★ BRIEFS ★

Complex Ideas: Fodor's Hume Revisited

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To Jerry Fodor (1935–2017), *in memoriam*

1.   Introduction

In 2003, Jerry Fodor published *Hume Variations* (*HV*), a book sitting astride *The Mind Doesn't Work That Way* (Fodor 2000) and *LOT 2* (Fodor 2008). Sadly, we now know that the latter would end up being Fodor's last solo effort to defend the Representational/Computational Theory of Mind (RCTM) in book format. Thereafter two collaborative endeavors ensued, the widely vituperated *What Darwin Got Wrong* (Fodor & Piattelli-Palmarini 2010) and the sketchy *Minds Without Meanings* (Fodor & Pylyshyn 2015). The former could easily be connected with Fodor (2000) as striking the, in our opinion, definitive blow on evolutionary psychology, while the latter elaborated on Fodor's (2008) referentialist account of the content of intentional states, hinting, also in our opinion, at the basis of what might eventually constitute a solution for this hard problem—we held our breaths awaiting the next season, only to recently know that it would not be shot. This apparently leaves *HV* in a kind of no man's land and seemingly makes of it a relatively minor work not worth the attention of the casual follower of the happenings in the philosophy of mind—a text for wholehearted fans only.[1] However, when read as part of a trilogy that opens with Fodor (2000) and culminates with *LOT 2*, *HV* acquires a full sense of its own as the necessary link between the computational model of the former and the theory of ideas developed in the latter. Especially, we believe, when Fodor's Hume is reassessed under the reading we propose here.

In *HV*, Fodor got it right when he asserted that the etiology of complex ideas is the crux of Hume's psychology; but he didn't get it completely right, for Hume's etiological suggestions are more complex and nuanced than they surface in Fodor's portrait. The first section of this note is aimed at explaining why we believe so. Thereafter, we move to the question of what, according to Fodor, Hume got inexcusably wrong. Again, while we would like to suggest that Fodor got this partially right, we nonetheless believe that Hume's contentions are not as inexcusably wrong as Fodor argued them to be, even from the point of view of a

[1]   To wit, we were able to localize only six reviews of the book (Crane 2004, Garvey 2004, Biro 2005, Carruthers 2005, Sarnecki 2005, and Schmidt 2007), while a quick search on Google for *LOT 2*, for example, immediately suggests more than ten hits.

Cartesian-biased RTCM. Notwithstanding, the conclusion of this contribution is to a great extent in agreement with Fodor's vindication of Hume: Much against conventional wisdom, Hume attained a rather balanced compromise between the constraints imposed by the Cartesian theory of ideas and the rigors of empiricism, which he felt compelled to embrace in order to attain a bona fide scientific view on human nature.

2.   Hume on the Etiology of Complex Ideas: What Fodor Got Wrong (or Did He?)

How Hume taxonomized 'perception' into 'impressions' and 'ideas' is a story that has been told many times, obviously enough starting with Hume himself (*Treatise*, § 1.1;[2] see, among others, Stroud 1977: Ch. 2, Pears 1990: Part I, and Garrett 2011). This section is specifically devoted to introducing Fodor's *HV* version of that story and confronting it with our own construal of Hume's relevant passages of the *Treatise*—for those readers wishing to refer to different reviews of Fodor's book for a more all-encompassing set of commentaries, we recommend those of Crane (2004), Garvey (2004), Biro (2005), and Carruthers (2005). Turning then to the case that concerns us here, Hume famously set apart, on the one hand, 'impressions' from 'ideas' as the two main denizens of our perceptual life—which measured against each other by their relative 'force' and 'violence' (Govier 1972, Everson 1988, Dauer 1999, Bennet 2001: 204–206)—and, cutting across both categories, 'simple' from 'complex' impressions/ideas—a matter in this case of internal 'distinctiveness' and 'separability' (Stroud 1977: Ch. 2, Bennet 2001: 209–211, Owen 2009).

As for the former distinction, Hume observed that mental moods exist in which it becomes blurred—like fever, sleep, and so on, but that it is unproblematic in most common situations. He also famously introduced at the beginning of the *Treatise* that there exists a causal arrow pointing from 'impressions' to 'ideas' (*Treatise*, p. 9), so for him it generally rules that:[3]

> all ideas are deriv'd from impressions, and are nothing but copies or representations of them […] Impressions and ideas differ only in their strength and vivacity.   (*Treatise*, p. 18)

To this he added that, as a consequence, the distinction is not subservient to "any particular degree of vivacity", as well as the corollary (to be discussed below) that "whatever is true of the one must be acknowledg'd concerning the other" (*Treatise*, p. 18).

As for the latter distinction, Hume introduced it as a clear-cut, uncomplicated one, which has to do with the internal decomposability (or lack thereof) of

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[2]   We will quote from the following edition: *A Treatise of Human Nature*, vol. 1, ed. David Fate Norton & Mary J. Norton. Oxford: Clarendon Press, 2007. As for references to Fodor, unless otherwise stated, all are to *HV* with page numbers appearing within parentheses.

[3]   As it is well known, in Hume's model ideas feedback to generate new ('of reflection' or 'secondary') impressions (*Treatise*, p. 11). Details are not important to the concerns of this paper and, as Fodor did in his book, we shall omit the mechanism here.

impressions / ideas. The distinction holds the same in the case of both kinds of percepts, which actually follows from the corollary above: Namely, if an impression decomposes into minor impressions, the same property must apply to the corresponding idea—i.e. it must decompose into minor ideas; and obviously enough, simple corresponding impressions and ideas must be equally isomorphous in not being internally decomposable.

But Hume also acknowledged that 'complex ideas' raise a non-trivial challenge to this whole edifice, for

> tho' there is in general a great resemblance betwixt our *complex* impressions and ideas, yet the rule is not universally true, that they are exact copies of each other.   (*Treatise*, p. 8; emphasis in original)

Clearly enough, winged horses, fiery dragons, and monstrous giants, are not copies of anything that directly impresses us, in the way ordinary horses, common alligators or basketball players do. Therefore, two different mental mechanisms appear to be at work in the completion of complex ideas, even if both ultimately anchored in the solid ground of impressions. Fodor referred to the corresponding mechanisms as 'copy' (also Bennet 2011: 209ff.) and 'imagination',[4] which superimpose to the 'simple / complex' distinction as depicted in Figure 1:
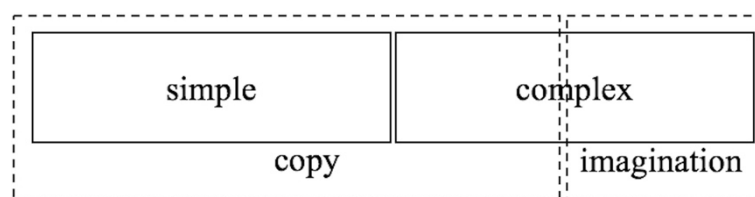

Figure 1: Hume's fabric of ideas (Fodor's version).

According to this reading, 'copy' may apply to create both simple and complex ideas—or 'copies', the difference being that in the former case the mechanism just coins the corresponding idea from a single, non-decomposable impression, while in the latter case it copies a certain number of minor, non-decomposable impressions, plus the 'joints' that keep them apart and, at the

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4   A note of terminological clarification is in order. Fodor differentiated between 'copy' and 'imagination', understanding the former as the faculty whereby (simple and complex) impressions become (simple and complex) ideas/concepts, and the latter as the faculty that assembles simple ideas/concepts to generate complex ideas/concepts (Fodor 2003, pp. 29–30). But Hume actually opposed 'imagination' to 'memory'—not to 'copy', as the outcome and onset, respectively, of the process whereby impressions progressively faint into ideas (*Treatise*, § 1.1.3): That is, impressions are first (strongly) remembered and then (weakly) imagined. In any event, composing 'unrealistic' ideas (winged horses, fiery dragons, and monstrous giants; *Treatise*, p. 12) entails pure imaginative efforts, so Fodor's confusion is innocuous, at least for his own and this section's purposes. Things will become different in the next section. From this point on, we will follow Fodor's convention of representing ideas/ concepts with small caps. For an overall treatment of Hume's 'memory/imagination' distinction, see Wilbanks (1968: Ch. 2), Pears (1990: Ch. 3), Bennet (2001: 207–209), and Traiger (2011).

same time, makes a coherent whole of them. Besides, simple ideas, according to Hume's strong empiricist commitment, are exhaustively copies of impressions (*Treatise*, p. 8); but the same needs not be the case of complex ideas, for many of them are the product of 'imagination'—see fn.3, a faculty capable of joining ideas—themselves copies, without however copying their joints from impressions. Thus, from the projection of the dual (copy/imagination) mechanism onto the originally dual (simple/complex) taxonomy, it results a triple taxonomy of ideas: namely, (1) 'simple copies', (2) 'complex copies', and (3) 'complex images' —a set of labels for which only us must be blamed.[5]

One of the main points of Fodor's critique—and the one to be discussed here, is that Hume was wrong in believing that complex impressions contain joints directly reflecting sensed experiences—for experiences lack them to start with, which could be directly copied and translated into ideas. This was one of Hume's main empiricist sins, according to Fodor's reading. But also according to him, Hume's was nevertheless a rightly focused mentalist project that embraced two fundamental Cartesian stances, upon which successful modern RCTMs build: namely, (i) the concept of the mental as the site of a multilevel architecture of self-contained ideational systems (representationalism) and (ii) the idea of representations as the outset and outcome of mind-internal symbol manipulation processes (computationalism)—see Biro (2004). Hume's implementation of these theses—according to Fodor's exegesis—is captured in Figure 2.
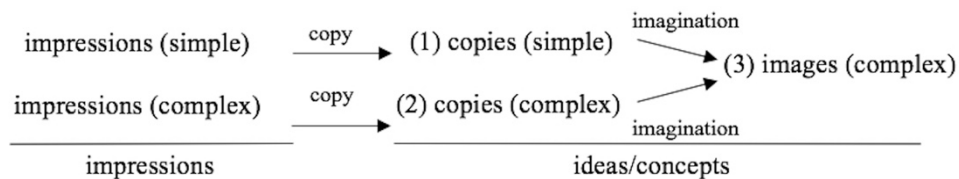

Figure 2: Hume's representational/computational theory of mind (Fodor's version).

Let us concentrate on the particular case of complex ideas/concepts—copies and images; (2) and (3) in the figure, which for obvious reasons are crucial for evaluating Hume's commitment with (a version of) the RCTM and, complementarily, the extent to which his empiricism was as radical as customarily assumed. In brief, our conclusion is that Fodor's image of Hume's RCTM is not completely accurate, but in a somehow unexpected direction: Despite the fact that there clearly exists an obvious lack of balance between the Baconian and Cartesian components of Hume's recipe for a future science of human nature, there are reasons to conclude that the weight of the latter relatively to the former was even heavier than Fodor believed it to be. Here follows our reasoning.

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[5]   Note particularly that we use 'images' as a shortcut for the outcomes of 'imagination', in Fodor's sense. While we agree that the denomination may be misleading, considering previous uses of the term 'imagistic' as broadly applying to all kinds of ideas/concepts (see, for example, Garrett 2011: 50), yet we believe that in the specific context of Figure 2 above and Figure 3 below, the specialized use suggested here—on a par with 'copy/copies', or 'edit/edits', is clear and acceptable. These kinds of 'faculty/ideas' doublings are certainly typical of Hume (Traiger 2011: 59).

As already observed, Hume singled out two separate mechanisms in charge of bringing about the generation of complex copies (2) and images (3). In the case of images, as Fodor correctly observed, he appealed to the generative resources of 'imagination', a faculty capable of putting together independently remembered simple and complex copies, and adding new kinds of joints uniting them. Fodor's preferred example is UNICORN, but Hume's main illustration is much more complex than that: the idea corresponding to the city of New Jerusalem—NEW JERUSALEM, a biblical image for the reconstruction of the soul, in the (imagined) physical instantiation of which "pavement is gold" and "walls are rubies" (*Treatise*, p. 8). That Hume's complex examples are as a matter of fact more complex than Fodor's is not a negligible detail, as we shall presently show. So let's keep this in mind. As for copies, according to Fodor's construal complex ideas spring in its turn from the non-generative mechanism of 'copy', which just replicates the corresponding impressions, creating relatively less forceful and less violent reflexes therefrom. We think that here Fodor erred in his exegesis, though, as an examination of Hume's main example clearly demonstrates.

Hume specifically concentrates on the idea corresponding to the city of Paris—PARIS; or more accurately, the idea that Hume himself constructed after visiting Paris during his pre-*Treatise* stay in France. The importance of the fragment has been previously emphasized—for example, by Stroud (1977: 20) and Traiger (2011: 59), but without deriving all the far-reaching consequences that in our opinion it might inspire. PARIS, according to Hume, is not simply a faint version of the impressions left by the Paris he visited: It is, granted, a faint version of many such impressions… *less* many other such impressions that he also received from 1734 to 1737. In Hume's own account:

> I have seen Paris, but shall I affirm I can form such an idea of the city, as will perfectly represent all its streets and houses in her real and just pro-portions? (*Treatise*, p. 8)[6]

So, complex copies derive from processes that involve, surely among others, such operations as 'subtracting' and 'resizing' impressions, a much more creative (generative) computational procedure than merely a 'copy' mechanism. It is worth remembering that in the *Enquiry*, Hume enumerated a series of facult-ies that underlie the seemingly unbounded liberty of thought, which include 'compounding, transposing, augmenting, or diminishing the materials afforded us by the senses and experience' (*Enquiry*: p. 14).[7] While the immediate context of the quote suggests that Hume is narrowly referring to the labors of our capacity

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[6]   It seems clear that Pears misreads this passage when he writes the following:

> You look down on Paris from a plane and get a complex impression of it: according to Hume, your singular idea of Paris is just a mechanical copy of this impression, and no selection or abstraction is needed before you can acquire it.   (Pears 1990: 27)

Hume's intended sense is nicely captured in the following passage from Stroud:

> I have had a breathtaking impression of Paris from the steps of Sacré Coeur, but I cannot now form an idea which exactly resembles that impression. So there are […] impressions without exactly resembling ideas. (Stroud 1977: 20)

[7]   We quote from the following edition: *An Enquiry Concerning Human Understanding*, ed. Tom L. Beauchamp. Oxford: Clarendon Press, 2000.

for fiction, a broader interpretation strikes us as legitimate when turning to his reflection in the *Treatise*, according to which such faculties are also recruited in the editing of complex realistic ideas with the distinctive seal of beliefs. Surely enough, the less complex an idea, the less operative the whole complex procedure; but by concentrating on these less complex, yet still intricate kinds of copies —like say, HORSE, COW, and so on, one misses the opportunity of capturing it in its full-fledged generative grandeur. Which certainly was Fodor's mistake, whose attention seems to be too much focused on such 'less complex' complex copies, corresponding to cows, unicorns, and similarly middle-sized, well-delimited entities. We thus disagree with Fodor's persuasion that Hume is fettered to the thesis that "the mind doesn't *add* anything to impressions in the course of getting from sensation to perception" (41, emphasis in the original); it actually, it adds *a lot* in the way to complex percepts.[8]

The moral is clear: Simple ideas are, within Hume's framework, systematically the result of a non-generative 'copy' procedure—which generates less forceful and violent versions of impressions—(1) in Figure 2; complex images are in turn the result of the generative powers of 'imagination'—which generates ideas with no external correlates via separate impressions—(3) in Figure 2; but an intermediate different category appears also to deserve recognition, corresponding to what according to Fodor are just complex copies—(2) in Figure 2, for complex ideas with external correlates via impressions are not just the product of 'copy'. Certain kinds of editing work, like 'subtraction' or 'resizing', are required by this class of ideas, a reason for which we suggest to name the procedure 'edit'—somehow reminiscent of Dennett's (1991) 'multiple drafts' model of consciousness—and which claim to be qualitatively different from just copying or imagining. If our conclusion is on the right track, Figure 2 above thus deserves to be amended along the following lines:
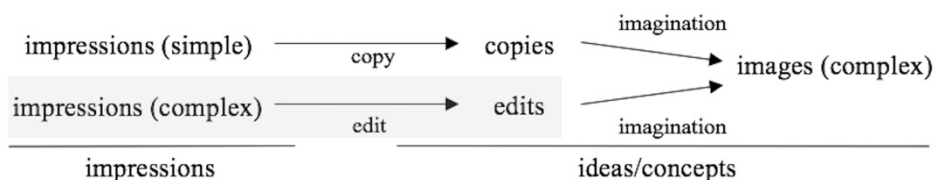

Figure 3: Hume's representational/computational theory of mind (revised version).

According to this interpretation, Hume's assertion above that "the rule is not universally true, that they [complex impressions/ideas] are exact copies of each other" (*Treatise*, p. 8) does not specifically apply to ideas/concepts resulting from the labors of imagination—that is, complex images, contrarily to what Fodor's interpretation entails. It also applies, and critically enough, to ideas/concepts resulting from the kinds of distortions representative of editing,

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8   Stroud (1977: 20), Pears (1990: 19), Owen (2009), and Morris & Brown (2014) have emphasized that the copy principle (*sensu stricto*) only applies to the relation between simple impressions and ideas, but curiously enough they do not deepen into the question of which principle/mechanism had Hume in mind as regards the relation between complex variants of both kinds of percepts.

not just to the kinds of recombination appropriate to imagination.[9]

Against this interpretation, the objection may be raised that it does not seem to be compatible with Hume's basic principle, according to which the relation between impressions and ideas is 'character preserving'—our own designation: That is, "whatever is true of the one [an impression] must be acknowledg'd concerning the other [the corresponding idea]" (*Treatise*, p. 18). At first glance, editing certainly appears to be so strong an operation as to be incompatible with such character preserving principle. But maybe not at a second glance. Note that character preservation is saved across a wide range of "strength and vivacity", for the impression/idea relation is not subservient to "any particular degree" thereof (*Treatise*, p. 18). The claim naturally applies to the fading out of simple impressions into simple ideas. But it seems clear that something needs to be added when one tries to extend it to complex impressions/ideas, for in that case attention must also be paid to the different kinds of relations that may bring together different perceptions to compound more complex ones.

Let's turn to PARIS and, for the sake of the argument, let's also simplify the case by supposing that such a complex idea comprises an increasing number of simple ideas united by the relation of 'contiguity'. As shown, it is Hume's contention that in the transition from the corresponding impressions, many perceptions are lost, and the ones that remain become differently ranked relatively to each other in terms of strength, vivacity, and maybe other qualities like size, contour, and so on. It sounds reasonable to conclude that in as much as it does not destroy the underlying principle (contiguity, in this case), the resulting ideas/concepts—in the same individual at different times, or in different individuals at the same or different times—still count as instantiations of the same idea, despite losses and reconfigurations; so 'character preserving' is preserved. A nice way of conceptualizing these kinds of 'resizing' operations has been suggested to us by an anonymous reviewer, based on Gallistel's (1989, 1990) theory of representation for non-human cognition, inspired on the measurement theory of Stevens (1946) and later work; see Gallistel (1989, 1990) for references. According to this theory, mental representations and external contingencies stand on an isomorphic relation, but one based on specific still to-be-measured psychological variables. Thus, representations may exhibit variable-constrainedly re-dimensioned outputs ('resizing'), yet respectful of a fully isomorphic ('character preserving') underlying grid.[10] What seems to be clear is that complex operations leading

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[9]   We are respecting Fodor's use of 'concept' as freely interchangeable with 'idea', for it is harmless regarding the subject matter of his and our enterprises. See, however, Pears (1990: 16–17), where the clarification is made that the latter must refer to bare mental 'data', while the former must do to the same data, but *qua* bearers of meaning.

[10]   One must take into account, however, that these kinds of theories of representation are inherently non-symbolic, as it is the case with others, also more or less explicitly based on the idea of isomorphism like Churchland's (1989) n-dimensional vector spaces or Cummins's (1996) isomorphic structures. These systems represent in virtue of their own internal structure and not necessarily, as argued by Cummins (1996), because of there being any causal relation between representation and represented. Therefore, at this point Fodor and Hume would also have parted company, since, as pointed out by another reviewer, Hume would perhaps have felt quite comfortable with the idea, while Fodor, being and

from environmental impressions to ideas operate differently, i.e. not by just copying—subject only to the loss of 'strength and vivacity', or imagining—the distinctive character of which is its indirect relation with environmental impressions and its intensive use of recombination.[11]

The conclusion that one can reach from the observations above regarding Fodor's interpretation of Hume is twofold. Firstly, Fodor failed to appreciate the computational richness of ideas/concepts directly derived from complex impressions: Granted, they carry the seal of environmentally induced impressions; yet they also purport the application of rich generative—as opposed to just imitative—procedures. But secondly, Fodor's error serves to stress that his main tenet is nevertheless on the right track: Hume's computationalism is a sophisticated stance, an attentive reading of which reveals that it sometimes even defeats his empiricist commitments, as it is clearly the case in the realm of complex 'realistic' ideas—that is, complex copies or, better, edits. The next section is devoted to explore the consequences of this unexpected conclusion.

3.   From Simple Impressions to Complex Concepts: What Hume Got Wrong (or Did He?)

Fodor put too much emphasis on how Hume dealt with representations not directly derived from experience (UNICORN, NEW JERUSALEM, and so on). He had good reasons for doing so, since according to his reading non-experienced representations must somehow be 'experienceable' in order not to destroy Hume's whole empiricist edifice. Hume guarantees this requirement, so Fodor's story goes, by granting that the ultimate constituents of complex representations fulfill the condition of being rooted in experience, plus positing what, from our contemporary perspective, might be characterized as a 'weak' compositional procedure—our own characterization, incapable of distorting such constituents in any relevant sense. Fodor is very clear in this respect, as witnessed by the following passage:

> Hume's psychological defense of empiricist epistemology consists of the claim that the content of *simple* concepts is empiricist (they just copy experiences), together with the assumption that compositional processes are semantically transparent (they add nothing to the content of simple concepts when they join them together into complex ones).
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> (95; emphasis in the original)

But according to Fodor, the second assumption is right away wrong, for when joined together, two simple concepts remain intact only in as much as they do not compose; if they compose, then new conceptual material inescapably arises. Thus the idea of LOVER, to offer an illustration of a reliably complex concept, when applied to the idea of an individual—say, JOHN, automatically

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externalist about content, wouldn't. The issue is quite relevant, but getting in full into it would take us too far afield.

[11]   Obviously enough, imagining may also exhibit the distinguishing signatures of editing, but indirectly, in as much as the former may feed with the outcomes of the latter.

implies the idea of another individual—say, MARY—as BEING LOVED, which is obviously not an experience-based idea itself. On this account, Fodor concludes that Hume, in order not to betray his empiricist commitment, appoints the task of composing complex representations to a computational apparatus that betrays the manner how a human mind actually composes them. In other words, Hume's greatest weakness was to put too much confidence on the powers of a weak compositional procedure.

As we have been suggesting in the previous section, things turn out not to be for Hume as neatly delineated as Fodor contended. Important consequences follow. The heart of the matter has to do with how Fodor, consistently through his monograph, emphasized as essential the link between the mind's higher representational powers and 'pure imaginative efforts' (see fn. 3), of the kind required to compose ideas like NEW JERUSALEM. Wrongly, we claim, for it seems clear from Hume's own statements that equally powerful procedures are also entailed by complex representations more directly anchored on experience—for example, PARIS—that, as argued above, happen not to be just copies. Therefore, at odds with Fodor's reading, 'imagination' is not the faculty of composing unrealistic ideas, but the faculty of composing *tout court*.[12]

Fodor writes, as capturing the gist of Hume's 'faculty of imagination', that it is the mental quality that grants that "there's no end to the things one can think of", despite "the population of simple concepts is fixed" by experience. So there exists a division of labor of sorts between imagination and experience, in that the former endlessly opens the realm of the thinkable, while the latter puts "an end to the things one can think of" (85) within that realm. We agree that all this captures Hume's idea of the imagination; but only partially so and, in our opinion, not in its core, more essential aspect. According to our own view, Fodor's statement above ("there's no end to the things one can think of") needs to be supplemented with the following crucial one: *There is no end in the way one can think of a particular 'real' something*. According to our own interpretation, it is this statement that more directly captures what Hume's 'imagination' does, while Fodor's counterpart surely captures a sort of side-effect of its natural powers. This is, assumedly, a contentious claim, and one that deserves to be neatly justified. The key of our argument is again PARIS, so let's visit one more the City of Light.

Remember that it is Hume's contention that one cannot construct an idea of Paris roughly based on the impressions received after visiting the city. No

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12   Certainly enough, Fodor writes that "for Hume, imagination is the faculty of compositionality" (94), but his continuously restricting the faculty's natural range of applications to pure imagination misrepresents Hume's explicit claims. Nonetheless, in the same page, Fodor misquotes Hume, we believe, when the former refers to the latter's claim about the "*liberty of imagination to transpose and change its ideas*" (*Treatise*, p. 12; emphasis in original), as pinpointing pure imaginative compounds. Hume certainly claims (ibid.) that "[t]he fables we meet with in poems and romances put this entirely out of the question", but this cannot be read as contending that fables are the only realm on which imagination applies. Imagination is as present in the enacting of recollected past events as it is in fabulating them (*Treatise*, p. 11). One may feel tempted to conclude that it is Hume's position that because recollecting entails imagining, fabulating becomes accessible to the mind—but not the other way around.

mind—not even an extremely hypermnesic one—could do that. Minds are doomed to be manipulative in order to be viable at all as the fabric of ideas. This is how the faculty of imagination actually enters into the economy of mind according to Hume's narrative: Impressions that massively impact the representational mind need to pale into shadowy ideas in order to serve as the bricks for representing complex experiences—that is, 'memory' must give way to 'imagination' (*Treatise*, § 1.1.3; see fn. 4). In the way, impressions are lost, resized, transposed, and recomposed (*Treatise*, p. 8; *Enquiry*, p. 14)—or, as summarized in the previous section, 'edited' for representation. As nicely captured by Wilbanks (1968: 72ff.), forming ideas, and not just uniting and separating them, is one of the powers of imagination, which is assisted by a principle of liberty. Consequently, a particular 'real' something—Paris—may be variously (as a matter of fact, endlessly) represented at different times within the same mind, not to speak of different minds at the same or different times. What Fodor missed about Hume's 'imagination' is its complementary role to the one of 'memory' in the economy of mind, as well as the richness of its effects on representations, for contrarily to Fodor's partial reading, they amount to much more than simply 'gluing' ideas. Such effects, while primarily apt to countervailing the inconveniences of rough memory, also pave the way to the boundless scope of things one can think of.

What we conclude is that Hume's computational apparatus is not as 'weak' as Fodor believed it to be. On the contrary, it is rather 'strong': It deletes, augments, diminishes, transposes, and composes, at a minimum. If something is clear, it is that much against Fodor's construal, it 'adds' a lot—or potentially so—to the content of previously processed representations, either by memory or by prior imaginative efforts applied to impressions directly rooted in experience. Fodor failed to appreciate all this, which defies the crucial point of his whole argument: Hume doesn't appear to be as strongly committed to the empiricist stance as to believe that computations cannot cause representations to depart in essential respects from the experiential patterns that impress the mind. Fodor contends that Hume had a problem with this, but we think that he hasn't.

So, what's the bottom line? Paradoxically enough, grist to Fodor's mill: Hume's empiricism and computationalism are more balanced than Fodor appreciated. Hume was a more committed representation/computational theorist than even Fodor's representational/computational eyes were capable to detect. But in the end, did Hume get something wrong? Surely he did, and Fodor got it right: Hume's computational mind seems to lack, at least, the power of 'embedding' ideas within ideas: It is not enough to put DOG and CAT together to get PET; what one really needs is to embed them within an overarching representation. Similarly, it is not enough to put HORSE and HORN together to get UNICORN, or to put twenty *arrondissements municipaux* to get PARIS; and so on and so forth. But considering the considerable richness of Hume's combinatorial processes, and that they were clearly advanced as a tentative list, it is not too risky to conclude that he would have been willing to accept 'embedding' in the list without sensing this was betraying the ultimate anchoring of representations in experience. We thus disagree with Fodor's thesis that Hume was vigilantly avoiding enriching associations for he fully understood "what it [was] going to cost him", namely, "his

empiricism" (Fodor 2003: 119). As a matter of fact, Hume's associations are rich from the start, clearly much more than what Fodor referred to as the "bare bones Law of Association", which he (Fodor) felt so reasonably committed to fight against. But it was probably not so needed, we believe, to get Hume off this hook.

According to our interpretation, Hume's science of human nature was even closer to contemporary RCTM than Fodor explicitly guessed; and Fodor's own version of RCTM was closer to Hume's science of human nature than the latter could have been possibly prompt to admit. Obviously enough, this must not be read as positing that no serious gaps exist between them, since, as commented by an anonymous reviewer, key contributions of mind to meaningful representations were certainly far away from Hume's Cartesian horizon—e.g. logical form composition on a Turing-style basis, or the kinds of additive meanings that obtain 'beyond' strict composition.

4.   Conclusion

Hume was, according to Fodor's apt description, a 'Cartesian naturalist' (Ch. 1): As a Cartesian, he treated 'ideas' as what make things they are about 'thinkable'; as a naturalist, he tried to avoid any metaphysic apriorism about what ideas are, by rigidly anchoring them in experience. This was not an easy tension, as anyone can appreciate considering how the former stance approximated him to contemporary RCTM, while the latter inclined him toward present-day Pragmatism. According to Fodor's diagnosis, Hume succeeded in avoiding the pragmatists' original sin of plainly ignoring the structure of mind, yet he had to pay the price of exacerbating his empiricism, at the cost of sacrificing the whole success of his computational project. In this note we have partially disagreed with this diagnosis. Sure enough, Hume's RCTM was not a fully successful one, but as Fodor himself implicitly acknowledged (115), such was an aspiration completely out of place before the advent of Turing's contributions.

In this note we have claimed that Hume's purported failure was of a different, more justifiable kind: He just didn't manage to carry to completion the project of identifying the powers by which a humanly structured mind transforms simple experienced impressions into complex representations. But in all likelihood, he didn't manage for he didn't even intend to fulfill it. It was not among his main preoccupations, which justifies his loose way of referring to specific computational operations, both in the *Treatise* and in the *Enquiry*. Hume's main preoccupation seems to have been one that was already in his mind well before he actually started building his science of human nature: namely, correcting the 'natural philosophy' of the forerunners of such a project "of being entirely hypothetical, & depending more upon invention than experience".[13] We have argued that in doing so, Hume left enough elbow room to a more sophisticated cognitive architecture than commonly thought, which, in the end, makes Fodor's claim that the "*Treatise* is the foundational document of cognitive science" (134) even truer.

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[13]   From a letter dated in 1731. The quote is from the following edition: *The Letters of David Hume*, vol. 1, ed. J.Y.T. Greig, Oxford: Clarendon Press, 1932, p. 10.

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