social psychology think will replicate is the “Weapons Identification Task” in which subjects more quickly identify weapons among tools after they see images of black men.[[25]](#footnote-25) We ought to handle with tongs the idea that such a mechanism is a feature and not a bug and that it rests in a straightforward way on experience.

One lesson from the replication crisis is that mental geography is harder than Hume suggests that it is. On the terrain that Hume has staked out, progress in mental geography is a matter of figuring out which instances of associative priming replicate and which do not. Progress towards a Newtonian psychology would consist in finding general principles that explain and predict all and only genuine instances of associative priming. We are still some distance from completing the task

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1. I’m grateful to Katie Tabb, Mike Dacey, and Talia Morag, who gave me comments on an early version of this paper in a meeting of the Association Association in New York [↑](#footnote-ref-1)
2. Stephen Buckle gives a good and accurate paraphrase of this section in his *Hume’s Enlightenment Tract,* 121-5. [↑](#footnote-ref-2)
3. “Two Species,” 86. [↑](#footnote-ref-3)
4. Lapointe, “origin of ‘psychology’,” 643. [↑](#footnote-ref-4)
5. Hartley, *Observations,* 223. [↑](#footnote-ref-5)
6. *Observations,* v. [↑](#footnote-ref-6)
7. *Observations*, 5. [↑](#footnote-ref-7)
8. “Hartley and Association,” 441. [↑](#footnote-ref-8)
9. “Hartley and Association,” 453. [↑](#footnote-ref-9)
10. Compare ¶10 of the Introduction to the *Treatise* [↑](#footnote-ref-10)
11. “Fodor’s Guide,” 5363n10. [↑](#footnote-ref-11)
12. Boring, “Beginning and Growth” and Mueller, “Origins of Psychology” [↑](#footnote-ref-12)
13. “Two Species,” 81. [↑](#footnote-ref-13)
14. “Hume’s Newtonianism,” §3 [↑](#footnote-ref-14)
15. “Hume’s Newtonianism,” §3 [↑](#footnote-ref-15)
16. “How Hume Became,” §§4, 5 [↑](#footnote-ref-16)
17. On the minor variations between these texts, see pp. lxv-lxvii of *EHU.* [↑](#footnote-ref-17)
18. See Jacovides, “Hume’s Second Thoughts about Belief” [↑](#footnote-ref-18)
19. “Belief and Personal Identity,” 187. [↑](#footnote-ref-19)
20. “Social Priming,” 2. [↑](#footnote-ref-20)
21. Meyer and Schvaneveldt, “Recognizing Pairs.” [↑](#footnote-ref-21)
22. Harris et al, “Train Wreck” 17, Richie, *Science Fictions* 25-6. [↑](#footnote-ref-22)
23. “Train Wreck,” 17. [↑](#footnote-ref-23)
24. “Train Wreck,” 18. [↑](#footnote-ref-24)
25. Jeffrey Sherman and Andrew Rivers express the expectation (“Final Word,” 50) B. Keith Payne did the initial study (“Prejudice and Perception”). [↑](#footnote-ref-25)