

Hume's Denial of the Entailment Thesis

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1. Introduction

The historian of philosophy is cautious by nature. Inevitably, she views the dogmas peculiar to contemporary philosophers with a healthy dose of suspicion. Even if she endorses a given presumption, the historian recognizes that the thinkers of bygone eras were not simply fools in failing to subscribe to it. The historian sees how things could be different—and, crucially, *why they were in fact different*—and is more cautious as a result. The early modernist should feel this way about the recently popular dogma that knowledge entails belief.¹ After all, it is not clear if *any* of the figures composing the traditional early modern canon endorse the so-called 'entailment thesis'. Perhaps Descartes endorses it, but Locke likely does not.²

In this paper, I will argue that Hume would deny the entailment thesis. Hume's denial of this dogma follows from how some of the core claims of his account of the mind—especially those concerning the nature and origin of beliefs—combine with his normative views about knowledge. Given that Hume does not explicitly discuss the entailment thesis, we must infer his attitude towards it from how he defines belief and knowledge. The story as I will tell it is, in brief, as follows. Hume maintains that both beliefs and instances of knowledge are (occurrent) perceptions.³ Beliefs are especially phenomenally intense, and they arise either from causal reasoning or from mere repetition (as in the case of rote memorization). By contrast, instances of knowledge have intentional objects of a special kind, and they arise either from sense perception, from unconscious causal reasoning, from mere repetition, or from non-causal reasoning (as in the case of arithmetical calculation). Given these features, it is possible that, by Hume's lights, one

¹ I say 'recently popular' because there was lively debate about the status of the entailment thesis as recent as the 1960s. See, e.g., Radford 1966, Lehrer 1968, and Annis 1969. In an 1969 article, David Armstrong reports (1969, 22) that "strong denials" of the entailment thesis—namely, arguments in favor of the view that knowledge entails the *lack* of corresponding belief—were common and proffered by, among others, Cook Wilson, Harold Prichard, and H.H. Price. Armstrong notes that these philosophers were drawn to the line of reasoning Socrates presents in *Republic* V. There, Socrates argues that knowledge and belief (or, perhaps better, opinion—analogue to the situation with Descartes discussed below, '*doxa*' may not be a good synonym for 'belief') have different kinds of objects and, as a consequence, have incompatible properties (e.g., infallibility and fallibility). For discussion, see Allen 1960, Cross and Wozzley 1964, Fine 1978, Ketchum 1987, and Scaltsas 2014.

² Descartes defines knowledge in his letter to Regius as "conviction based on a reason so strong it can never be shaken by any stronger reason" (AT 3:65; for an explanation of this citation format, see the Primary Texts and Abbreviations sections). A similar definition is found in the second set of *Replies*: "a conviction so firm that it is quite incapable of being destroyed; and such a conviction is clearly the same as the most perfect certainty" (AT 7:144-145). Assuming that for Descartes conviction (*persuasio*) is belief or a kind of it, Descartes seems to be expressing the view that knowledge (*cognitio*) is a special sort of belief—namely one that cannot be doubted or undermined (depending on whether one reads him in a psychological or epistemic key). However, given that '*persuasio*' may not be a good synonym for 'belief', there is some room for doubt here. As for Locke, he seems to define belief and knowledge as mutually exclusive. See *Essay* IV.xv and especially E IV.xv.3, where Locke defines 'belief' as "the admitting or receiving any Proposition for true, upon Arguments or Proofs that are found to persuade us to receive it as true, without certain Knowledge that it is so."

³ 'Perception' is Hume's generic term for the objects of the mind, and they can have intentional objects of their own. See T.1.1.1.1, as well as T 1.1.1.1n2 and A 5 (for an explanation of this citation format, see the Primary Texts and Abbreviations sections). See Cottrell 2018 (esp. 2-3) for a recent discussion of the option space.

knows and believes, and it is also possible that one knows but does not believe. So, it is not the case that it is necessary that if a perception is an instance of knowledge, then it is a belief. But if this is not necessary, then some instances of knowledge are distinct from beliefs. Since Hume holds that it is possible that distinct beings exist separately, it follows that Hume would maintain that it is not the case that it is necessary that if one knows that p , one believes that p .

My plan is as follows. In section 2, I will formulate Hume's definitions of belief and examine how he arrives at them.⁴ In section 3, I will present Hume's definitions of knowledge and explore the features of his account of knowledge relevant to ascertaining his position on the entailment thesis. In section 4, I will apply these definitions to answer, in the negative, the question of whether Hume would hold that knowledge entails belief.

By explaining the relevant features of Hume's account of the mind, I will show that there are deep connections between the entailment thesis and the philosophy of mind. As I suggest in section 5, Hume's position and accompanying methodology represent a significant challenge to those who seek to defend or presume the entailment thesis while remaining silent on the nature of the mind. Unless one disagrees with Hume only about the normative issues that he maintains to be normative as well, one cannot remain silent about the nature of the mind if one is to confront Hume's denial of the entailment thesis head-on. This is true even if some of the details of Hume's own account of the mind are not ultimately tenable.⁵

2. The two kinds of Humean beliefs

2.1 - Beliefs₁: lively ideas arising from associations with impressions or other beliefs

According to Hume, there are two kinds of beliefs. The first kind conform with the following definition.⁶ Through the rest of this subsection, I will unpack this definition and motivate it by explaining in a sympathetic fashion why Hume endorses it:

x is a belief₁ =_{df} x is a vivacious idea that arises and acquires its vivacity from an impression or other belief with which it is associated (because of a natural causal relation).

Like the other beliefs in Hume's system, beliefs₁ are vivacious ideas. Hume glosses the distinction between ideas and impressions as the distinction between thinking and feeling.⁷ When

⁴ Note that subsections 2.2 and 2.4 are not essential to my main argument. They provide further background information related to Hume's definitions of belief as well as responses to objections.

⁵ On this point, Jerry Fodor (2003, 3) argues that "though I think he gets important things wrong from time to time, Hume is often remarkably perceptive about what would nowadays be called the 'architecture' of psychological theories of cognition. He has, pretty nearly, a proposal on offer for each of the components that they minimally require; and even when the proposals he has on offer don't work, he's very good on how the bits and pieces are supposed to fit together."

⁶ There are many passages where Hume defines beliefs as beliefs₁ (or refers to them in ways that confirm parts of this definition). See, e.g., T 1.3.6.15, T 1.3.7.5, T 1.3.7.6, T 1.3.8.1, T 1.3.8.6-11, T 1.3.8.15, T 1.3.9.8, T 1.3.10.3, T 1.4.2.41, T 2.3.6.10, T App.3, E 5.12, and E 5.13. For an explanation of this citation format, see the Primary Texts and Abbreviations sections.

⁷ See T 1.1.1.1, A 5, and E 2.1-3.

I remember what I had for dinner last night, or when I imagine a purple unicorn, Hume maintains that my representations are ideas. By contrast, when I perceive the red car in the street by looking out my window, I do so via an impression. Likewise, when I am angry, I experience my anger in the form of impressions. It is Hume's position that only ideas and impressions are immediately present to beings like me. They are the only kinds of what Hume calls 'perceptions'.⁸

Not any old idea is a belief. Hume argues that vivacity is one of the two features that distinguish beliefs from other ideas. Vivacity is a kind of phenomenological intensity.⁹ Because this aspect of beliefs is hard to describe, Hume uses a wide variety of terms in an attempt to convey how he understands it, including 'force', 'solidity', 'firmness', 'steadiness', and 'liveliness'.¹⁰ Hume maintains that beliefs are vivacious because he experiences them as such and their having vivacity explains their unique role in the cognitive economy.¹¹ For instance, Hume argues that vivacity is necessary to explain the possibility of genuine disagreement between someone who believes something and someone who does not. Suppose my friend and I both conceive the sun rising tomorrow in the same way. This means that our ideas of the sun rising tomorrow are identical with respect to the qualities that make them representations of the sun rising tomorrow. Now, supposing that my friend *believes* that the sun will rise tomorrow and I do not, there must be some explanation of why my friend's idea is a belief and mine is not. Since the representational qualities of our ideas are the same, this means that something else must be the differentiating factor. Hume's position is that the differentiating factor must be a non-representational feature of the ideas—namely, their vivacity. My friend's idea is significantly more vivacious than mine.¹²

The second characteristic of beliefs that distinguishes them from other ideas is their source. Hume's account of the source of beliefs₁ also explains the origin of their vivacity. Hume argues that the vivacity of beliefs₁ originates in impressions either directly (impressions are themselves normally quite vivacious) or via other beliefs.¹³ The following is a general description of the core of Hume's account of the process. Upon forming an impression of or belief in an object belonging to kind A, the mind is carried by an associative tendency to generate an idea of an object belonging to kind B. Objects belonging to kind B are those that the mind has experienced

⁸ See footnote 3 for information on what perceptions are.

⁹ I maintain that this phenomenal intensity can, contra Everson (1988, 406-407), have a value of 0, per T 1.1.3.1. It is for this reason that I agree with Francis Dauer (1999, 84, 89-92) that it is essential that vivacity be "available to consciousness" or, to use the language of Stephen Everson (1988, 402), "available to introspection". The mind becomes aware of the vivacity of impressions or ideas simply in virtue of becoming aware of them. So, while some vivacious impressions or ideas have "superior influence on the passions and the imagination" (T 1.3.7.7) in virtue of their vivacity, the quality of vivacity itself should *not* be understood as an essentially functional one (see T 1.3.10.3 in this connection). As Jennifer Marusic (2010, 174) argues, a "perception's degree of force and vivacity is not identical with, but rather *explains*, the perception's causal role." (Garrett (2015, 38-39) concurs.)

¹⁰ Per T 1.3.7.7 and A 22, all of these terms refer to the same quality.

¹¹ On the first point, see T App.4. On the second point, see, e.g., T 1.3.5.5-6, T 1.3.7.5, T 1.3.10.3-4, T 1.3.10.7, T App.7.

¹² Crucially, as Hume notes in the Appendix (T App.22), there are features of ideas other than their representational features and their vivacity. Hume's claim is just that vivacity is the feature that, as a matter of fact, differentiates beliefs.

¹³ For passages where Hume states that the triggering perception can be something other than an impression (that is, a belief), see T 1.3.4.3, T 1.3.8.15-16 and E 5.8.

in the past to be constantly conjoined with objects belonging to kind A. The original impression or belief bestows vivacity on the newly formed idea and it thereby becomes a belief₁. Importantly, no impression is added or conjoined to the idea; rather, the generated idea itself simply becomes more vivacious. As an illustration of this process, Hume gives some examples in the Appendix to the *Treatise*:¹⁴

I hear at present a person's voice, whom I am acquainted with; and this sound comes from the next room. This impression of my senses immediately conveys my thoughts to the person, along with all the surrounding objects. I paint them out to myself as existent at present, with the same qualities and relations, that I formerly knew them possess'd of. These ideas take faster hold of my mind, than the ideas of an enchanted castle. They are different to the feeling; but there is no distinct or separate impression attending them. 'Tis the same case when I recollect the several incidents of a journey, or the events of any history. Every particular fact is there the object of belief. Its idea is modify'd differently from the loose reveries of the castle-builder: But no distinct impression attends every distinct idea, or conception of matter of fact. (T App.4)

In the first case, Hume hears someone's voice filtering in from a nearby room. Since Hume has experienced sounds like it constantly conjoined with ideas and impressions of a specific person, the sound as he hears it (which is an impression) causes him to think of that person. This new thought is partially constituted by features of the person whom Hume has previously experienced as belonging to them since, after all, the only present information he has with regards to the person is what is conveyed by the sound of their voice. Thus it is Hume's memory that must provide him with some of the ideas which constitute this thought. Yet, since Hume thinks of the person "as existent at present" and memories do not represent anything "as existent at present", the imagination is called into service to modify the outputs of the memory in accordance with the present circumstances. Crucially, since the sound of the person's voice is an impression, impressions are vivacious, and vivacity is, as it were, contagious, the thought that the sound triggers is an "enlivened" idea—that is, on Hume's account, it is a belief₁. As Hume's alternative terminology for vivacity indicates, he understands vivacity like Newtonian force in many respects. An idea must be impressed with vivacity from something distinct from it or else it remains at the same level of vivacity. Throughout his description of this case and the one after it, Hume emphasizes that it is the vivacity of this idea that differentiates it from the ideas one dreams up of something like an "enchanted castle".

The associative tendencies that are partially constitutive of the imagination and that produce beliefs₁ arise from and are responsive to causal relations. The three kinds of associations in Hume's system arise from and are responsive to resemblances, contiguities in time or place, and causal relations. Hume refers to these three relations as the 'natural relations' because they lead the mind to "naturally introduce" perceptions on the basis of those that have come before.¹⁵ They

¹⁴ I diverge from those who claim that there is significant evidence that Hume's account of vivacity (and so, his account of belief) changes from the *Treatise* to the first *Enquiry*, such as Michael Hodges and John Lach (1976), Stacy Hansen (1988), Daniel Flage (1990), Dauer (1999), Martin Bell (2002), and Lorne Falkenstein (2012). It is definitely not *clear* that the Appendix to the *Treatise* finds Hume undergoing this transition, contra Hansen (1988, 290-296). Those who agree with me that Hume's account does not change include Michael Gorman (1993).

¹⁵ For Hume's use of this phrase, see T 1.1.4.1, T 1.1.5.1, T 1.3.6.13, T 2.1.5.10, and E 3.3.

are relations because they hold between two (sets of) objects. It is because of the natural relations that my thoughts of my grandmother are often followed by thoughts like those of my great uncle, my grandmother's house, and my father—after all, my grandmother bears these relations to these other beings.¹⁶ Nonetheless, I do not have to consciously think of my grandmother as resembling my great uncle, as being located in her house, or as the mother of my father for my mind to move from my thoughts of my grandmother to thinking about these other things. My mind is simply disposed to transition naturally from one to the other; my mind associates them.¹⁷ As consideration of this example shows, we can reflect on our own psychologies and thereby become aware of instances of the natural relations as perceptions, but generally we are not aware of them.¹⁸

In T 1.3.8, Hume argues that all beliefs₁ are produced by associations arising from and responsive to causal relations (that is, those causal relations which function as natural relations). In the next section, Hume admits that he cannot deny that associations arising from and responsive to resemblances and contiguities in time or place play a role in the generation of beliefs₁, but they are neither necessary nor sufficient. Instead, when these other associative tendencies are involved—and thus the triggering perception has an object that resembles or is contiguous in time or space to the object of the belief₁ that is its effect—they simply further enhance the vivacity that is bestowed on the belief₁. Hume concludes that "we find by experience, that belief arises only from causation, and that we can draw no inference from one object to another, except they be connected by this relation" (T 1.3.9.2). All beliefs₁ are triggered by perceptions and have, as objects, beings that bear causal natural relations with the objects of the triggering perceptions.

2.2 - An illuminating aside: why cannot impressions be beliefs₁?

Given that Hume holds that impressions and ideas form disjoint sets, it follows that Hume maintains that no impression can be a belief₁. Since the ideas that are the products of the associations arising from and responsive to causal relations have objects that belong to the kind that the mind *has observed* to be constantly conjoined with the kind to which the object of the triggering perception belongs, these products must be supplied by the memory. It is the mind's recollections of past experiences that supply the materials for the generated idea. The imagination has the crucial role of modifying the outputs of the memory so that they conform to the particulars of the present context. The imagination updates recalled ideas to conform with both past and present information, whether it is provided by the triggering perception or not. Yet, the imagination and the memory are alike in that they generate only ideas.¹⁹ Neither faculty can

¹⁶ Note that the resemblances, contiguities in time or place, and causal relations in play here hold between the *objects* of the ideas, as Hume makes explicitly clear at T 1.3.5.1. See Garrett 2015 (50) on this point.

¹⁷ For places where Hume uses this term, see, e.g., T 1.1.4, T 1.1.5.3, T 1.3.6.4, T 1.3.6.12, and T 1.3.6.13.

¹⁸ As Hume notes at T 1.3.8.10: "From a second observation I conclude, that the belief, which attends the present impression, and is produc'd by a number of past impressions and conjunctions; that this belief, I say, arises immediately, without any new operation of the reason or imagination. Of this I can be certain, because I never am conscious of any such operation, and find nothing in the subject, on which it can be founded."

¹⁹ Admittedly, there are several passages where Hume writes of the "impressions of the memory": T 1.3.5.1, T 1.3.6.4, T 1.3.9.7, T 1.3.10.9, T 1.4.2.42, T 1.4.2.43, and T 2.3.1.17. Yet, other passages make clear that he is being fast and loose. In passages where Hume discusses the memory at length, he is emphatic that the memory produces ideas and not impressions (e.g. T 1.1.2.1, T 1.1.3.1, T 1.1.3.2, T 1.1.3.2, T 1.1.3.3, T 1.3.5.5). Furthermore, he

generate impressions. Any impression is, instead, perceived via sensation or via reflection (an internal kind of sensation). Thus, the faculties involved in the process whereby beliefs₁ are formed ensure that they are only ideas.

Generally, Hume is careful to distinguish between ideas and impressions, he explicitly states that beliefs₁ are ideas, and he describes the above process in great detail.²⁰ There is, then, significant textual evidence that it is in fact Hume's position that all beliefs₁ are ideas and not impressions. But there are many reasons to be concerned about this blanket denial. If vivacity plays a crucial role in differentiating a mere idea of something from a belief₁ in it, and the ultimate origin of many beliefs₁' vivacity is associated impressions, then why cannot impressions be beliefs₁? It seems like they would be paradigmatic beliefs₁. In addition, who would deny that seeing is believing, at least in some cases? Do we not sometimes believe what we see, simply in virtue of seeing it? A natural objection to Hume's picture is to describe a situation where we seem to believe something in the first instance that we perceive or conceive it. Here is one such description: I saw a school bus yesterday and although I had not seen that particular school bus before, I certainly believed that it was yellow at the time that I saw it. Since, as I have argued in other work, Hume holds that some impressions qualify as instances of perceptual knowledge, the actuality of perceptual knowledge makes Hume's position on this issue all the more relevant.²¹ If some of the impressions that are instances of perceptual knowledge were identical to beliefs, then perceptual knowledge would entail belief.

To make matters worse, there are also textual reasons to be concerned about the interpretation I gave in the preceding subsection. The most worrisome text-based objection goes something like this. When, in the *Treatise*, Hume introduces the account of belief₁ discussed above, he introduces it as an account of a proper subset of beliefs, namely those beliefs in unobserved "matters of fact" or "real existences".²² The crucial role that associations arising from and responsive to causal relations play in his account of this particular kind of belief is owed to its peculiarities. So, the reason all beliefs are ideas *in this limited domain* is that the "matters of fact" or "real existences" at issue are *not* present to the senses. If they were present to the senses, our beliefs in them would not need to be ideas. Indeed, they would be impressions. And we have reason to think that there are other kinds of beliefs in Hume's broader system, including those of

explicitly gives an explanation of why he is fast and loose when he first introduces the distinction (T 1.1.1.1). It is that the ideas of the memory are often so vivacious that they are nearly indistinguishable from impressions in this respect. Hume expresses this by asserting that an idea of the memory is "somewhat intermediate betwixt an impression and an idea" (T 1.1.3.1; see also T 1.3.9.3), that the memory "repeats" impressions (T 1.1.3.1; see also T 1.3.5.7) and that the "ideas of memory [. . .] are equivalent to impressions" (T 1.3.4.1). Indeed, generally we distinguish impressions from ideas by their relative vivacity. However, it is clear that sufficient vivacity alone does not make an idea into an impression—otherwise the memory could not be distinguished from the senses. The distinction between impressions and ideas is, instead, one between "original mental entities and copied mental entities" (Landy 2006, 119-120). For discussion, see Kemp Smith 1941 (209-212, 229-236), Garrett 1997 (11-40), Noonan 1999, Landy 2006, and Landy 2016 (275-280). I take this way of understanding the distinction solves many of the problems Everson (1988, 408-413) discusses, and that it may very well entail Everson's solution. In short, Everson cashes out the distinction via an appeal to the quality of being present; a similar account is given by Dauer (1999).

²⁰ Passages where Hume is especially explicit in contrasting beliefs of this kind with impressions include T 1.3.4.2, T 1.3.7.5, and T App.7. Commentators who agree that beliefs are not impressions include Garrett (2004, 77).

²¹ See my first chapter.

²² Commentators who hold this view include Martin Bell (2002) and David Owen (2003).

presently observed objects and those of objects we have observed in the past. This is why Hume explicitly states in the *Treatise* that sensory impressions and ideas of the memory are beliefs (T 1.3.5.7).

My response to this objection is, in brief, that the text of the *Treatise* undermines it. Although I will argue in the next subsection that there is another kind of Humean belief than those that arise from associations with other perceptions, I will now argue that there is good reason for Hume to deny that beliefs in present "matters of fact" or "real existences" can be impressions. I do grant that some ideas of the memory are beliefs, but this is not an objection to my interpretation of Hume's account of the beliefs. By the end of this section, I will address all of the aforementioned non-textual reasons to be concerned about Hume's position regarding impressions and beliefs.

It is indisputable that, at the end of T 1.3.2, Hume first pitches this account of belief as an account of the beliefs we "repose" in the "particular effects" had by "particular causes" (T 1.3.2.15). After all, at this point in the *Treatise*, Hume is homing in on the psychological processes that are involved in causal reasoning, and he has broad questions about them. Why do we imagine that "matters of fact" hold in times and places unobserved? And why do we not merely conceive them but also have beliefs about them? In the subsequent section, Hume appears to detour into a discussion of the proposition "that *whatever begins to exist, must have a cause of existence*" (T 1.3.3.1), but it is not a detour because his goal is to understand why we believe this universal proposition about causes and effects. This section generates more questions than answers, so Hume returns more directly to the general issue of the origin and nature of belief in T 1.3.4. The objects of the beliefs there discussed are, however, still examples of particular "matters of fact" such as "that CAESAR was kill'd in the senate-house on the *ides of March*" (T 1.3.4.2). These beliefs are, as the title of the section indicates, explained by Hume to be the results of "*our reasonings concerning cause and effect.*" All of this I grant.

Serious trouble appears in the form of Hume's conclusion of the next section, T 1.3.5 ("*Of the impressions of the sense and memory*"). Hume concludes that

it appears, that the *belief* or *assent*, which always attends the memory and senses, is nothing but the vivacity of those perceptions they present; and that this alone distinguishes them from the imagination. To believe is in this case to feel an immediate impression of the senses, or a repetition of that impression in the memory. (T 1.3.5.7)

What am I to make of this? Although it is part of my interpretation of Hume's account of beliefs₁ that the memory joins with the imagination to form beliefs₁, I hold that Hume denies that *all* memories are beliefs₁. The reason why Hume holds this position will help illuminate why we should not take his assertion in T 1.3.5.7 literally, both as it regards memories and as it regards sensory impressions. Vivacity alone is *not* sufficient for a perception to be a belief₁.

We can see why Hume denies that all memories are beliefs₁ only after examining, as parts of a cohesive unity, the sections from T 1.3.9 to T 1.3.13. Hume makes a distinction in T 1.3.9.3 between memories which perfectly resemble sensory impressions and memories which resemble sensory impressions but which also are supplemented with information provided by the imagination. Initially, Hume describes both kinds of memories, along with present sensory

impressions, as together constituting what one takes to be "*realities*". The first "*reality*" consists of "the object[s] of the memory and senses; the second of the judgment." Once again, this may seem to be promising for the objector. Surely, we would surmise, one's "*reality*" is constituted by the totality of one's beliefs. But Hume's use of the term 'the judgment'—when Hume uses it to refer to a faculty, it is a component part of the imagination to which he refers—is a clue that this is not a justified assumption, and it is a clue as to what is coming next.²³

As the section proceeds, it becomes clear that Hume's considered view is that only the second "*reality*" is constituted by beliefs.²⁴ This corresponds with his use of the term 'judgment' in T 1.3.9.3 and the surrounding passages (both in that section and otherwise) to refer to the belief-generating faculty. In brief, Hume's view is that those memories which perfectly resemble sensory impressions are *not* believed outright because they must conform with one's prior experience of relevant constant conjunctions. It is as if the imagination goes about a process of comparison, comparing them with previously observed constant conjunctions and supplementing them in various ways to create new vivacious ideas. These new vivacious ideas just are one's beliefs₁. Even those memories that need no alterations undergo the same process—when they are recalled, they are still products of the causal natural relations. Sensory impressions are *never* beliefs₁ for this reason. An example Hume provides illustrates the point:

'Tis universally allow'd by the writers on optics, that the eye at all times sees an equal number of physical points, and that a man on the top of a mountain has no larger an image presented to his senses, than when he is cooped up in the narrowest court or chamber. 'Tis only by experience that he infers the greatness of the object from some peculiar qualities of the image; and this inference of the judgment he confounds with sensation, as is common on other occasions. Now 'tis evident, that the inference of the judgment is here much more lively than what is usual in our common reasonings, and that a man has a more vivid conception of the vast extent of the ocean from the image he receives by the eye, when he stands on the top of a high promontory, than merely from hearing the roaring of the waters. He feels a more sensible pleasure from its magnificence; which is a proof of a more lively idea: And he confounds his judgment with sensation; which is another proof of it. But as the inference is equally certain and immediate in both cases, this superior vivacity of our conception in one case can proceed from nothing but this, that in drawing an inference from the sight, beside the customary conjunction, there is also a resemblance betwixt the image and the object we infer; which strengthens the relation, and conveys the vivacity of the impression to the related idea with an easier and more natural movement. (T 1.3.9.11)

²³ In the sense of "inclusive imagination" to use Garrett's term (2015, 91). Hume identifies the two explicitly at T 1.3.9.19: "so the judgment, or rather the imagination". Indeed, as Garrett writes, "Although many might classify judgment as a function of the understanding distinct from reason, evidently for Hume judgment is simply the faculty of having knowledge or belief as a result of reasoning or intuition, and hence its exercises always arise from the understanding in the narrow sense. In consequence of his claims, conception, judgment, and reasoning can all be regarded as exercises of the inclusive imagination—but that is a distinctive Humean doctrine that would lend itself to misunderstanding if first proposed in a title." See also Garrett 2004 (77).

²⁴ Louis Loeb (2002, 282-284) argues to the contrary that the distinction between the two realities is the distinction between unjustified and justified beliefs.

Here we find Hume arguing in a Berkeleyian vein that "a man on top of a mountain" does not immediately perceive the distance before him and that "'tis only by experience that he infers the greatness of the object from some peculiar qualities of the image" (that is, the sense impression immediately present to his mind). Hume argues that such a man "confounds his judgment with sensation" and thinks that he believes what he sees, but, in fact, his belief₁ is a "lively idea" generated by "inference of the judgment". The present sensation plays a crucial role, of course, in triggering the belief₁ and giving it vivacity via an association arising from and responsive to a causal relation (only heightened by the association arising from and responsive to the resemblance between the two), but it itself is not a belief₁.

Hume continues to buttress his view in T 1.3.10, where he argues that beliefs₁ are, in effect, intermediaries between sensory impressions and merely imagined ideas.²⁵ When it comes to the ability of beliefs₁ to excite our passions, and so when it comes to the impact of beliefs₁ on what actions we take, only this intermediary option would do. If, on the one hand, sensory impressions were beliefs₁, "we shou'd every moment of our lives be subject to the greatest calamities" (T 1.3.10.2). But, on the other hand, "did every idea influence our actions, our condition wou'd not be much mended" because we would be "mov'd by every idle conception of this kind" (T 1.3.10.2). Hume concludes that, fortunately, "Nature has, therefore, chosen a medium" (T 1.3.10.3) between these two extremes and that medium is belief₁.²⁶

This is not to claim that our sensory impressions have *no* effects on our passions, especially with those of us like the "coward, whose fears are easily awaken'd" (T 1.3.10.4), but Hume holds that even the strongest such impressions are moderated by our beliefs₁. Hume discusses fictions like poems at length in order to show that, despite the best efforts of the poets to dazzle our senses, "the understanding corrects the appearances of the senses" (T 1.3.10.12) before it generates beliefs₁ from them (if any). Finally, in T 1.3.11-13, Hume offers compatible accounts of cases of beliefs₁ in objects which are subject either to chance (attributable only to "imperfect experience", on Hume's view) or to competing causal explanations, as well as those beliefs₁ arising from analogical and other assorted psychological mechanisms.

Thus, given what comes after the problematic passage from T 1.3.5.7, it appears that Hume was being careless with his choice of words. It is a mystery why, if Hume does hold that beliefs of this kind can be impressions, he does not ever say so again.²⁷ In fact, in another passage, T 1.3.4.2, Hume explicitly contrasts impressions with beliefs when he asserts that in hypothetical arguments, there is "neither any present impression, nor belief of a real existence". Since both passages are of dubious interpretative import, we should look elsewhere, and the weight of the text is in favor of interpreting Hume as holding that beliefs₁ are vivacious ideas associated with impressions or other beliefs via associations arising from and responsive to causal relations.

From these texts, we have learned that Hume has two good reasons to deny that impressions can be beliefs₁. First, Hume denies that we believe₁ anything on the basis of a single observation of it. Instead, we must observe it—or something like it—several times before we can believe₁ it. In

²⁵ A position Hume corroborates in T App.3.

²⁶ This argument can be understood as an argument for the distinctness of impressions and beliefs from the distinctness of their functional roles.

²⁷ For a competing explanation, see Owen 2003 (27n34).

the first instance, we do not believe₁ what we are perceiving or conceiving. Only after we have made sense of something and its relation to what we have encountered before can we come to believe₁ it. Second, Hume's account of belief₁ makes the most sense of how we behave. Hume argues that beliefs₁ are intermediate between sensory representations and imaginings, and, if they were not, then we would behave radically differently than we do. If, on the one hand, we were to believe₁ everything we perceive when we first perceive it, then every moment would be, well, momentous. And if, on the other hand, we were to believe₁ everything we imagine, then we would act on every fantasy. Instead, beliefs₁ are the products of a set of stable dispositions that take into account patterns in past observations and thus moderate our actions based on the sum of the data we have previously gathered.

In the case of the school bus mentioned at the beginning of this section, Hume would *not* deny that I believed₁ that the bus was yellow. Hume would note that the object of my perception of the yellow bus was of a kind that I had perceived before. It was not my first school bus. However, Hume would deny that the basic sensory representation that I experienced as I looked at the bus was a belief₁. My belief₁ that the bus was yellow, instead, was a cognition that arose as an effect of this basic sensory representation. Per the preceding, one reason to agree with Hume here is to consider the difference between me and someone who sees what I see but which had never seen anything like a school bus before that moment (that is, suppose the other person has never seen any busses, any yellow things, and so on). Hume could grant that I had a qualitatively identical visual experience to that of the other person—that is, suppose our sensory representations were the same. Still, Hume would deny that the other person believed₁ that the school bus was yellow. No belief₁ would arise as an effect of what they saw.

2.3 - Beliefs₂: lively ideas arising from mere repetition

On Hume's view, there are beliefs of a second kind that we come to have that are impressed on us through mere repetition. These beliefs are defined as follows:

x is a belief₂ =_{df} x is a vivacious idea that acquires its vivacity from mere repetition.

Previously, I detailed how Hume presents the core of his position on the origin of the vivacity of beliefs₁ from T 1.3.2 to T 1.3.9. Throughout his presentation of his account of belief, Hume uses the term 'custom' to refer to anything caused by repeated experiences of the same sort. As Hume puts it, "we call every thing CUSTOM, which proceeds from a past repetition, without any new reasoning or conclusion" (T 1.3.8.10). In the later passages of T 1.3.9, Hume clarifies that there are, in fact, two kinds of beliefs that come from custom and that all beliefs belong to one of these two kinds. The first kind of belief Hume mentions are beliefs₁—beliefs whose members arise from associations which themselves arise from and are responsive to causal relations—while members of the second kind, beliefs₂, acquire their vivacity via non-associative mechanisms subsequent to repetition.

If you repeatedly imagine a scene in some unknown city, you may come to believe that there is such a place, even though you cannot recall being there, hearing about it, or even seeing it on television. Or, on a darker note, if you repeatedly imagine your rival as ugly or mean, you may come to believe that he is ugly or mean, even if you have had no experiences of him as such.

These beliefs would be beliefs₂. In the following passage, we find Hume first making the distinction between beliefs₁ and beliefs₂:

To understand this we must consider, that custom, to which I attribute all belief and reasoning, may operate upon the mind in invigorating an idea after two several ways. For supposing that in all past experience we have found two objects to have been always conjoin'd together, 'tis evident, that upon the appearance of one of these objects in an impression, we must from custom make an easy transition to the idea of that object, which usually attends it; and by means of the present impression and easy transition must conceive that idea in a stronger and more lively manner, than we do any loose floating image of the fancy. But let us next suppose, that a mere idea alone, without any of this curious and almost artificial preparation, shou'd frequently make its appearance in the mind, this idea must by degrees acquire a facility and force; and both by its firm hold and easy introduction distinguish itself from any new and unusual idea. (T 1.3.9.16)

As Hume makes clear here, he holds that there are some ideas that become vivacious simply in virtue of the sheer number of times that they appear in the mind. In the immediately subsequent passages, Hume argues that there are some such cases that are so impactful that they lead us to favor the resultant beliefs₂ over beliefs₁. Even when we believe₁ that someone has died, we are often so accustomed to seeing them in some particular place or in some particular company that we still believe₂ that they persist in the same fashion. We still believe₂ that they are there or that they are with those people. Even when we believe₁ that we have lost a limb, we are often so accustomed to having one that we still believe₂ that we have it. We try to use it because we believe₂ that it is still there (although it may be that we still believe₁ that we can still move with it because we have moved with its assistance so many times before).

Although Hume discusses these extreme cases, his main interest is in standard cases of education. As Hume notes, many of our educational methods encourage the repetition of certain ideas, like that which results from teachers repeatedly asserting for students to remember. Some of these ideas are beliefs₁ because they arise from reliable testimony, but many of these repeated ideas become beliefs₂, irrespective of their source or, more generally, whether we experience their objects in the right sorts of constant conjunctions. In fact, Hume proposes that "upon examination we shall find more than one half of those opinions, that prevail among mankind, to be owing to education" (T 1.3.9.19). Although beliefs₂ acquire their vivacity from different sources, they are similar to beliefs₁ in that they are vivacious, they are ideas, and they arise from custom.

2.4 - Another aside: are there beliefs₃, on Hume's view?

There is a third kind of belief which Hume *seems* to allow for and which differs from the other two. In T 1.3.7.3, Hume appears to assert, in his own voice, that there is an "easy" answer to the question of "the difference betwixt believing and disbelieving any proposition" when the propositions at issue are the objects of knowledge.²⁸ The "easy" answer that Hume gives is that "the person, who assents, not only conceives the ideas according to the proposition, but is necessarily determin'd to conceive them in that particular manner". Clearly, this definition, if it

²⁸ A compressed version of this passage is also found in the Abstract at A 18.

may be called that, does not align with Hume's definitions of the two kinds of belief previously discussed. Nonetheless, it is a natural thing for Hume to assert, given his view that known propositions have contradictory and thus inconceivable contraries.²⁹

There are a number of other passages where Hume indicates in passing that his accounts of the first two kinds of beliefs are *not* universally applicable.³⁰ Given this fact and the above passage, we may be forced to conclude that Hume has a three-part account of belief.³¹ And, more important for present purposes, we may be forced to conclude that Hume would maintain that knowledge entails belief₃. However, I favor an alternative interpretation. Hume ends T 1.3.7.3 by stating that since "in reasonings from causation, and concerning matters of fact, this absolute necessity cannot take place, and the imagination is free to conceive both sides of the question, I still ask, *Wherein consists the difference betwixt incredulity and belief?*". One could understand this as Hume's recognition that a different account of belief will be needed when it comes to matters of fact—when the objects of beliefs do not have inconceivable contraries. Yet, I interpret Hume as here admitting that his proposed account of beliefs in the objects of knowledge fails to generalize and is, for that very reason, ruled out as inadequate. The rhetorical question is phrased in a general way, and Hume says that he "still" asks it, as if he has asked it already but has not yet succeeded in answering it. Indeed, Hume asked it already in this very passage, just prior to giving his "easy" answer, so it seems he does not see this answer as a success.

One reason to read Hume as dissatisfied in this "easy" answer and thus to *not* take the view he expresses in T 1.3.7.3 as his own is that some of the beliefs that it posits could lack vivacity entirely. This lack of vivacity would, in turn, render these beliefs both transient and unable—even *in principle*—to motivate action in the people that have them. Indeed, one of the conclusions of Hume's argument in T 1.4.1 (*"Of scepticism with regard to reason"*) is that vivacity is the feature of beliefs that render them unable to be subverted by skeptical arguments that leverage the fallibility of our faculties. Hume concludes that belief "*is more properly an act of the sensitive, than of the cogitative part of our natures*", and if, on the contrary, "belief, therefore, were a simple act of the thought, without any peculiar manner of conception, or the addition of a force and vivacity, it must infallibly destroy itself, and in every case terminate in a total suspence of judgment" (T 1.4.1.8).³² Hume's point is that if we are to believe what we know through demonstration, then the sensitive part of our natures must converge with reason in producing a belief in the same object.³³ If it does not, then we do not believe: "belief, being a

²⁹ See T. 1.3.7.3, T 1.3.9.10, E. 4.2, and D 9.5.

³⁰ See, e.g., A 10, A 21, and E 5.8. Note that there are other passages where Hume indicates the contrary, as in T 1.3.9.16, where he states that "custom, to which I attribute all belief and reasoning, may operate upon the mind in invigorating an idea after two several ways."

³¹ Lorne Falkenstein (1997), for example, concludes in this manner. In fact, he expands the account of this third kind of belief to include any case where "evidence" or "certainty" is impressed upon us by demonstrations (1997, 33). However, on my view, Hume gives no explicit indication that he identifies evidence or certainty (which are distinct, mind you) with belief of this third variety. My interest is with what Hume calls 'belief', not with what we today sometimes call 'belief' (that is, perhaps thin belief; see section 5 below).

³² A point made by Frederick Schmitt (2014, 101-102, 317) and Owen (1999, 177-178), among others.

³³ As with the case of impressions (noted in section 2.2), this indicates that the functional roles of instances of demonstrative knowledge and beliefs are distinct, and hence the two sorts of beings are distinct as well.

lively conception, can never be entire, where it is not founded on something natural and easy" (T 1.4.1.11).³⁴

Another reason that Hume might have been dissatisfied with the position posited in T 1.3.7.3 is that it fails to generalize. Hume sees generality as a derivative theoretical virtue because theories serve to unify phenomena under a single explanatory framework and the more general a theory is, the more phenomena it unifies under its principles. Generality gains its relevance only by being a necessary property of an explanatorily powerful theory. An explanatorily powerful theory should be as general as the range of phenomena it treats. And empirical adequacy and explanatory power are, by many indications, the primary theoretical virtues in Hume's system. Hume emphasizes empirical adequacy throughout his corpus, from his use of the Copy Principle to his emphasis on how our theories ought to be based upon "experiments" taken from "a cautious observation of human life" (T I.10). Hume goes so far as to promise that he will "draw no conclusions but where he is authorized by experience" (A 2). Hume is the most explicit about these virtues when he is at a distance from the nuts and bolts of theorizing, as in the Introduction to the *Treatise*. There we find Hume making the following dual recommendation and warning:

And tho' we must endeavour to render all our principles as universal as possible, by tracing up our experiments to the utmost, and explaining all effects from the simplest and fewest causes, 'tis still certain we cannot go beyond experience; and any hypothesis, that pretends to discover the ultimate original qualities of human nature, ought at first to be rejected as presumptuous and chimerical. (T I.8)

Since Hume understands human nature as a relatively well-unified set of phenomena, any theory of human nature that fails the generality test—by being unable to explain some subset of the phenomena—is to be abandoned. Hume does not change his mind about this. Hume's position is consistent throughout his career. In the Abstract to the *Treatise*, which was published a year after the *Treatise* itself, Hume expresses a similar view. There Hume criticizes the ancients for failing, in developing their theories of human nature, to follow "out steadily a chain of propositions, or forming the several truths into a regular science." Then Hume expresses hope that the study of human nature is in fact capable of rising to the level of a science, and he indicates, in accordance with the foregoing, what this entails:

But '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. If, in examining several phænomena, we find that they resolve themselves into one common principle, and can trace this principle into another, we shall at last arrive at those few simple principles, on which all the rest depend. And tho' we can never arrive at the ultimate principles, 'tis a satisfaction to go as far as our faculties will allow us. (A 1)

It does not end there. In the opening pages of the first *Enquiry*, published almost a decade later, Hume repeats himself, right down to the criticism of the ancients, and once again recommends that those who theorize about human nature proceed "from particular instances to general

³⁴ Note that Hume repeats and confirms this position throughout T 1.4.7 as he reflects on it and evaluates its consequences for what we ought to believe.

principles [. . .] and rest not satisfied till they arrive at those original principles, by which, in every science, all human curiosity must be bounded" (E 1.2). So, there is reason to think that the failure of the third account of belief posited in T 1.3.7.3 to generalize would be a violation of Hume's broader methodology.³⁵

3. The two kinds of Humean knowledge

As I argue in other work, Hume's definition of knowledge is as follows:³⁶

x is an instance of knowledge =_{df} x is an immediately present perception that has a token of a knowledge relation between some of the parts of the perception as an object.

This definition has three main components. First, it asserts that every instance of knowledge must be an immediately present perception. Second, it asserts that an object of this perception must be a token of a knowledge relation. And third, it asserts that this token knowledge relation must have, as relata, parts of the instance of knowledge (i.e. the perception that has it as an object). The best place to start in unpacking what this means is with the concept of knowledge relations. These are not relations that knowers stand in with regards to the known; rather, the knowledge relations are the known.

Early in the *Treatise* in T 1.1.5, Hume introduces seven broad kinds of relations, or ways in which beings can be related. Later, in T 1.3.1.1-2, Hume argues that there is a distinction between two classes of them. One class consists of what Hume calls "the objects of knowledge and certainty" (T 1.3.1.2), and the members of this class are resemblances, proportions in quantity or number, degrees in a quality, and contrarieties. These are what I call the 'knowledge relations', and they are unique in being dependent only on the intrinsic properties of their relata.³⁷ That is, the intrinsic properties of the relata of the knowledge relations are the sole determinants of whether the relations hold or not. Because Hume is a rather extreme knowledge infallibilist, he maintains that one must be unable to be in error about what one knows. So long as one has the intrinsic properties of two beings in mind, one can be certain about what knowledge relations they bear to one another.

It is for this reason that Hume holds that only those immediately present perceptions that have knowledge relations as objects can qualify as instances of knowledge. Indeed, Hume argues that one's perceptions are the only beings that are immediately present and thus they are the only beings that have intrinsic properties that are immediately present. Since Hume holds this view, he holds that all (knowledge) relations have distinct relata, and he must hold that the intrinsic properties of the relata of knowledge relations must be immediately present to the mind, it follows that he also must hold that any known knowledge relation must have relata that are parts of the knower's immediately present perceptions.

³⁵ Indeed, there are some indications that Hume thinks that it is a requirement of an adequate account of belief that it be general enough to apply to animals. See T 1.3.16 and E 9. In neither section does Hume make a mention of the third kind of belief in the connection with animals.

³⁶ See my first chapter.

³⁷ This is a stipulative name that Hume does not use. However, other commentators have used this term before, such as Miren Boehm (2013, 69).

Crucially, tokens of these knowledge relations cannot be distinct from the instances of knowledge that have them as objects. If they were, then, given Hume's Separability and Conceivability Principles, instances of knowledge could exist without their objects existing. The first of these principles is the claim that "whatever objects are different are distinguishable, and that whatever objects are distinguishable are separable by the thought and imagination" (T 1.1.7.3). The latter principle is the claim that "whatever we conceive is possible" (T 1.4.5.10).³⁸ If instances of knowledge could exist without their objects existing, then one could know something without it being the case. But this would be an error, as one would be misrepresenting what it is the case. But if one knows, one cannot be in error like this. Thus, it is not the case that instances of knowledge could exist without their objects existing, and so their objects must not be distinct from them.

Throughout his corpus, Hume maintains that there are only two ways to achieve knowledge: via intuition or via demonstration.³⁹ Intuition is direct or immediate awareness of a token of a knowledge relation, while demonstration is indirect and mediated by intuition. If you have demonstrative knowledge that three are more than one, then you have intuitive knowledge that three are more than two and that two are more than one. Each of these instances of knowledge has a token proportion in quantity or number as its object. In this way, demonstrative knowledge is realized when one links multiple instances of intuitive knowledge to one another.⁴⁰

On Hume's account, by what means do instances of knowledge come about? In particular, do any of them arise from the associations arising from and responsive to causal relations? However Hume answers this question, there are consequences for his position on the relationship between knowledge and belief₁ given Hume's definitions of the latter.

According to one traditional interpretation of Hume's account of knowledge acquisition, reason is the *only* faculty of the mind involved in the mental processes distinctive of the acquisition of knowledge.⁴¹ If this interpretation is accurate, and if it is also the case that Hume maintains that the faculty of the mind which is partially constituted by the associative tendencies arising from and responsive to causal relations is *not* the faculty of reason, then we will have answered the preceding question. I have already asserted that the latter conjunct of the antecedent of this conditional is true. Hume argues that the imagination is the faculty which is partially constituted by the associative tendencies arising from and responsive to causal relations. In fact, Hume explicitly contrasts the imagination with the faculty of reason in the relevant passages. Consider the following passage, wherein we find Hume first making the contrast in the context of his discussion of the origins of beliefs₁:

Since it appears, that the transition from an impression present to the memory or senses to the idea of an object, which we call cause or effect, is founded on past *experience*, and on

³⁸ See also T 1.1.7.6 and A 11.

³⁹ See T 1.3.3.1-3 for an argument of Hume's that relies on intuition and demonstration being the only two ways to achieve knowledge.

⁴⁰ As Owen (1999, 9) puts it, "Two ideas are demonstratively related if the relation between them is conceived, not immediately, but via other intermediate ideas. The link between each pair of adjacent ideas in the resulting chain must be intuitive."

⁴¹ See, e.g., Baier 1991 (60) and Owen 2003 (22).

our remembrance of their *constant conjunction*, the next question is, whether experience produces the idea by means of the understanding or imagination; whether we are determin'd by reason to make the transition, or by a certain association and relation of perceptions? (T 1.3.6.4)

In the subsequent passages, Hume gives his answer to his own question. Hume argues that we are *not* "determin'd by reason to make the transition" from an impression or belief to a new belief₁, and instead we are determined "by a certain association and relation of perceptions".⁴² If we were determined by reason, then the relation between the object of the impression or belief and the object of the newly formed belief₁ would be a token knowledge relation. If it were a token knowledge relation, then it could be either intuited or demonstrated. If it could be intuited or demonstrated, then there would be a chain of intuitions from the previously observed constant conjunction to the object of the newly formed belief₁. Yet, the object of the newly formed belief₁ is an object *that has not been observed*, because either it has already occurred, it has not yet occurred, or it is not present to the senses for some other reason. To intuit a relation between these objects would require intuiting that the course of nature must not change. But, as Hume argues, we "can at least conceive a change in the course of nature; which sufficiently proves, that such a change is not absolutely impossible" (T 1.3.6.5). Simply because we have experienced one object constantly conjoined with another, this does not guarantee that they have always been, always will be, or will continue to be so related. Thus, with some repeated applications of *modus tollens*, Hume concludes that we are not determined by reason. Since the imagination—by being partially constituted by the associative tendencies arising from and responsive to causal relations—is the only viable alternative, it is the faculty which plays an ineliminable role in generating our beliefs₁:

Reason can never show us the connexion of one object with another, tho' aided by experience, and the observation of their constant conjunction in all past instances. When the mind, therefore, passes from the idea or impression of one object to the idea or belief of another, it is not determin'd by reason, but by certain principles, which associate together the ideas of these objects, and unite them in the imagination. Had ideas no more union in the fancy than objects seem to have to the understanding, we cou'd never draw any inference from causes to effects, nor repose belief in any matter of fact. The inference, therefore, depends solely on the union of ideas. (T 1.3.6.12)

So, Hume does hold that the faculty which is partially constituted by the associative tendencies arising from and responsive to causal relations is not the faculty of reason. But is the traditional interpretation correct in attributing to Hume the view that reason is the only faculty involved in the mental processes distinctive of the acquisition of knowledge? The answer is "no" for two reasons. While it is clear that Hume holds that the faculty of reason is the only faculty responsible for the mental processes distinctive of the generation of *demonstrative* knowledge, Hume also holds that the senses are capable of perceiving instances of knowledge, as I have argued in other work.⁴³ As we have seen, demonstrative knowledge can arise only if the mind

⁴² As many interpreters have maintained for decades. Antony Flew, for instance, maintains that belief is "a species of natural instincts, which no reason or process of the thought and understanding is able either to produce or to prevent" (1961, 99).

⁴³ See my first chapter.

infers that a knowledge relation holds between the objects of two ideas by intuiting the knowledge relation(s) holding between the objects of others. On Hume's view, all inference requires the activity of reason. However, there is a variety of *intuitive* knowledge that I call 'perceptual knowledge'. Although the senses are passive and thus do not actively generate instances of knowledge like reason does, they are solely responsible for the acquisition of perceptual knowledge. This means that, if it is not the case that any instances of knowledge arise from causal natural relations, we need to find Hume maintaining that the faculty of the mind which is responsible for the causal natural relations is neither reason nor the senses. Since, as already discussed, the imagination is the relevant faculty, we do not yet have justification to infer that any instances of knowledge arise from causal natural relations.

The second reason to deny the standard interpretation does, however, justify this inference. As we have seen, in order for there to be an association arising from and responsive to a causal relation between a being and the object of an impression or belief at some time, the kinds to which each belongs must have been experienced to be constantly conjoined at a prior time. So, if Hume were to hold that instances of knowledge do not arise from such an association, then it seems like he would be forced to deny that one could experience tokens of the knowledge relations constantly conjoined with the objects of impressions or beliefs (such that one's experiences of the tokens of the knowledge relations occur posterior to those of the objects of the impressions or beliefs). Surely Hume would agree that, in general, experience of the constant conjunction of two kinds of objects is necessary to the formation of the associative tendencies arising from and responsive to causal relations between members of them. However, this does not mean that Hume would be forced to deny the possibility of experiences of constant conjunctions involving tokens of the knowledge relations. After all, it is Hume's position that such experiences are *not* sufficient for the formation of the relevant associations. We will see why Hume has this position in short order. Yet, even if Hume were to grant that experiences of the right sort of constant conjunctions are sufficient for the formation of the relevant associative tendencies, these associations could *not* generate instances of *demonstrative* knowledge.

Recall that an instance of demonstrative knowledge must be produced by the faculty of reason via the creation of a chain of instances of intuitive knowledge. Consider a toy example. If you were unable to intuit that three are more than one, then you would have to demonstrate it. If you were to carry out this demonstration and thus acquired demonstrative knowledge that three are more than one, then you must have acquired intuitive knowledge that three are more than two and intuitive knowledge that two are more than one. Supposing that you are unable to intuit that three are more than one, you cannot have demonstrative knowledge that three are more than one without these intermediate intuitions. But if an association arising from and responsive to causal relations were to generate in you a perception that three are more than one, then you could have demonstrative knowledge that three are more than one without these intuitions. Therefore, associations arising from and responsive to causal relations cannot generate instances of demonstrative knowledge.

Given that intuitive and demonstrative knowledge are the two kinds of knowledge, it follows that if associations arising from and responsive to causal relation were to generate knowledge, then they would generate instances of intuitive knowledge. These instances of intuitive knowledge could not be impressions since the imagination's associative tendencies generate only ideas.

Hence, if one could experience tokens of the knowledge relations constantly conjoined with the objects of impressions or beliefs, then one's perceptions of the tokens of the knowledge relations in question must be (i) instances of intuitive knowledge and (ii) ideas. With this in mind, consider the following case:

Button: While discussing colors, a teacher presses a sequence of buttons, each of which causes an image to be projected onto the white board. The images which are caused to appear by the third button are images of patches of crimson beside patches of scarlet. The students see the teacher pressing the buttons and the subsequent visual displays as pairs of complex impressions, one following the other. Being a bit of a bore, the teacher repeats this sequential exercise many times with many images. On the 87th repetition, a student sees the teacher pressing the third button but does not look at the white board. At this point, she does not need to look—after 86 times, she has had enough.

Each repetition, there is a genuine causal relation between the teacher pressing the third button and the projection of the image of the resembling patches. Supposing that the student is a normal causal reasoner, she would experience the constant conjunction and develop the relevant associative tendency. As a consequence, the correct diagnosis of the case, by Hume's own lights, is that the student would form a belief₁ upon seeing the teacher pressing the third button on the 87th repetition. This belief₁ would have, as an object, the image of the resembling patches of crimson and scarlet (which is not visible to her but which is being projected onto the white board). Since this belief₁ is copied from the student's impressions of prior instances of the projected image, it resembles them. It is, in fact, an image in its own right. Thus, it has a token resemblance (a knowledge relation) between its crimson and scarlet parts as an object, which makes it an instance of intuitive knowledge as well.⁴⁴

If this analysis is correct, then Button represents a wide range of counterexamples to the claim that instances of knowledge do not arise from associations arising from and responsive to causal relations. Since beliefs₁ arise from such associations, those instances of intuitive knowledge that are identical to them arise from causal natural relations.

Now, we need definitions for each kind of Humean knowledge. Hume holds that all instances of demonstrative knowledge must arise from the faculty of reason via chains of intuitive knowledge, so none of them can arise from associations with impressions or beliefs. By contrast, there are some instances of intuitive knowledge that can arise from associations with impressions or beliefs, as Button shows. And, although I did not address this issue, it is equally clear that some instances of intuitive knowledge do not arise from associations with impressions or beliefs. As I argue in other work, some sense impressions are instances of intuitive knowledge, and Hume holds that no sense impression arises from associations with anything else.⁴⁵ Another difference between the two kinds of knowledge is that intuitive knowledge can come in the form of impressions or ideas, while demonstrative knowledge must come in the form of ideas. Here are corresponding definitions for each kind of knowledge:

⁴⁴ Note that the object that makes the belief₁ an instance of knowledge is a resemblance relation between its parts, while the belief₁ also has as an object a resemblance relation between the patches as they appear on the board at that time.

⁴⁵ See my first chapter.

x is an instance of intuitive knowledge =_{df} x is an immediately present perception that has a token of a knowledge relation between some of the parts of the perception as an object; x is an instance of demonstrative knowledge =_{df} x is an idea that has a token of a knowledge relation between some of the parts of the perception as an object; that arises subsequent to a suitably related chain of instances of intuitive knowledge; and that does not arise from impressions or beliefs with which it is associated (because of natural causal relations).⁴⁶

4. Hume and the entailment thesis

In order to evaluate Hume's relationship with the entailment thesis, I will now gather together the threads of the preceding discussion. I will present interpretative claims as premises of valid arguments that have positions on the entailment thesis as their conclusions. The goal is to find the best argument of this sort which fits with Hume's texts. There is sufficient reason for reading Hume as committed to endorsing the conclusions of the arguments that emerge from this method as his position on the entailment thesis.

From the above definitions and the background provided by the preceding discussion, we can derive claims about the relationships between the various kinds of Humean belief and knowledge. From the fact that a belief₁ must arise and acquire its vivacity from an impression or other belief that it is associated with (because of a natural causal relation) and the fact that an instance of demonstrative knowledge could not arise from an impression or belief that it is associated with (because of a natural causal relation), it follows that:

P1. It is necessary that if a perception is a belief₁, then it is not the case that it is an instance of demonstrative knowledge.

For the reasons noted, the definition of intuitive knowledge does not preclude an instance of intuitive knowledge arising from an impression or belief that it is associated with (because of a natural causal relation). However, there are instances of intuitive knowledge that do not arise in this way (e.g. instances of perceptual knowledge). So,

P2. It is possible that a perception is a belief₁ and an instance of intuitive knowledge; and

P3. It is possible that a perception is not a belief₁ and an instance of intuitive knowledge.

The claims we can make regarding beliefs₂ parallel those regarding beliefs₁. For the same reason that instances of demonstrative knowledge cannot arise from associations arising from and responsive to causal relations—they arise from the sole operation of reason and these associations are partially constitutive of the imagination—they cannot arise from another form of custom. Thus,

⁴⁶ One possibility which these definitions leave open is that demonstrative knowledge is a species of intuitive knowledge. Since I have not defended a position on what exactly demonstrative knowledge is—I have been primarily focused on what it is *not*—I will not commit to a position on this issue.

P4. It is necessary that if a perception is a belief₂, then it is not an instance of demonstrative knowledge.

When it comes to intuitive knowledge, we can conceive of mere repetition cases parallel to the aforementioned cases involving the unknown city or the ugly rival where the object of the repeated idea is a token of the knowledge relations. Perhaps one's thoughts are repeatedly drawn to an idea of token knowledge relation like crimson being darker red than scarlet. There does not seem to be any principled reason to doubt that the effect of the mere repetition this idea would be increased vivacity. Hume's claim about mere repetition is, after all, just that. So long as an idea "shou'd frequently make its appearance in the mind, this idea must by degrees acquire a facility and force; and both by its firm hold and easy introduction distinguish itself from any new and unusual idea" (T 1.3.9.16). No other conditions need to be met. On the other hand, there are many cases where instances of intuitive knowledge do not arise from custom at all. Again, the case of perceptual knowledge is instructive. So, we can add these parallel claims for belief₂:

P5. It is possible that a perception is a belief₂ and an instance of intuitive knowledge; and
 P6. It is possible that a perception is not a belief₂ and an instance of intuitive knowledge.

From these premises, we can infer that Hume would endorse some claims that are short steps from the negation of the entailment thesis. If P1 and P4, then

C1. It is necessary that if a perception is an instance of demonstrative knowledge, then it is not a belief₁ and it is not a belief₂.

Since it is necessary that a belief is either a belief₁ or a belief₂, whether it is also an instance of intuitive knowledge or not, it follows that:⁴⁷

C2. It is not the case that it is necessary that if a perception is an instance of knowledge, then it is a belief.

This is equivalent to the claim that it is possible that a perception is an instance of knowledge and not a belief. But then we can infer that it is possible that a perception is an instance of knowledge and is distinct from all beliefs. Given Hume's endorsement of the Separability Principle and the Conceivability Principle, and supposing that beliefs have propositions as objects, it follows that Hume would deny the entailment thesis:

~ET. It is not the case that it is necessary that if one knows that *p*, then one believes that *p*.

Although this is sufficient for our purposes, I must note that the same goes for intuitive knowledge. Since the very same perception could satisfy both P3 and P6 (as in the case of an instance of perceptual knowledge), it is the case that

P7. It is possible that a perception is not a belief₁, not a belief₂, and is an instance of intuitive knowledge.

⁴⁷ See the prior footnote on this issue.

Since it is necessary that a belief is either a belief₁ or a belief₂, yet again ~ET follows for the same reasons as above.⁴⁸

5. Methodological reflections on the preceding

Hume's denial of the entailment thesis puts him in conflict with diverse opponents. By way of conclusion, I will now canvass the four main kinds of possible opponents; evaluate Hume's responses to each; and draw from these evaluations some lessons about the methodology we ought to deploy in establishing the truth or falsity of ET. Here are the four options:

1. Some defenders of the entailment thesis might agree with Hume about his account of the mind, and they might agree, upon reflection, that the terms of this account can be used to specify and clarify what they mean by 'belief' and 'knowledge' such that their dispute with Hume is dissolved as merely verbal. In such cases, the dispute between Hume and his opponents is only an apparent dispute.
2. Other opponents of Hume's position might deny that belief or knowledge can be analyzed or described in any other terms, whether or not they are the terms of a more fundamental theory like Hume's account of the mind. So, for example, while Hume maintains that beliefs can be identified as vivacious ideas of two different kinds (and identified as such without making use of the term 'belief' in the course of this identification), an opponent of this kind would deny that a true analysis of this sort can be given. Since the entailment thesis provides a necessary condition on knowledge, it is a partial analysis of knowledge. As a consequence, some opponents of this variety might simply withhold belief with respect to it instead of endorsing it themselves.
3. Still other opponents might disagree with Hume about his account of the mind (or another more fundamental theory that entails the negation of at least one of its core claims), and this disagreement would be what explains their disagreement about the entailment thesis. The disputants have different understandings of the nature of the mind, and they would affirm that these differing views are the reason for their differing views about the entailment thesis.
4. Finally, some defenders of the entailment thesis might disagree with relevant parts of Hume's normative epistemological positions despite not disagreeing with him about his account of the mind. For instance, while Hume holds that knowledge must be infallible, an opponent of this variety might endorse a form of fallibilism.

Lending credence to the possibility of the first kind of opponent, some philosophers have argued recently that there are two notions of belief: thick and thin. Thin belief requires only that one represents that P, and mere thin beliefs are motivationally inert. As Wesley Buckwalter, David

⁴⁸ As far as I know, there is only one argument in the extant literature that links Hume to the entailment thesis, and it is found in Schmitt 2014 (81-88). Schmitt argues that "for Hume knowledge entails justified belief." The only other case I have found is that of Lorne Falkenstein (2012, 129fn28), who agrees, in passing, that Hume denies the entailment thesis.

Rose, and John Turri argue, "it doesn't require you to like it that P is true, to emotionally endorse the truth of P, to explicitly avow or assent to the truth of P, or to actively promote an agenda that makes sense given P."⁴⁹ By contrast, thick beliefs also involve "*emotion* or *conation*"; indeed, "in addition to representing and storing P as information, you might also like it that P is true, emotionally endorse the truth of P, explicitly avow or assent to the truth of P, or actively promote an agenda that makes sense given P."⁵⁰ As these authors suggest, Hume's notion of belief is a thick one.⁵¹ Both beliefs₁ and beliefs₂ are thick beliefs, and Hume explains the above-listed properties of thick beliefs by reference to vivacity. It is because a belief is vivacious that it engenders emotional endorsement, encourages avowals and assent, and joins with affective attitudes like desires to cause actions.

With a thick-thin distinction between kinds of beliefs in hand, one might be tempted to diagnose the disputes between Hume and defenders of the entailment thesis as merely verbal disagreements. Perhaps one must *thinly* believe what one knows, even if one could know something without *thickly* believing it. The solution here would be to make the necessary terminological distinctions; to come to an agreement about the linguistic usage of the relevant terms; and to offer a philosophically-informed description of the concepts that these terms are used to refer to in the terms of Hume's account of the mind.

It may be that some of Hume's opponents have a merely verbal disagreement with him, but many of his opponents do not fall into this camp. There are two problems with generalizing this interpretation to *all* of Hume's disputes with defenders of the entailment thesis. First, nothing in Hume's discussions of the nature of belief indicates that he takes the issue to be a merely verbal one, in any sense whatsoever. Hume expresses distaste for and disinterest in resolving merely verbal disputes at several points in his writings, and yet he spends much of his time developing his account of belief.⁵² Although a thick-thin distinction might help *us* make sense of Hume's position, it seems that Hume would simply deny that there are thin beliefs. As he develops his account of belief, it is clear that Hume takes himself to be doing more than presuming a distinction amongst kinds of beliefs and focusing on two kinds of the thick ones. The same goes for Hume's position on knowledge. And it is likely that those contemporary epistemologists who defend the entailment thesis would agree with Hume that their dispute is not merely verbal.

Second, there is no reason to think that all defenders of the entailment thesis agree with Hume about his account of the mind. As far as I am aware, not a single defender of the entailment thesis endorses its relevant parts. Here one could reply that any apparent disagreements about the relevant more fundamental theories are themselves merely verbal. Whether or not there is a sound argument of this sort, the burden is not on me to address the possibility here. An argument of that sort would likely implicate many philosophical disputes as merely verbal, and an evaluation of such an argument is beyond the purview of the present project.

⁴⁹ Buckwalter, Rose, & Turri 2015 (749).

⁵⁰ Buckwalter, Rose, & Turri 2015 (749).

⁵¹ Buckwalter, Rose, & Turri 2015 (750).

⁵² See, e.g., T 1.2.5.21, T 1.2.6.21n12.1App, T 1.3.9.19n22, T 1.3.14.14, T 1.4.3.10, T 1.4.6.7, T 2.1.7.8, T 2.3.1.16, T 3.1.2.7-9, E 8 (e.g. 8.22-25), and D 12.7.

Let us suppose, then, that Hume and at least some of the defenders of the entailment thesis are not engaged in merely verbal disputes. For those who are, the resolution is easy. For those who are not, and there are those who are not, a different response must be made on Hume's behalf. Consider first those who deny that belief or knowledge can be analyzed or described in any other terms.⁵³ Perhaps, upon observing the history of failed attempts to analyze the nature of knowledge post-Gettier, such an opponent would maintain that knowledge and similarly basic concepts like belief are primitive. As I have detailed above, Hume develops a general account of the mind and then locates beliefs and instances of knowledge in it. This "methodist" methodology results in the definitions of belief and knowledge that I formulated on Hume's behalf.⁵⁴ It seems that the opponent presently under consideration would deny that any such definition could be true.

Arbitrating this kind of dispute requires further reflection on the nature of the definitions I have presented as Hume's, and on the kind of analysis Hume is offering us. Hume labels these definitions as 'definitions' (or parts of them as parts of definitions), and context indicates that he intends them—and definitions more generally—to be expressions of necessary and sufficient conditions.⁵⁵ As such, the opponent who maintains that belief or knowledge is primitive only needs one counterexample to undermine them. And in maintaining that these concepts are primitive, such an adversary must maintain that there is good reason to think that there is a counterexample for each definition.

This takes us to the issue of what kind of analysis Hume is offering. Unlike those post-Gettier epistemologists who seek to analyze knowledge in the terms of first-order epistemology (i.e. using terms like 'justification', 'truth', 'warrant', and so on), Hume offers us analyses of knowledge and belief in the terms of a more fundamental theory. They are accounts of "the underlying nature" of knowledge and belief.⁵⁶ Hume's goal is scientific explanation, not semantic analysis. Hume identifies knowledge and belief with some of the beings specified by his account of the mind. In fact, Hume could grant that knowledge is primitive in the sense that it cannot be given a true analysis in the terms of first-order epistemology, but simply deny that the same goes for the sort of analysis he offers. Even if the biologist could not use the terms of her science to state a true sufficient condition that all mammals satisfy, it may be possible to do so in the terms of fundamental physics. And indeed, we surely would hope so, for otherwise 'mammal' as used by the biologist would not cut nature at its (most fundamental) joints. For any two mammals, there should be a shared and non-arbitrary explanation *in the terms of fundamental physics* of why they are mammals. If there is no such explanation, we should infer *either* that the property of being a mammal, as specified by our best biological theory, is strongly emergent *or* that our best biological theory requires revision.⁵⁷

⁵³ Timothy Williamson may be the paradigm of an opponent of this variety. See his 2000 (ch. 1).

⁵⁴ For discussion of methodism and its alternative, particularism, see Sosa 1980. As we will see below, Hume's strain of methodism breaks out of the paradigm presented by Ernest Sosa, but Sosa's analysis is illuminating nonetheless.

⁵⁵ See, e.g., T 1.3.6.15, T 1.3.7.5, T 1.3.7.6, T 1.3.8.1, T 1.3.8.6-11, T 1.3.8.15, T 1.3.9.8, T 1.3.10.3, T 1.4.2.41, T 2.3.6.10, T App.3, E 5.12, and E 5.13.

⁵⁶ To borrow a phrase from Brian Ball (2013, 69).

⁵⁷ For discussion of strong emergence and weak emergence, as well as some examples, see Chalmers 2006.

Given the kind of analysis that Hume offers us, he has two lines of response to those who deny that belief or knowledge can be analyzed or described in any other terms. First, if these opponents justify their view by reference to the history of failed attempts to analyze the nature of knowledge post-Gettier, then Hume can point out that this justification is insufficient to disregard his project. Simply because semantic analyses of knowledge have failed, we are not licensed to infer that scientific explanations of knowledge (or belief) will suffer a similar fate. Second, since Hume's goal is to explain knowledge and belief in a broader account of the mind, the competitors for his accounts of knowledge and belief are other theories of mind. As discussed in section 2.4, Hume is deeply opposed to the idea that philosophers are engaged in a radically different kind of inquiry than scientists. Hume repeatedly emphasizes the shared pursuit of explanatory generality. If theory A explains only a proper subset of what theory B explains, theory B should be preferred, all else equal (and, really, little else matters). Like the scientist, the philosopher ought to seek the philosophical theory that explains as much as possible. Hume's account of the mind effectively explains a wide variety of phenomena that the philosopher seeks to explain. It explains everything from moral judgments to mind wandering to actions. As a consequence, apparent counterexamples to Hume's account of the mind would ideally be consistent with a theory that is capable of effectively explaining *at least as much as* Hume's account of the mind. Until such a theory is presented, we should not discard Hume's account since a lone counterexample is a far cry from a competing theory and since future adjustments may make an account nearby to Hume's compatible with the counterexample.

Hume would have a similar response to the third kind of opponent listed above. This is the sort of opponent who would disagree with Hume about his account of the mind but who would agree that it is this disagreement that explains their different positions on the entailment thesis. Hume would argue that the only way to resolve such a dispute would be to consider the theory that this kind of opponent has to offer. This theory would be either a competing account of the mind or another theory that entails the negation of at least one of the relevant claims of Hume's account of the mind.⁵⁸ As above, the dispute will turn on the ability of the theory to explain more effectively at least what Hume's account of the mind is capable of explaining.

Finally, the last kind of opponent would disagree with the relevant parts of Hume's normative epistemological positions despite agreeing with him about his account of the mind. This is possible, even on the supposition of the claim, which Hume would endorse, that "for each [normative] property instantiated by some object, *o*, there is a natural property that *o* has, which the [normative] property always *as a matter of fact* accompanies" (the so-called 'ethical supervenience thesis', which has been described as the "least controversial thesis in metaethics").⁵⁹ To take a toy example, Hume and this kind of opponent could agree that there are two perceptions, p_1 and p_2 , such that p_1 has a proportion in quantity or number between some of its parts as its object, whereas p_2 has a resemblance between some of its parts as an object. As we have seen, these natural properties are some of those that Hume's account of the mind ranges over. Hume and his opponent could nonetheless disagree about the distribution of normative properties. Hume would maintain that both p_1 and p_2 are instances of knowledge, while his rival

⁵⁸ This is not to claim that all competing theories of the mind generate contrary results on the entailment thesis. Katalin Farkas (2015) argues that an account of the mind incompatible with Hume's combines with equally incompatible moral/normative epistemological views to generate a denial of the entailment thesis.

⁵⁹ The first quote is from Dreier 1992 (14), while the second is from Rosen forthcoming.

could deny that p_1 is an instance of knowledge because p_1 lacks some other natural property that they maintain is necessary for p_1 to be an instance of knowledge.

Hume's best response to this sort of opponent depends on the front on which they oppose him. Although Hume's naturalism would lead him to deny that any property is *irreducibly* normative—that is, not itself identical to or ultimately explained by natural properties—he maintains that knowledge is a normative property because he holds that it entails being epistemically certain in the way previously discussed. Nonetheless, descriptions of the perceptions that Hume maintains are instances of knowledge can be given in entirely non-normative terms. The definitions presented previously are descriptions of this sort. They are, in effect, descriptions of what Hume takes to be knowledge-making features.⁶⁰ In general, definitions Hume offers are expressions of what *ought* to count as a belief, an instance of knowledge, a cause, and so on. In the case of Hume's second definition of 'cause', it is a common interpretation that Hume's claim is that our concept of causation is such that only those objects whose ideas *would* determine the *ideal* mind like ours to form the relevant ideas of others (i.e., their effects) in the requisite manner count as genuine causes.⁶¹ Given Hume's position on the origin of epistemic normativity, he would interpret the disagreement described above in my toy example as a dispute over what an ideal mind like ours would deem to be knowledge-making features.⁶²

Hume has strong normative views about what knowledge is like, but he spends very little effort defending those undergirding his particular strain of knowledge infallibilism. As with any normative debate, everything would turn on how Hume's position on knowledge could handle the balance of cases relative to the alternatives.

By contrast, Hume maintains that beliefs form a non-normative category. This is not to claim that Hume does not hold that there are norms that govern *rational* or *justified* belief; rather, it is to claim that he would be resistant to any account of belief that makes it *constitutive* of belief that it conform to a norm. This is in no small part because of Hume's goal of explaining as much of our behavior and thought in terms of belief, including that of those of us who violate any and all norms surrounding belief.⁶³ How Hume would oppose a philosopher who argues to the contrary that beliefs form a normative category depends on the details of their view. If they maintain that beliefs form an irreducibly normative category, then Hume could rely on the general considerations which lead him to his naturalism in the first place (which is probably the best strategy). If they maintain that beliefs form an irreducibly normative category (like knowledge for Hume), then Hume could argue both that there is linguistic data to the contrary and that there are explanatory costs of doing so.

The preceding reveals that I deny that Hume's account of the mind itself ranges over irreducibly normative properties. Some interpreters have suggested that to the contrary that Hume's property

⁶⁰ For discussion of related issues, see Sylvan 2018.

⁶¹ See, e.g., Garrett 1993 (180-183). For a competing reading, see De Pierris 2002 (529-536).

⁶² For an interpretation of Hume's naturalistic account of the origin of epistemic normativity, see Garrett 2007 (8-11). See also Garrett 2015 (ch. 5) and Garrett 2016.

⁶³ Indeed, some, like Michael Costa (1981), have argued that any beliefs other than beliefs₁ are not justified beliefs.

of vivacity *just is* a normative property (namely, a kind of intrinsic *prima facie* justification).⁶⁴ My reading of Hume's account of the mind is as a thoroughly naturalistic early entry in the annals of descriptive psychology or cognitive science.⁶⁵

These reflections about the dialectic surrounding Hume's position on the entailment thesis reveal lessons for our methodology in arguing for views on the entailment thesis. There are three broad kinds of methods. Traditional epistemologists analyze thought experiments and cases where they have intuitions about the beliefs and knowledge had by the agents involved. Upon canvassing a sufficient number of sufficiently well-specified particular examples, these philosophers arrive at a general view on the entailment thesis. If done well, this method generates an argument for a view that best explains their intuitions about the cases that they have examined that impinge on the entailment thesis.⁶⁶ Experimental epistemologists, by contrast, understand the relevant dataset to be more expansive than the intuitions of philosophers. They conduct experiments on as many people as possible—non-philosophers included—in order to get statistically robust information about the intuitions of people about examples relevant to the truth of the entailment thesis. If done well, this method generates a crowd-sourced argument for a view on the entailment thesis, a view that best represents that of people in general.⁶⁷ The third method, employed by scientists (whether they be psychologists, neuroscientists, or otherwise), is to use the instruments and methods of the sciences to analyze the phenomenology, biology, and neuroscience of knowledge and belief. If done well, this method could be used to generate an argument for a view on the entailment thesis that is compatible with a broader scientific theory.⁶⁸

These three methods are not mutually exclusive. They should be understood as methodological extremes. Although he does not say so, Hume would likely maintain that all of them must be used by any advocate of a defensible view on the entailment thesis. The method of traditional epistemology is needed (i) in formulating strong arguments for any normative epistemological views that are premises in one's argument for a view on the entailment thesis and (ii) because anyone with a view on the entailment thesis will need to make countless judgments about the evidence for their view, even if they heavily rely on the experimental method. The method of experimental epistemology is needed because the method of traditional epistemology is susceptible to cognitive and linguistic biases. Any individual philosopher's grasp of the concepts of knowledge and belief is a function of their limited and non-representative experiences. As Hume says, we need to gather as many "experiments" from "a cautious observation of human life" as we can (T I.10). And the method of the scientists is needed because a defender of a position on the entailment thesis must take stands (implicit or explicit) about the nature of the

⁶⁴ This particular view is considered by Loeb (2002). For another instance of this sort of interpretation, see Spector 2003. For a response to the latter, see Meeker 2006.

⁶⁵ Hence Loeb's labeling of positions like mine as "descriptivist" (2006, 324-330).

⁶⁶ For arguments of this kind, see, e.g., Lehrer 1968 and Ring 1977.

⁶⁷ For arguments of this kind, see, e.g., Myers-Schulz & Schwitzgebel 2013, Murray, Sytsma, & Livengood 2013, Rose & Schaffer 2013, and Buckwalter, Rose, & Turri 2015.

⁶⁸ It seems there are few scientists interested in the entailment thesis for its own sake. However, Jennifer Nagel reports that "in developmental psychology it is widely held that children acquire the concept of knowledge before the concept of belief" and that psychologists generally agree "that belief is the more sophisticated concept, and is harder to attribute than knowledge" (2013, 292). The experiments supporting these claims lead psychologists to presume the falsity of the entailment thesis in developing their broader accounts of the mind. See, e.g., Kaminski, Call, & Tomasello 2008 and Wellman & Liu 2004.

mind and other broader issues. An adequate understanding of the nature of the mind must rely on scientific evidence.

As his pathway to his view on the entailment thesis shows, Hume combines the method of the scientists (namely, that of early psychologists) with that of the traditional epistemologists. Hume's method is not perfect. Hume ought to defend his normative views about knowledge at greater length. And Hume ought to do a better job in evaluating the relationship between his own concepts and those of the broader community to which he belongs and to which he communicates his position. Nonetheless, Hume has much to teach us.

6. Conclusion

In this paper, I have argued that Hume would deny the entailment thesis, which is the view that it is necessary that if one knows that p , then one believes that p . Since the entailment thesis has achieved the status of dogma in the last few decades, I intend my efforts to explain Hume's position to give some reason for caution in assuming the truth of the entailment thesis without argument. Yet, even if Hume's position is not ultimately tenable, it rests on an account of the mind and an associated methodology that offer insights into how we should settle the question of whether knowledge entails belief. Hume teaches us that we must work in a systematic fashion—on many fronts simultaneously—if we are to conclusively resolve the dispute over the entailment thesis. In particular, we must engage in a thorough study of the mind if we are to come to informed positions on the nature of knowledge and belief. Hume's denial of the entailment thesis, then, is enlightening regardless of the details of its underlying argumentation. It represents a challenge to every philosopher with a positive view on the entailment thesis to develop an account of the mind, or to explain why they need not do so.

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Abbreviations

- 'AT' volume, page number from Descartes' *Oeuvres de Descartes* (Vrin/CNRS, 1964-1976).
- 'T' book, part, section, paragraph from Hume's *Treatise* (Oxford, 2007), unless citation is from the Appendix main text, then the convention is 'T App' = paragraph, or unless citation is from the Appendix notes, then the convention is book, part, section, paragraph from Hume's *Treatise* with 'n' for note on the corresponding paragraph in the Appendix main text
- 'A' paragraph from the *Abstract* to Hume's *Treatise* (Oxford, 2007).
- 'E' when followed by Arabic numeral: section, paragraph from Hume's first *Enquiry* (Oxford, 2007).
- 'D' part, paragraph from Hume's *Dialogues* (Cambridge, 2007).
- 'E' when followed by Roman numeral: book, chapter, paragraph from Locke's *Essay* (Oxford, 1975).

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