

# Hume on Theoretical Simplicity

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## 1. Introduction

In the introduction to *A Treatise of Human Nature*, Hume laments “the weak foundation even of those systems, which have obtained the greatest credit” (THN Intro 1).<sup>1</sup> In their place, he hopes to “propose a compleat system of the sciences, built on a foundation almost entirely new, and the only one upon which they can stand with any security” (THN Intro 7). This raises an obvious but important question: why prefer one theory or system over another? Some theories might simply fail to account for empirical data, and thus lack a foundation in “experience and observation” (*ibid.*). At the same time, competing theories can sometimes equally account for empirical data.<sup>2</sup> In such cases, how are we to adjudicate between theories?

A criterion that Hume repeatedly appeals to is that of simplicity: *ceteris paribus*, simpler theories are better than convoluted ones. In this, Hume is very much in step with the thinkers of his time. Some of Hume’s philosophical predecessors, like Leibniz and Malebranche, argue that the laws of nature are created simple, and our theories should follow suit. But, this should not be mistaken for a mere philosophical affectation. As Manzo (2009), Schliesser (2010), and Demeter (2016, Ch.3) have noted, Hume himself lauds the Copernican system for its simplicity. He criticizes “astronomy before the time of *Copernicus*” for its lack in this regard:

1. In the references to Hume’s texts, ‘THN’ refers to *A Treatise of Human Nature*, ‘EPM’ refers to the *Enquiry Concerning the Principles of Morals*, ‘EHU’ refers to the *Enquiry Concerning Human Understanding*, ‘DNR’ refers to the *Dialogues Concerning Natural Religion*, ‘EMPL’ refers to *Essays Moral, Political, and Literary*, and ‘HL’ refers to *The Letters of David Hume*. Arabic numerals refer to section and paragraph numbers (EPM, EHU, and DNR) or to book, part, section, and paragraph numbers (THN). EMPL numbers refer to pages in the Miller revised edition of *Essays* (Liberty Fund Inc., 1985). HL Roman numerals refer to volume and Arabic numerals refer to page numbers in the Greig edition of the *Letters* (OUP, 1932).
2. Indeed, we might even have reason to prefer a theory that less adequately accounts for empirical data. I argue in my Qu (2018) that Hume prefers the conativist theory of motivation to its rationalist counterpart precisely because it is simpler (despite its awkward appeal to the calm passions to account for motivation in the apparent absence of passions).

The antients, tho' sensible of that maxim, *that nature does nothing in vain*, contriv'd such intricate systems of the heavens, as seem'd inconsistent with true philosophy, and gave place at last to something more simple and natural [sic]. (THN 2.1.3.7)

In the *Dialogues*, Philo likewise praises the Copernican methodology for its commitment to simplicity:<sup>3</sup>

One great foundation of the Copernican system is the maxim, *That Nature acts by the simplest methods, and chuses the most proper means to any end*; and astronomers often, without thinking of it, lay this strong foundation of piety and religion. The same thing is observable in other parts of philosophy ... (DNR 12.2)

More recently, some scholarship suggests that Hume's respect for theoretical simplicity might have been influenced by the great scientific thinkers of his day. Hazony (2014, 152) has argued that Boyle takes the "excellence" of scientific theories to be founded on two qualities: the simplicity of their terms and their generality. Hazony considers Hume to be influenced by Boyle and Newton in this regard. In similar vein, Demeter (2012, 586; 2016, 128), Hazony (2014), and Hazony & Schliesser (2016) have argued that Hume inherits the analytic/synthetic method from Newton. This method involves (among other things) subsuming varied phenomena under a small number of causal principles. Clearly, Hume was operating in an intellectual context that emphasized the importance of simplicity.

3. Philo is typically taken to speak for Hume. See, for instance, Kemp Smith's introduction to his edition of the *Dialogues* (Hume, 1779/1947). See also Parment (1976), Penelhum (1979), Passmore (1980), Popkin (1980), Flew (1986), Tweyman (1986), O'Connor (2001, 214), Bell (2008, 349), Holden (2010, 5), Garrett (2015, 287), Lorkowski (2016), and Ooi (2021). I argue for this position in my Qu (2022b). Even if one does not go this far, it is difficult to dispute that Hume agreed with Philo about the Copernican system given that Philo echoes Hume's own words in THN 2.1.3.7.

Although crucial to Hume's methodology, there has been relatively little research done in Hume scholarship on the notion of theoretical simplicity.<sup>4</sup> In this paper, I look to rectify this lacuna in the literature. Specifically, I look to answer three key questions as they relate to Hume's philosophy: (1) *what is theoretical simplicity?*, (2) *why should we favor simpler theories over complex ones?*, and (3) *can a theory be too simple, and if so, how?* In attempting to answer these questions, I will argue as follows.

1. For Hume, theoretical simplicity concerns the causal explanation of phenomena in terms of the fewest possible causes.
2. While he does not follow his contemporaries in appealing to God to justify the truth-conduciveness of theoretical simplicity, some of his discussions of theoretical simplicity are suggestive of a meta-inductive justification. Hume also sees theoretical simplicity as having intrinsic aesthetic value, over and above its epistemic merit.
3. Hume recognizes that there are both epistemic and aesthetic tradeoffs involved in theoretical simplicity, which might rule against overly simple theories.

## 2. What Is Theoretical Simplicity?

In contemporary philosophy, the notion of theoretical simplicity is cashed out in several different ways. Perhaps the most ubiquitous conception of simplicity is something like Occam's Razor: entities should not be multiplied unnecessarily.<sup>5</sup> Occam's Razor is an *ontological* conception of simplicity. This might be further disambiguated. Lewis

4. Most of the work that touches on this matter does so obliquely at best. Some exceptions are Duncan (2009), Schliesser (2010), and Demeter (2016, Ch.3). Qu (2016; 2018) and Morett (Forthcoming-a; Forthcoming-b) discuss Hume's employment of simplicity, but not its nature.
5. *Numquam ponenda est pluralitas sine necessitate*: plurality must never be posited without necessity.

(1973, 87), for instance, famously distinguishes between quantitative parsimony (postulate as few entities as possible) and qualitative parsimony (postulate as few types of entities as possible). Alternatively, one might hold a *syntactical* conception of simplicity, where simplicity rests on the number and complexity of principles rather than entities.<sup>6</sup>

Hume's methodological commitment to theoretical simplicity does not fit neatly into these contemporary categories. In Hume's encomiums of simplicity, he takes simplicity to concern the explanation of effects by means of the fewest possible causes:

... 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. (THN Intro 8)

... it being an inviolable maxim in philosophy, that where any particular cause is sufficient for an effect, we ought to rest satisfied with it, and ought not to multiply causes without necessity. (THN 3.3.1.10)

... the utmost effort of human reason is, to reduce the principles, productive of natural phaenomena, to a greater simplicity, and to resolve the many particular effects into a few general causes, by means of reasonings from analogy, experience, and observation. (EHU 4.12)

For Hume, theoretical simplicity involves explaining phenomena in terms of as few causes as possible. It is worthwhile to examine the above passages in more detail.

Hume's desire to reduce the number of causes we assign goes hand-in-hand with his desire to explain specific causal regularities in terms of higher-order ones.<sup>7</sup> THN Intro 8 most clearly illustrates this

6. As Goodman (1955) points out, syntactical simplicity is relative to a language. I bracket this concern for the purposes of this paper.

7. There are many instances of Hume explaining or subsuming causal explanations under more general explanations. In EHU 5.13–20, for example, Hume

relationship between these two endeavors: Hume tells us to explain "all effects from the simplest and fewest causes" precisely because "we must endeavor to render all our principles as universal as possible, by tracing up our experiments to the utmost". Likewise, in EHU 4.12, he tells us to simplify our causal principles by "resolving the many particular effects into a few general causes". This unites the two systematic principles by (1) reducing the number of causes we assign and (2) explaining lower-level (particular) causal generalizations by means of higher-level (general) ones. Thus, we might see theoretical simplicity emerge due to the search for ever more general causal explanations. In our recognition of the common threads between causal principles and consequent subsumption of them under higher-level causal principles, we reduce the number of causes we assign. For Hume, our applications of theoretical simplicity ought to be guided by this systematic methodology of higher-level causal generalization.<sup>8</sup>

On Hume's account, this emphasis on higher-level generalization means that theoretical simplicity concerns the reduction of cause-types rather than cause-tokens. Hume is not trying to explain effects in terms of the fewest possible entities (the limit case being something like occasionalism, which attributes all effects to one entity: God). Rather, via higher-level generalizations, he is trying to explain effects in terms of as few *types* of entities as possible. As EHU 4.12 makes clear, the goal is to "resolve the many particular effects into a few *general* causes" (emphasis added).

I have said that Hume's account of simplicity does not fit neatly into the contemporary categories mentioned above. Nonetheless, his

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confirms his theory of belief by finding "other operations of the mind analogous to it, and to trace up these phaenomena to principles still more general" (EHU 5.13; see also THN App 3). In the *Dissertation on the Passions*, he looks for a common principle that might be operative in both direct and indirect passions. In THN 3.1.2.6, having proposed that we distinguish good and evil through a certain pleasure or pain, he rejects that these sentiments are each and all original qualities; instead, he looks to "find some more general principles" from which these sentiments are derived.

8. Thank you to an anonymous referee for a helpful discussion on this matter.

account can be seen as falling under (or at least adjacent to) either a syntactical or an ontological conception of simplicity, depending on how we cash out simplicity. Certainly, Duncan (2009, 140) reads Hume as committed to a syntactical notion of theoretical simplicity: “the sort of simplicity that Hume has in mind appears, then, to be that of an explanation that can be simply stated”. Demeter (2016, 60) likewise characterizes Hume’s account of simplicity as “a commitment to not introducing new explanatory principles for every newly found phenomenon”. Duncan and Demeter’s emphases are slightly different: Duncan focuses on the complexity of a given principle, while Demeter focuses on the number of explanatory principles. However, both emphases are suggested by Hume’s commitment to account for phenomena in terms of the fewest possible causes. All things being equal, since Hume appeals to fewer causes, his causal principles would be more easily stateable if they involved fewer fundamental explanatory terms (in line with Duncan’s reading). Hume’s methodology would also result in a smaller number of causal principles. After all, if we have to appeal to a different cause for every effect, then our causal principles would multiply quickly. Hume’s desire to subsume as many phenomena as possible under the fewest causes means that he aims to make use of existing causal principles to explain novel phenomena (in line with Demeter’s reading).

With a little more work, Hume’s notion of simplicity can also be seen as closely related to an ontological notion.<sup>9</sup> Admittedly, Hume does not seem to be an ardent advocate for quantitative parsimony. He postulates a multitude of perception tokens, and considers this to be methodologically unproblematic. But, if we assume a principle that we should not wantonly postulate causally inert entities, then Hume’s

9. It is perhaps worth noting that some of Hume’s philosophical contemporaries appear to eschew ontological simplicity. Although stressing the simplicity of principles, Leibniz thinks that the best of all possible worlds to be the largest, the one that actualizes all possible entities. Even Spinoza – famous for his monism – takes God to possess an infinite number of attributes. Leibniz violates quantitative parsimony, while Spinoza respects quantitative parsimony but violates qualitative parsimony (there is one thing, but infinitely many types of things).

desire to explain phenomena by means of the fewest possible causes points towards qualitative parsimony. If we causally account for phenomena in terms of fewer types of entities, and refrain from postulating entities beyond those required by our causal principles, then our theories will also be qualitatively parsimonious.

That said, trying to subsume Hume’s view under contemporary categories can be unhelpful, and I think that this is one such instance. Hume’s account of theoretical simplicity is intuitive and easily understood in its own right: causally explain as many phenomena as possible by means of the fewest causes. It does not require a great deal of illumination from more contemporary frameworks, and indeed might be obscured by them. Whether to classify Hume’s view as a syntactical conception of simplicity or as Lewisian qualitative parsimony is somewhat beside the point.

When understood in this way, we can see that Hume identifies such a notion of simplicity as explicitly guiding his philosophical reasoning. Consider his ‘Rules by Which to Judge of Causes and Effects’ (THN 1.3.15), which Hume describes as “all the Logic I think proper to employ in my reasoning” (THN 1.3.15.11). His fourth rule – which is “the source of most of our philosophical reasoning” – states that “the same cause always produces the same effect, and the same effect never arises but from the same cause” (THN 1.3.15.6). This rule prohibits the wanton proliferation of causes, and thus embraces the theoretical virtue of simplicity.<sup>10</sup> Meanwhile, the fifth rule states that “where several different objects produce the same effect, it must be by means of some quality, which we discover to be common amongst them” (THN 1.3.15.7). We might be tempted to attribute different causes to the same effect when they are produced by different objects. However, Hume urges us to rather look for a common cause, a shared quality between

10. There is much that can be discussed here. Notably, since no two causes will be exactly alike, the question of sameness will boil down to resemblance, which admits of degrees. Hume himself recognizes that the rules by which to judge causes and effects “are very easy in their invention, but extremely difficult in their application” (THN 1.3.15.11).

the different objects. This minimizes the number of unique causes we have to postulate.

Hume's rules for reasoning and their emphasis on theoretical simplicity likely come from Newton. Schliesser (2007), Demeter (2012, 589), and De Pierris (2015, 195) point out that Hume's rules echo Newton's 'Rules for the Study of Natural Philosophy' in the second and third editions of the *Principia*. Notable is Newton's first principle at the beginning of Book 3: "No more causes of natural things should be admitted than are both true and sufficient to explain their phenomena" (794).<sup>11</sup> Newton explains: "For nature is simple and does not indulge in the luxury of superfluous causes" (794). Newton's explanation for his third rule also emphasizes the simplicity of nature: "... nor should we depart from the analogy of nature, since nature is always simple and ever consonant with itself" (795). Importantly, Newton's conception of simplicity seems to closely resemble Hume's. As with Hume, it centers around causal explanation: Newton looks to explain natural phenomena by means of as few causes as possible. In light of Hume's well-known admiration for Newton, the resemblance between their accounts of theoretical simplicity strongly suggests that Newton played a meaningful role in shaping Hume's thought on the matter.<sup>12</sup>

### 3. Why Is Simplicity a Theoretical Virtue?

Why ought we to prefer simple theories to more complex ones? The most straightforward answer is an epistemic one: *ceteris paribus*, simpler theories tend to be true. Indeed, Hume often cites this explanation

11. The translations and transcriptions of Newton's work are sourced from the Newton Project unless stated otherwise <<http://www.newtonproject.ox.ac.uk/>> (Accessed 13 October 2020). Passages from the *Principia* are from the 1999 University of California Press edition, translated by Cohen, Whitman, and Budenz; page numbers refer to this edition.
12. My focus is on Hume's account of simplicity. I will therefore not engage in a detailed investigation of Newton's broader influence on him. See however Schliesser (2007), Hazony (2014), Hazony & Schliesser (2016), and Demeter (2016).

for the value of theoretical simplicity. He associates simplicity with truth and complexity with falsity:

Such a subtlety is a clear proof of the falshood, as the contrary simplicity of the truth, of any system. (THN 1.3.16.3)

To invent without scruple a new principle to every new phaenomenon, instead of adapting it to the old; to overload our hypotheses with a variety of this kind; are certain proofs, that none of these principles is the just one, and that we only desire, by a number of falshoods, to cover our ignorance of the truth. (THN 2.1.3.7)

Hume also appeals to the simplicity of his own theories as evidence of their truth:

My hypothesis is so simple, and supposes so little reflection and judgment, that 'tis applicable to every sensible creature; which must not only be allow'd to be a convincing proof of its veracity, but, I am confident, will be found an objection to every other system. (THN 2.1.12.9)

These passages demonstrate that Hume thinks of simplicity as truth-tracking (Qu, 2016, 299).

But, what is Hume's basis for this belief? Why should simple theories be true? Schliesser (2010, 223) is wary in this regard: "I would be cautious in ascribing to Hume a general principle that allows inference of simplicity to truth when speaking of matters of fact". Here, it is useful to briefly contrast Hume with other thinkers in his intellectual environment who likewise tie theoretical simplicity to truth. Unlike Hume, they offer an explicit rationale for doing so. Hume's contemporaries tend to appeal to God to substantiate the epistemic value of theoretical simplicity. God acts in simple ways, and therefore creates simple laws; it follows that simpler theories are more likely to be true than complex ones.

Consider Newton. In an unpublished and untitled treatise on the book of Revelation, Newton sets out some “Rules for interpreting and methodising the Apocalypse”, which make clear that the value of theoretical simplicity is founded in God, as Schliesser (2016) and Sober (2016) point out. Newton writes:

Truth is ever to be found in simplicity, and not in the multiplicity and confusion of things ... It is the perfection of God’s works that they are all done with the greatest simplicity. He is the God of order and not of confusion. (*Untitled Treatise on Revelation*, Section 1.1)

Although Newton is discussing theological rules of reasoning, they can be considered parallel to his rules for natural philosophy in the *Principia* (discussed above).<sup>13</sup> His remarks appear extendable to the scientific realm. Because nature is God’s work, it must be “done with the greatest simplicity”; thus, “truth is ever to be found in simplicity” when it comes to scientific theories about nature.

Likewise, Leibniz’s *Discourse on Metaphysics* finds simplicity in God. We should favor simpler theories because God imposes the simplest laws that generate the richest phenomena: “... God chose the way that is most perfect, that is to say that which is simultaneously simplest in theories and the richest in phenomena ...” (*Discourse on Metaphysics*, 6).<sup>14</sup> God and theoretical simplicity likewise form the cornerstone of Nicolas Malebranche’s theodicy. He claims that God “always acts in the simplest ways” (*Treatise of Nature and Grace*, 118),<sup>15</sup> and

God, whose wisdom has no limits, must then make use of means which are very simple and very fruitful in the formation of the future world, as in the preservation of the

13. Delgado-Moreira (2006, 226) cautions against reading too deeply into such parallels, however.

14. The translation is from the 1998 Oxford edition, translated and edited by Woolhouse and Francks.

15. Translations from the *Treatise of Nature and Grace* are from the 1992 Oxford edition, translated and edited by Riley.

present world. He ought not to multiply his wills, which are the executive laws of his plans, any further than necessity obliges. (*Treatise of Nature and Grace*, 127)

Malebranche also stresses the simplicity of God’s actions. Although God might have created a world with less evil than this one,<sup>16</sup> doing so would sacrifice the simplicity of the laws of nature: “But in order to make this more perfect world, it would have been necessary that [God] have changed the simplicity of his ways ...” (*Treatise of Nature and Grace*, 117).

Unlike Newton, Leibniz, and Malebranche, Hume does not appeal to God to secure the virtue of simplicity. Sometimes called “the great infidel”, it seems unlikely that Hume would find such move attractive. Philo removes God from the picture and suggests that nature might just be inherently and inexplicably ordered. Falling just short of actively endorsing this position, he writes:<sup>17</sup>

And were I obliged to defend any particular system of this nature (which I never willingly should do) I esteem none more plausible, than that which ascribes an eternal, inherent principle of order to the world; though attended with great and continual revolutions and alterations. (DNR 6.12)

An ordered world is, *ceteris paribus*, simpler than a disordered world, and so Philo is postulating that there is an inherent degree of simplicity in nature.

Does Hume have any other means of justifying the truth-conduciveness of theoretical simplicity? Other than pleading divine providence, an obvious option would be a meta-inductive justification: we have reason to think that simplicity tracks truth because simple theories have been more successful than complex theories in the past.<sup>18</sup> We

16. In this, he disagrees with Leibniz.

17. As mentioned earlier, Philo can generally be taken to speak for Hume.

18. Some such attempts in the contemporary literature can be found in McAllister

might read Hume's discussion of the Copernican system (introduction) as alluding to such a meta-inductive justification:

Here, therefore, moral philosophy is in the same condition as natural, with regard to astronomy before the time of *Copernicus*. The antients, tho' sensible of that maxim, *that nature does nothing in vain*, contriv'd such intricate systems of the heavens, as seem'd inconsistent with true philosophy, and gave place at last to something more simple and natural. To invent without scruple a new principle to every new phaenomenon, instead of adapting it to the old; to overload our hypotheses with a variety of this kind; are certain proofs, that none of these principles is the just one, and that we only desire, by a number of falsehoods, to cover our ignorance of the truth. (THN 2.1.3.7)

Here, Hume compares moral philosophy to pre-Copernican astronomy, which "contriv'd such intricate systems of the heavens" that covered "ignorance of the truth" by "a number of falsehoods". This would "give place at last to something more simple and natural"; that is, the Copernican system. This can be seen as suggesting the following line of argument. Pre-Copernican astronomy lacked simplicity, and correspondingly turned out false. Its successor—the Copernican system—displayed simplicity, and thereby more successfully delivered truths about the heavens. Specifically, it seems that the pre-Copernican systems can "give place at last" to the simpler Copernican system precisely because they are afflicted by "a number of falsehoods". This points to a track record of success for simple theories, and a track record of failure for convoluted theories.<sup>19</sup> For Hume, moral philosophy ought to embrace theoretical simplicity based on this track record.

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(1996) and Kuipers (2002).

19. In itself, this is an admittedly thin track record. Presumably, similar examples from various disciplines might be cited in support. The Copernican system is the most obvious, but not the only example.

Further evidence of such a justification can be found in Hume's rules by which to judge causes and effects. Recall that two of these rules express a commitment to theoretical simplicity, insofar as they instruct us to exercise parsimony regarding our postulated causes. Hume emphasizes that the one rule, which "is the source of most of our philosophical reasonings" is a "principle we derive from experience" (THN 1.3.15.6). The other rule "hangs upon" the first (THN 1.3.15.7), and would therefore also be derived from experience. Again, this points to a meta-inductive justification for the value of theoretical simplicity.

In addition to a meta-inductive justification, I believe that Hume offers a second justification for theoretical simplicity. He sees theoretical simplicity as carrying, not only epistemic, but also aesthetic value.<sup>20</sup> Besides being *extrinsically* valuable in service of truth, theoretical simplicity is also *intrinsically* valuable in virtue of its beauty. Consider the following passage from Hume's discussion of love and hatred:

Accordingly the difficulty, which I have at present in my eye, is no-wise contrary to my system; but only departs a little from that simplicity, which has been hitherto its principal force and beauty. (THN 2.2.6.2)

The details of the difficulty in question need not concern us here. The point is that Hume recognizes that simplicity carries aesthetic value. It confers beauty on his system (his account), and is even the primary source of it. Moreover, Hume takes this beautiful simplicity to be the "principal force" of his account and a reason to accept it.

We have seen that Hume praises the Copernican system for its simplicity, which he takes to be its key quality. The Sceptic in Hume's four essays on happiness states that this simplicity is beautiful:<sup>21</sup>

20. Manzo (2009) and Schliesser (2010, 222–223) distinguish between the beauty of a theory and its simplicity. I take Hume's view to be that theories are (at least partly) beautiful due to their simplicity.

21. The Sceptic is typically taken to speak for Hume. See Fogelin (1985, 119), Stewart (2009, 278), Heydt (2007, 17, ft.35), and Harris (2007). See also my Qu (2022a) for a discussion and some qualified disagreement. Nonetheless,

A man may know exactly all the circles and ellipses of the Copernican system, and all the irregular spirals of the Ptolomaic, without perceiving that the former is more beautiful than the latter. (EMPL 165)

Indeed, Hume takes simplicity to carry value in the aesthetic realm. Discussing Hume's aesthetic theory, Costelloe (2018, 167) points out that, for Hume, simplicity is crucial to aesthetic merit: "excessive ornamentation and artifice" will compromise the beauty of a work. Little surprise then that the same should hold for the simplicity of a theory.

Hume is not alone among his contemporaries in taking theoretical simplicity to carry aesthetic merit. Thomas Reid discusses the love of simplicity in aesthetic terms:

To love simplicity, and to be pleased with it wherever we find it, is not imperfection, but the contrary. It is the result of good taste. We cannot but be pleased to observe, that all the changes of motion produced by the collusion of bodies, hard, soft, or elastic, are reducible to three simple laws of motion, which the industry of Philosophers has discovered. (*Essays on the Intellectual Powers of Man*, 530)

Reid describes the love of simplicity as "good taste", and notes that it is natural to find pleasure in it.<sup>22</sup>

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regardless of whether or not the Sceptic generally speaks for Hume, her praise of the Copernican system sufficiently echoes Hume's own words.

22. Garrett (2015) does not think that there is much distance between Hume's epistemic and the aesthetic justifications of simplicity. Garrett claims that our judgments of probability of truth are founded on sentiment. They are felt, just as our aesthetic sentiments are felt. This suggests a parallel with Hume's theory of morality. Hume removes morality from the province of the divine and places it within our sentiments. So too with simplicity. Rather than take simplicity's value to be founded in God (as his contemporaries do), Hume finds it in our sentimental responses.

#### 4. Simplicity and Its Tradeoffs

Can a theory be too simple? According to Reid, one can take the love of simplicity too far, as Duncan (2009, 149–153) notes:

Men are often led into error by the love of simplicity, which disposes us to reduce things to a few principles, and to conceive a greater simplicity in nature than there really is. (*Essay on the Intellectual Powers of Man*, 530)

At times, Hume also expresses this sentiment. He raises the prospect of a theory going astray by means of its intemperate simplicity. This raises the question of how and why a theory might be too simple. Is more simplicity not always good? We will see that, while simplicity is indeed virtuous, it sometimes comes with epistemic and aesthetic tradeoffs. Consider EHU 1.15:

Moralists have hitherto been accustomed, when they considered the vast multitude and diversity of those actions that excite our approbation or dislike, to search for some common principle, on which this variety of sentiments might depend. And though they have sometimes carried the matter too far, by their passion for some one general principle; it must, however, be confessed, that they are excusable in expecting to find some general principles, into which all the vices and virtues were justly to be resolved. (EHU 1.15)

Here, Hume cautions that some might go overboard in their thirst for theoretical simplicity, specifically when it comes to resolving the variety of human sentiments into a singular principle. He considers this tendency to be "excusable", but recognizes that moralists "have sometimes carried the matter too far". This is not merely a theoretical pitfall, but also an actual one.

The Sceptic goes further, opening her monologue by sternly criticizing philosophers for their excessive harking for simplicity:



There is one mistake, to which [philosophers] seem liable, almost without exception; they confine too much their principles, and make no account of that vast variety, which nature has so much affected in all her operations. When a philosopher has once laid hold of a favourite principle, which perhaps accounts for many natural effects, he extends the same principle over the whole creation, and reduces to it every phænomenon, though by the most violent and absurd reasoning. (EMPL 159–160)

The Sceptic goes on to state that this “infirmity” particularly afflicts philosophers when it comes to “reasonings concerning human life, and the methods of attaining happiness” (echoing Hume’s words in EHU 1.15). The Sceptic’s tone is harsher than Hume’s, but both agree that there is a point where simplicity becomes problematic.<sup>23</sup>

In Appendix 2 of the moral *Enquiry*, Hume spells out an example of such a problematic theory: the thesis that human morality can be reduced to self-interest, which he calls the “selfish hypothesis” (EPM App 2.6). As Duncan (2009, 143) points out, Hume quickly dismisses the more extreme version of this theory (associated with Mandeville), which states that morality is the product of consciously affected “disguises” or deceptions that serve to hide our self-interest (EPM App 1). An alternative version (associated with Hobbes) maintains that, unbeknownst to us, our outward moral motives reduce to the motive of self-interest. Hume denounces such a view precisely because of its inordinate degree of simplicity. And, he considers this to be an error in philosophy more broadly: “All attempts of this kind have hitherto proved fruitless, and seem to have proceeded entirely, from that love

23. Duncan (2009, 146) thinks that EHU 1.15 and EMPL 159–160 express a worry about overgeneralization rather than oversimplification. He does though concede that “the precise line between these two causes of error is hard to make out” (149). On the account of simplicity I am offering, these passages concern simplicity insofar as they involve explaining a broad variety of phenomena (i.e. the range of human happiness) in terms of a small number of causes.

of simplicity, which has been the source of much false reasoning in philosophy” (EPM App 2.6).

That said, Hume’s writings on this matter can be somewhat puzzling, and are worth discussing further. As Duncan (2009, 144) and Morett (Forthcoming-a; Forthcoming-b) note, Hume criticizes this same hypothesis for its *lack* of simplicity in the very next passage. Unlike in physics, where less obvious causal explanations are often correct, in moral philosophy, the

simplest and most obvious cause, which can there be assigned for any phænomenon, is probably the true one. When a philosopher, in the explication of his system, is obliged to have recourse to some very intricate and refined reflections, and to suppose them essential to the production of any passion or emotion, we have reason to be extremely on our guard against so fallacious a hypothesis. (EPM App 2.7)

Hume goes on to argue that a theory that allows for benevolence *and* self-interest (such as his own) “has really more *simplicity* in it” (EPM App 2.12).

How can the selfish hypothesis be both too simple and not simple enough? As Duncan (2009, 145) recognises, there must be two senses of simplicity in play: the selfish hypothesis is excessively simple in one sense, and insufficiently simple in another. Indeed, I will argue that the selfish hypothesis is excessively simple in the first sense *precisely because* this compels its lack of simplicity in the second sense. The sense of simplicity explored in this paper (which I have called ‘theoretical simplicity’) is the explanation of phenomena by means of as few causes as possible. Yet, there is another sense of simplicity (we call it ‘explanatory simplicity’) that concerns the simplicity and obviousness of a given assigned cause. Tradeoffs can arise between these two forms of simplicity, which is why a theory can be *too* theoretically simple.

In what sense is the selfish hypothesis too simple? The answer seems straightforward. The selfish hypothesis assigns a singular

cause — self-interest — to the range of human motivations. Compared to a theory involving benevolence, the selfish hypothesis is theoretically simpler in the sense that Hume praises. It accounts for a wide variety of phenomena (human motivations) by means of a single cause (self-interest), and thus offers a simplicity of causal principles. It then seems that we have a puzzle. Hume thinks that theoretical simplicity in this sense is a virtue, yet he criticizes an excess of it in the first *Enquiry*, the second *Enquiry*, and as ‘the sceptic’. Why and when is theoretical simplicity excessive?

To shed light on this question, let us continue with our examination of the second sense of simplicity. Hume mentions this second sense less frequently than the first sense. As we have seen, the majority of Hume’s discussions of simplicity concern the first sense. How and why does Hume take the selfish hypothesis to be ‘intricate’ and therefore lacking simplicity (EPM App 2.7)? Hume believes that the form of simplicity the selfish hypothesis lacks is valuable in moral philosophy *but not physics*. He says that the “case is not the same in this species of philosophy as in physics” because less obvious causal explanations often turn out to be true in the latter domain (*ibid.*).<sup>24</sup> So, the second form of simplicity is clearly distinct from the theoretical simplicity discussed earlier.

What then is this second sense of simplicity? Consider again Hume’s mention of “the simplest and most obvious cause” (EPM App 2.7). While theoretical simplicity concerns the number of general causes assigned to explain phenomena, the second sense of simplicity concerns the simplicity of *causal explanation*: how simple and obvious is a given assigned cause? Call this notion of simplicity ‘explanatory simplicity’. Theoretical simplicity is general, while explanatory simplicity is particular. This distinction is best illustrated by analogy. Consider bread-and-butter act utilitarianism. In one sense, act utilitarianism

24. Note that this appears to be an inductive justification for the second sense of simplicity in moral philosophy: we should endorse the second form of simplicity in moral philosophy because such explanations have tended to be true in the moral domain but not in physics.

is a very simple theory: it offers a single unified explanation for the morality of an act (i.e. how much utility it produces). But, aspects of act utilitarianism can also become quite complex. Consider how an act utilitarian might account for justice; such an account would surely be rather intricate. Indeed, it will be intricate precisely because of the theoretical simplicity of act utilitarianism. Because there is such a thin explanatory basis for the rightness and wrongness of actions — *viz.* utility — particular explanations have to do that much more work to account for the variety of pertinent phenomena. Utilitarianism is theoretically simple, but some of its theses are explanatorily complex because of its theoretical simplicity.

Hume sees the selfish hypothesis in a similar light. The selfish hypothesis is theoretically simple: it assigns a single cause — self-interest — to a range of human behavior. But, because of this theoretical simplicity, it is forced into artificial and contrived explanations of recalcitrant cases. Such cases include: “a man, that grieves for a valuable friend, who needed his patronage and protection” (EPM App 2.7) or a “mother ... who loses her health by assiduous attendance on her sick child, and afterwards languishes and dies of grief” (EPM App 2.9). This is how and why Hume can criticize the selfish hypothesis on the basis of its excessive simplicity *and* its intricacy. The latter is a consequence of the former.<sup>25</sup> Here, there is a tradeoff between theoretical simplicity and explanatory simplicity. Both are broadly truth-tracking in moral philosophy, but the selfish hypothesis strikes a losing bargain when it assigns too much value to the former.

We might frame the problem with the selfish hypothesis in a slightly different manner. Recall that the rationale behind theoretical simplicity is that the search for ever more general causal explanations will

25. Duncan (2009, 145) argues that the selfish hypothesis is too complex because it attributes motives or mental states that are too complex. I do not disagree, but I favor a more general analysis. The problem is not so much that the selfish hypothesis attributes thoughts that are too complex. Rather, it is that the selfish hypothesis forces intricate and gerrymandered causal explanations for problematic phenomena (which take the form of overly complex thoughts in this particular case).

result in a reduction of cause-types. By searching for what is common among multiple causal explanations, we can derive higher-level causal principles that are more general and fewer in number. The problem with the selfish hypothesis is that it pursues theoretical simplicity to the point of losing sight of this underlying rationale. Having found that self-interest explains a narrow range of phenomena, the selfish hypothesis generalizes to all instances of motivation, even cases where self-interest is not a plausible causal explanation. This generalization fails to search for, or even properly consider, the unity between causal explanations (metaphorically, it is more of a hostile takeover than a merger).

Hume's method in the second *Enquiry* is very different. He surveys the range of human moral assessments in an empirically informed way and carefully considers the common threads between different causal explanations. Where such common threads are not found, Hume refrains from venturing beyond the evidence.<sup>26</sup> In doing so, he comes to a less general thesis, but one that respects the differences between causal explanations: a small tincture of benevolence leads people to generally approve of character traits that are either useful or agreeable to the self or to others. Hume concludes that his own theory, which allows of a disinterested benevolence, distinct from self-love, has really more *simplicity* in it, and is more conformable to the analogy of nature, than that which pretends to resolve all friendship and humanity into this latter principle. (EPM App 2.12)<sup>27</sup>

To sum up, in the domain of moral philosophy, we should prefer theories with simpler causal principles. That is, unless they result in overly complex explanations, given that such explanations tend to be false. While it is true that theoretical simplicity is valuable, there are tradeoffs requiring that we limit the theoretical simplicity of our

theories. This does not pretend to offer hard and fast rules for exactly how much theoretical simplicity one should aim for. But, it does help to illuminate the considerations bearing on this issue.

Just as there are epistemic tradeoffs involved, there are also aesthetic tradeoffs when it comes to theoretical simplicity. While there is an undeniably pleasing quality to a simple theory, when considered aesthetically, a theory can be *too* simple. We can then see why some theories might be too simple for Hume's taste. Simplicity is beautiful up to a point. Just as an overly simple poem or painting might strike one as more prosaic than beautiful, so too with an overly simple theory. Indeed, Hume discusses this aesthetic 'balancing act' in writing. Although what he says in this regard applies to aesthetic appreciation of writing rather than theory, we might look to understand his views on the latter in the light of what he says about the former.

At the start of 'Of the Standard of Taste', Hume offers a relatively black-and-white view on the matter. He asserts that "[e]very voice is united in applauding elegance, propriety, simplicity, spirit in writing; and in blaming fustian, affectation, coldness, and a false brilliancy" (EMPL 227). He goes on to demonstrate a more nuanced view, however. When concluding the essay, he recognizes some "preferences" that are "innocent and unavoidable", notable among these the preference between "simplicity" and "ornament" (EMPL 244).

More detail on this matter can be discerned from Hume's essay 'Of Simplicity and Refinement in Writing'. Hume states that "[s]entiments, which are merely natural, affect not the mind with any pleasure, and seem not worthy of our attention" (EMPL 191). Thus, one who goes too far in sacrificing complexity will "in vain boast his nature and simplicity"; his writing "never will be agreeable" (EMPL 192). Such authors "are never blamed or censured" (EMPL 192), but simply ignored. In short, the simplicity of a work comes at the expense of a capacity for evoking the pleasure and attention of the reader. "Excessive refinements" in writing are also problematic, and our enjoyment of such works will be compromised because we will miss "the whole by its minute attention to the parts". As Hume says, "too much ornament is

26. See my Qu (2016) for more on Hume's methodology in the second *Enquiry*.

27. Thanks to an anonymous referee for a helpful discussion on this matter. Millican (2020, Section 6) provides an informative discussion of Hume's rejection of the selfish hypothesis in EPM App 4. Millican argues that it signals a change from the egoist foundations of the *Treatise*.

a fault in every production" (EMPL 192); there is a "just mixture of simplicity and refinement in writing" (EMPL 193). A consideration of the aesthetic value of a theory will point towards a careful balance between simplicity and complexity. Simplicity in writing has aesthetic value, but this can be outweighed by the capacity of a work to captivate and please the reader.

Similar considerations might apply to theories. A system that is too theoretically complex will fail to be beautiful. However, a system that is *too* theoretically simple might also suffer aesthetically. Being devoid of any complexity with which to evoke pleasure and attention, such theories will lack agreeableness. Like the most basic arithmetical laws, such theories are unlikely to stir much of a response.

Where exactly does this aesthetic balance lie? Hume gives no hard and fast rules, and indeed considers such a delineation impossible. Firstly, he says that "*this medium lies not in a point, but admits of a considerable latitude*" (EMPL 193). Second, he observes that

it is very difficult, if not impossible, to explain by words, where the just medium lies between the excesses of simplicity and refinement, or to give any rule by which we can know precisely the bounds between the fault and the beauty. (EMPL 194)

In short, there is an acceptable range between simplicity and complexity, which is impossible to identify precisely. We must use our aesthetic judgment to discern this balance, both in writing and philosophizing.

Hume also raises a third observation that applies to art rather than science. He says that "excess of refinement ... is both less beautiful, and more dangerous" than that of simplicity (EMPL 194). This is because complexity stirs "wit" while simplicity stirs "passion", and the two are "incompatible" (EMPL 195). But, Hume explicitly states that this only applies to writings that seek to stir the passions: "For this reason, a greater degree of simplicity is required in all compositions, where men, and actions, and passions are painted, than in such as consist of reflections and observations" (EMPL 195). In writing that consists of

"reflections and observations", a greater degree of eloquence, wit, and general prose-based complexity is licensed (EMPL 195).

When this consideration is applied to theoretical simplicity, it delivers an interesting result. At the start of the first *Enquiry*, Hume distinguishes between easy and abstruse philosophy. Easy philosophy aims primarily at stirring our passions and evoking virtue. Hume thinks that easy philosophers

paint [virtue] in the most amiable colours; borrowing all helps from poetry and eloquence, and treating their subject in an easy and obvious manner, and such as is best fitted to please the imagination, and engage the affections ... They make us *feel* the difference between vice and virtue; they excite and regulate our sentiments; and so they can but bend our hearts to the love of probity and true honour. (EHU 1.1)

In contrast, abstruse philosophy aims to stir the intellect rather than the passions. Abstruse philosophers "consider man in the light of a reasonable rather than an active being, and endeavour to form his understanding more than cultivate his manners" (EHU 1.2). Thus, from an aesthetic standpoint, a greater degree of theoretical complexity is licensed in abstruse philosophy than in easy philosophy. Too much theoretical complexity in easy philosophy would result in the aforementioned tension between the intellect and the passions, which would undermine its primary function. Since abstruse philosophy has more intellectual aims, there is more leeway for theoretical complexity. Theoretical simplicity is a virtue in both easy and abstruse philosophy, but considered aesthetically, it has more priority in the former than the latter.

In light of the above insight (and venturing into more speculative territory), we might more closely examine the relationship between

Book 1 of the *Treatise* and the first *Enquiry*.<sup>28</sup> The first *Enquiry* is clearly a simpler work than the *Treatise*. As Hume himself recognizes,

I believe the philosophical Essays [the first *Enquiry*] contain every thing of Consequence relating to the Understanding, which you would meet with in the *Treatise*; & I give you my Advice against reading the latter. By shortening & simplifying the Questions, I really render them much more complete. *Addo dum minuo*. (HL i.158)

The *Treatise* would certainly count as a work firmly rooted in the abstruse tradition. By contrast, in the first *Enquiry*, Hume characterizes his project as a union of easy and abstruse philosophy: “Happy, if we can unite the boundaries of the different species of philosophy, by reconciling profound enquiry with clearness, and truth with novelty!” (EHU 1.17). Put together, this suggests a hypothesis. Hume’s might have simplified his thought in the first *Enquiry* precisely because, unlike the *Treatise*, it is meant to partially embody the easy style of philosophizing. This style of philosophy puts a greater degree of emphasis on theoretical simplicity because complexity would undercut one of its key function of engaging the passions of its readers.<sup>29</sup>

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28. See Qu (2020) for a detailed treatment of this topic.
29. For very helpful comments, thanks are owed to Graham Clay, an audience at the 26th Oxford Hume Forum, and a reading group at the National University of Singapore, as well as two anonymous referees for this journal.
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