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MEMORY AND IMAGINATION

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In the history of philosophy, the relationship between memory and imagination has been a matter of debate. This article critically surveys the controversy. The first section explores some reasons that have led philosophers to assume that memory and imagination are distinct. The second section offers a historical overview of the main views concerning the distinction between memory and imagination. I suggest that much of the philosophical discussion surrounding the nature of this distinction obfuscates at least three different senses in which memory and imagination could differ. One sense concerns the difference between mental events that should be considered memories versus those that should be considered imaginations. A second sense concerns the nature of the relationship between the mental faculties or systems of memory and imagination. Finally, a third sense concerns the phenomenology of remembering versus that of imagining. The third section concludes with a brief overview of some important behavioral and neuroscientific results relevant to this discussion.

Should memory and imagination be distinct?

For years, the received view in the philosophy of memory has been that memory and imagination are distinct. Although most of the discussion has focused on the precise nature of the distinction, it is worth examining the reasons that have driven philosophers to assume that memory and imagination must differ. Some philosophers have supported this assumption on conceptual grounds. Aristotle, for instance, does so by deploying a *content-based principle* (De Brigard 2014a), according to which two or more cognitive faculties are different from one another if the intentional contents they purportedly operate upon are distinct. Employing this principle, Aristotle distinguishes memory from expectation and perception in *de Memoria*. Briefly, he argues that memory ought to be different from both expectation and perception because, unlike expectation, which is about things that haven't happened yet, and unlike perception, which is about things that are happening now, memory deals with things that already happened (Sorabji 1972: 449b10–25). Aristotle also points out that, unlike memories, imaginations are typically about things that did not happen or are false (*de Anima* 428a12–15). Thus, the fact that memories are about things that happened and are true, whereas imaginations are about things that did not happen and are false, leads Aristotle to use the content-based principle to claim that remembering must be different from imagining.

Unfortunately, the employment of such a content-based principle to buttress the distinction between memory and imagination is controversial. Aristotle wants us to accept that remembering and expecting, for instance, are distinct *because* the content of mental states that are about things that happened in the past are relevantly distinct from the contents of mental states that are about things that may happen in the future. But what reason do we have to accept the second clause? Moreover, even if we grant that, somehow, such contents are relevantly distinct, we still need a reason to believe that a difference in mental content maps onto a distinction in psychological processing. What could prevent us from making an analogue case for mental contents about things that are smaller than 6 feet versus things that are bigger than 6 feet? Why should time be a better psychological wedge than size? Without a principled way to determine, first, when a certain kind of mental content is relevantly distinct from another and, second, when such a distinction in content maps onto a distinction in cognitive processing, Aristotle's strategy to individuate cognitive faculties risks delivering arbitrary cognitive taxonomies.

A second reason to be suspicious of content-based conceptual strategies to distinguish memory from imagination comes from the fact that confining the contents of memories solely to things that happened in the past may leave out clear instances of remembering that are not about past things. As Munsat (1966) pointed out, we often use the locution "remember" to refer to events that have not happened yet. Suppose that you leave your office with a friend, and she invites you over for a drink. "Thank you", you answer, "I'd like to very much. Oh, wait a minute, I just remember that I have to be home because Jerry is coming for dinner." In what sense, Munsat wonders:

> . . . is this 'remembering' of the past? As far as I can see, the only thing 'past-ish' about my suddenly remembering that I have to do something, or be somewhere, is that we always say "I just remembered". But what was supposed to be in the past was *what* I remember, not the remembering.
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> *(Munsat 1966: 5)*

Trying to find something about the moment in which you arranged the dinner with Jerry won't do, as not only the content of the memory "I remember inviting Jerry over for dinner" is different from the content of "I remember I have to be home in a few minutes," but also is not even necessary for you to remember anything about the moment in which you invited Jerry, or about the intention of having him over, to suddenly remember that you have to go home. True, all these could be causal factors leading to your sudden realization that you cannot accept the invitation, but they needn't feature as the contents of your memory. Still, to suddenly remember seems like a genuine case of remembering. Thus, confining all memorial contents to be about past events would leave out clear instances of remembering.

A second strategy to defend the claim that memory and imagination must differ involves linguistic reasons. "Remember," it is said, is a factive verb, meaning that when it is used to express a relation between a subject, S, and a proposition, p, the corresponding propositional attitude report "S remembers p" can only be true if p is true. Thus, if one utters "John remembers that the car is out of gas", the utterance can only be true if, in fact, the car is out of gas. "Imagine," on the other hand, is not factive. One can say, truthfully, "John imagines that the car is out of gas," even if the car is not out of gas. Arguably, this grammatical difference gives us reason to believe that memory and imagination are distinct.

However, this factivity constraint can be objected. The first objection pertains linguistic chauvinism. Let's grant that the English verb "remember" expresses a relation between a subject and a proposition referred to by a predicative that-clause. Why should that matter? Currently,

there are around 6,500 languages spoken in the world (Evans and Levinson, 2009). It would be a miracle if all languages would have a lexicalized verb not only sharing the same semantic field as the English verb "to remember," but also taking as complement a sentential clause. Indeed, although less than 10 percent of today's languages have been decently documented, we already find counterexamples. Dalabon, a Gunwinyguan language of Arnhem Land (Australia), simply has no lexical verb for remembering. To talk about memories, speakers of Dalabon employ different tenses and aspectual transformations on words that are also used to express other mental processes, such as "realize," "attend," and "decide" (Evans 2007). Moreover, some languages don't even make distinctions between verbs and direct complements, like Straits Salish, an endangered language in the American Pacific Northwest, which only contains one major class of lexical item functioning as predicate (Jelinek 1995). In neither of these languages do their approximate cognates of "remembers" look relational – or at least not in the same way in which "remembers" looks relational in English. Arguing in favor of a psychological or metaphysical difference between memory and imagination on the contingent fact that we speak English seems, if not unwarranted, at least chauvinistic.

A defender of the linguistic strategy may contend that the evidence comes not from surface but from deep grammar. Thus, even if a language lacks a lexicalized verb for "remembering," it may be possible that remembering-like constructions can conform, at the deep grammar level, to the canonical form of propositional attitude reports. This strategy is problematic too, for even at the deep grammar level, the distinction between complement, relative, and adverbial clauses isn't always clear-cut. For instance, sometimes determining whether a subordinate clause pattern conforms to one or another structure may be, more or less, a matter of taste. "I remember when I used to play" seems to take as a complement an adverbial clause, but for certain purposes it could be taken as a relative clause with an elided head noun, e.g. "I remember [the days] when I used to play." Forcing all construction patterns to look like nominal phrases taking as complements sentential clauses of the form "S remembers that p" may look like an attempt to make the data fit the theory rather than the other way around.

Linguistic variability aside, there are other reasons to be suspicious of the factivity constraint. Although virtually every endorser of the factivity constraint assumes it as obviously true from the way in which competent speakers allegedly use the word "remembering" (Audi 1998; Malcolm 1963; Shoemaker 1972), a handful of additional reasons have been offered in support. One line of argument is to claim that the conjunction of a memory claim with the negation of its embedded clause is contradictory. According to this line of argument, if someone utters (a) "I remember I was drinking tequila but I wasn't drinking tequila," then she would be contradicting herself. But, as Hazlett (2010) has recently argued, this isn't really a contradiction. It is only incoherent in the same way in which Moore's famous "It is raining outside but I don't believe it" is incoherent. For it would be wrong to think that no competent user of the verb "to remember" can rationally hold (a) true. At most, it is only pragmatically incoherent, and the incoherence appears solely when we keep fixed the conditions under which the claims before and after the "but" are evaluated. However, evaluative conditions between claims can shift. Suppose a tequila snob utters (a) so that the first claim is evaluated as a description of the event, whereas the second claim is evaluated as a value judgment of what constitutes tequila. His utterance of (a) wouldn't be contradictory then.

Another argument for the factivity constraint consists in applying Vendler's criterion to the verb "to remember." According to Vendler (1972), one could distinguish between factive and non-factive verbs in that the former, but not the latter, can be transformed into wh-clauses. Thus, "to remember" is factive because "Jose remembers that the car was scratched" can take the form of "Jose remembers where the car was scratched," "Jose remembers when the car was

scratched," etc. But what is really the scope of this argument? First, albeit grammatically correct, it seems to make little psychological sense. It may be that Jose does not really remember where the scratch was or when it happened. Thus, some cases in which the wh-clauses produced by Vendlerizing remembering statements may involve information about the remembered event that need not be part of the expressed intentional content. Should we say that these aren't genuine cases of remembering? If we say that they are, then the Vendler criterion isn't really that useful. At most, it indicates something interesting about the grammar of the English verb "to remember" that has no bearing on the truth of its contents. But if we say that they are not genuine cases of remembering, precisely because there is some information "missing," then we are unduly constraining our cases of genuine remembering to cases in which a large amount of information about a particular event needs to be brought to mind. Many of our memories wouldn't then count as genuine memories.

Second, this strategy is hard to apply to memory statements about atemporal events or events that haven't occurred. Consider:

(1) I remember that I am going to see you next week.
(2) I remember that the number of planets is 8.

In these cases, the following wh-clauses derived from (1) and (2) sound odd:

 (1') ⋆I remember when I will be seeing you next week.
(1'') ⋆I remember what I will be seeing you next week.
 (2') I remember what the number of planets is 8.
(2'') ⋆⋆I remember when the number of planets is 8.

A possibility is to try to translate these statements into remembering-statements about events that happened in the past. But, as discussed above, this strategy won't do. When I remember that I will be seeing you next week, I needn't bring to mind anything regarding the way in which I encoded the information about our future meeting. Likewise, we often remember facts without recalling when or how we learned them. To say that I remember that the number of planets is 8 does not imply that I also remember having learned it. I may have forgotten learning about it while still remembering the fact.

Finally, perhaps the most damaging argument against the factivity constraint is the simple fact that competent speakers just don't abide by it when they use the word "remembering" (Hazlett 2010). Talk of false memories, for instance, is nowadays ubiquitous. Most people feel comfortable using the word "remembering" when referring to things that didn't happen, or things that didn't happen exactly as remembered. Are people just misapplying the word "remembering"? Traditionally, this has been the philosophers' reply, as they dismiss the concern about false memories by distinguishing *ostensive* from *veridical* remembering (Shoemaker 1972). Ostensive remembering is only "seeming to remember," whereas veridical remembering is, well, true remembering, i.e. recollecting what was the case. The thought is that when we use the word "remembering" when referring to events that did not happen, we are speaking loosely, for we should have used instead the locution "seeming to remember." But this strategy isn't warranted. Notice that "seeming" has, at least, an epistemic and a phenomenological sense (Schwitzgebel 2008). In the epistemic sense, we use "it appears/seems" to indicate hesitation or uncertainty. But false and distorted memories just don't come to us in a way that makes us hesitant about them being memories. Conversely, in the phenomenological sense, we use "it appears/seems" to indicate the way in which a particular mental content presents itself to consciousness, as when

we say, looking at the Muller-Lyer illusion, that one line appears longer than the other. In this case, we express no hesitation but a mere phenomenological report. The problem is that, when it comes to the phenomenological sense of "seeming to remember," distorted and veridical memories are often indistinguishable. The distinction between seeming to remember and actually remembering only makes sense from the point of view of epistemology, but this is because the philosopher has already confined her notion of remembering to veridical memories – a decision that isn't grounded in the way competent speakers use the word "remembering."

To summarize: the claim that memory and imagination must be distinct is often assumed a priori. The few arguments given in support of this assumption take the distinction to be grounded either on conceptual or linguistic facts. I offered reasons to be skeptical of both strategies. Despite it being part of the dogma in philosophy for centuries, the best reasons philosophers have mustered in support of the assumption that memory and imagination must be distinct are, in fact, controversial.

On the distinction between memory and imagination

Notwithstanding the controversy, it is still legitimate to ask what, if any, is the difference between memory and imagination. Here, again, philosophers disagree. Unfortunately, the disagreement is obfuscated by the fact that traditional attempts to clarify the distinction often confuse at least three non-mutually exclusive senses in which one can ask how memory and imagination differ. First, we may wonder how a *particular* memory is different from a particular imagination. Attempts to distinguish memories from imaginations in terms of mental contents, mental representations, or even the causal relationship to their intentional objects, can be seen as speaking to this first way of understanding the question. Second, we may also wonder how memory, qua cognitive *faculty* (or system), is different from imagination. Traditional views also vary here, with some suggesting that memory and imagination are entirely different faculties, others that they are the same, and some that it may be best to think of them as having common and distinct processes. Importantly, the answer to this second question is fairly independent of the answer to the first question, as one can hold, for instance, that memories and imaginations are different mental events even though they are processed by the same faculty, by faculties that share common processes, or by entirely independent systems.

Finally, we may also wonder how memory, qua psychological *experience*, differs from imagination. Again, the answer to the question about the phenomenological differences between remembering and imagining is, to some extent, independent of the answers to the first two questions. One could, for instance, suggest that memories are experienced with more vivacity than imaginations, and argue that such phenomenological difference is due to a difference in the corresponding mental representations, or to the way in which such representations are processed. As mentioned, traditional philosophical views on the distinction between memory and imagination are often unclear as to what sort of difference they are speaking to. In what follows, I review some prominent philosophical views on the difference between memory and imagination, while trying to elucidate the precise sense(s) of the question each view addresses.

Philosophical discussions about the nature of memory and imagination can arguably be traced back to Plato (MacKisack et al. 2016; Chapter 30, this volume), not so much because he offered a psychological theory of either of them, but rather because he helped to introduce the terms of the debate. Specifically, Plato's metaphorical allusions to both memory and imagination consistently employed representation-like terms – such as "impressions" (*Theaetetus*: 191d), "copies" (*Republic*: 509e; *Sophist*: 266b), and "images" (*Philebus*: 39b) – also used to refer to non-mental

representations (e.g. paintings, portraits). While Aristotle inherits Plato's terminology – particularly the locutions *phantasma* and *eikon* – he didn't treat them on par. Instead, he argued for a distinction between memories and imaginations *qua* mental particulars. After suggesting that memory must be different from perception and expectation (see the first section of this chapter), Aristotle wonders (*de Memoria*: 450a25) how something that is not present – the remember*ed* – could be recalled by something that is present – the remembe*ring*. Prima facie, his answer resembles Plato's: when we remember, we perceive an image of the past. However, this solution raises two problems. First, if remembering is to perceive something present, viz. the current image, then we must say that what we remember is present. By Aristotle's own assumption, this cannot be: memory is about the past, not the present. But if what we remember is the past, and remembering is a kind of perception, how can we perceive something that is not present? This looks like an aporia. The second problem can be illustrated with a thought experiment. Suppose that Edgar witnesses a certain object, say, Mount Fuji, and later on recalls this mountain by perceiving a mental image resembling it. If remembering consists in perceiving a mental image resembling a past object, then this would be a case of remembering. But now suppose that Ava, who has never seen Mount Fuji, is asked to imagine a snowy mountain. With magnificent detail, Ava manages to conjure up a very elaborate mental image that happens to be identical to Edgar's. As such, both Edgar and Ava's perceived mental images resemble the same object to an equal degree. Yet, intuitively, only Edgar's constitutes a memory; Ava's is an imagination. But if all there is to remembering is to bring to mind and presently perceive a mental image that resembles a past event, then we would have to say that both are memories. So, what gives?

Aristotle's solution is to differentiate two kinds of mental images: *phantasma*, which is used as a generic term for mental image (*de Anima*: 631a16), and *eikon*, which is a mental image similar to and causally derived from the object it represents (*de Memoria*: 450a27–b11). Remembering, then, consists in bringing back to mind an eikon. If the currently perceived image merely resembles but it is not causally derived from a past object, then it is not a memory: it is merely an imagination (451a2; a8–12). This *causal criterion* constitutes Aristotle's strategy to distinguish memories, qua mental particulars, from imaginations. Critically, the causal criterion is external, in that the individual need not remember that the currently perceived mental image was actually caused by a past event, as it is the case with some of the cases introduced by Martin and Deutscher (1966; Chapter 5, this volume). Edgar could have forgotten seeing Mount Fuji and, later on, being asked to imagine a snowy mountain; if the mental image Edgar conjures up both resembles and is causally derived from the previously witnessed mountain, then it constitutes an act of remembering even if he thinks he's just imagining.

Aristotle also employs the aforementioned content-based principle to distinguish the *faculties* of memory and imagination. For him, memories represent both past objects and time lapsed (*de Anima*: 450b27), so he reasons that memory must be related to the part of the mind with which we perceive time, viz. common sense. This is because Aristotle takes time-perception to be essentially change-perception, which is possible only if one can contrast two or more images of that which changes. Since such contrasts can be multimodal, they occur in the common sense. Now, the contrasted images – phantasmata – are the objects upon which phantasy, or imagination, operates. Therefore, memory is not only part of but also depends on imagination.

Years later, Aquinas developed a more nuanced model of the relationship between memory and imagination (MacKisack et al. 2016; Chapter 37, this volume). First, Aquinas uses "phantasia," not as a synonym for "imagination," but as a general term for the mental contents that result from common sense funneling information from the "outer senses." He then takes imagination to be one of three faculties of the "inner senses," all of which process phantasmata as their contents. Specifically, Aquinas considers imagination (*vis imaginativa*) as

the "storehouse" (*thesaurus*) of sensory forms. Memory (*vis memorativa*), the second inner-sense faculty, links the information from imagination to a particular individual object or event at a particular time; that is, it stores the spatiotemporal context of the phantasmata kept in imagination. Finally, cognition (*vis cogitativa*), abstracts away from the pure sensory and spatiotemporal information of the mental image in order to apprehend "primary substances," akin to "categories," or "concepts" (Lisska 2016). The relationship between memory and imagination is, therefore, hierarchical: memory depends on imagination – which also has a retentive function – but goes beyond it by its capacity to store the spatiotemporal information associated with the acquisition of a particular mental image. Additionally, imagination has a creative or "compositive" ability, which allows it to piece together images that were not jointly perceived. Memory may remember these mongrel phantasmata, but they were imagination's work.

Aquinas' account contrasts with the neo-Platonic view of Augustine (Chapter 35, this volume). For the latter takes memory, not imagination, to be fundamental. Specifically, while he accepts that memory stores images from the senses (*Confessions* X: 8), he believes that memory also contains non-imaginistic information, such as facts (X: 9), feelings, bodily reactions (X: 14), and abstract cogitations (X: 12–13). Unlike Aristotle and Aquinas, Augustine does not think that memory and imagination process the same contents, i.e. mental images. Instead, he endows imagination with the lowlier task of either filling-in or putting together memories in novel ways (Breyfogle 1996). Thus, imagination can play positive roles in our mental life, such as using past memories to generate predictions and expectations (XI), but also negative, as it can also be the source of error and confusion (I: 16; *De Vera Religione*: 64). We see, then, a contrast between an Aristotelian and a neo-Platonic view of the distinction between memory and imagination. For the former, memory (qua faculty) depends on imagination, and memories (qua mental particulars) are distinguished from imaginations, not by not being mental images, but by being processed by distinct faculties. For the latter, imagination (qua faculty) depends on memory, as it cannot operate unless there are already mental images stored, and it also differs from it in that the set of all memories (qua mental particulars) is larger than the set of images, restricting thus its processing domain.

Descartes is harder to fit within this dialectic, partly because he is more interested in squaring the distinction between memory and imagination with biological and phenomenological observations than with abstract principles. For instance, Descartes suggests that the brain activity responsible for perceptions is similar to that underlying both memory and imagination (Clarke 2003). However, in the *Passions*, he states that there is a difference between perceptions that are caused by real events, such as sensed and remembered ones, and those that are triggered by merely imaginary ones: "The impressions that come into the brain through the nerves are usually more lively and more distinct than those stimulated in the brain by the spirits" (xi: 348). Thus, unlike Aristotle's causal criterion, Descartes *lively criterion* is internalist: it pertains to the experience of imagining and remembering, rather than to the causal origin of the experienced mental content. True, Descartes – as many of his successors – thought that increased vivacity correlated with actually experienced events, but he still placed emphasis on the phenomenology of the experience as a criterion for distinguishing particular memories from imaginations. Although less developed, a second internalist criterion is also evident in Descartes' work: coherence. At the end of his *Meditations*, he briefly suggests that experiences of real events cohere better with our beliefs than experiences of merely imagined events (vii: 89–90). Thus, in Descartes, we find a view in which memory and imagination share a common functional substrate, and whose sole differences are to be found internally, in the way those contents are experienced.

At around the same time, Hobbes was arguing for a stronger claim: "That Imagination and Memory are but one thing" (Hobbes 1651, ~~Leviathan:~~ 2). Hobbes's view of cognitive contents is inspired by the notions of motion and inertia. Roughly, his idea is that every object is in constant motion unless it is hindered by something else, such as our senses. When our eyes, say, contemplate an object, its motion is hindered and as an effect, it leaves an image in our senses. As long as the object is perceived, its effect endures, and the image is clear. But if the item is removed from our presence, or we shut our eyes, its effect begins to decay, and thus the image becomes more and more obscure. Imaginations and memories are, therefore, faded mental images, whose perceived obscurity is due to their objects no longer exerting pressure upon our senses. This view implies, not only that memory and imagination are identical qua *faculties*, but also qua *particular* mental contents: both are faded images of previously perceived objects. How can Hobbes reconcile this view with the obvious differences in our experiences of remembering and imagining? Here, I suggest, Hobbes employs another internalist criterion, based on the purpose to which these faculties are put to use. Remembering, he suggests, is bringing to mind "simple imaginations": images as they were perceived, unchanged, by the senses. Imagining, on the other hand, is bringing to mind "compound imaginations": images composed of simple imaginations pieced together – e.g. the compound image of a centaur, which combines the simple images (memories) of a horse and a man.

Since then, we see modern empiricist and rationalist philosophers offering internalist criteria for distinguishing memories from imaginations. Spinoza, for instance, considers both memories and imagination to be ideas associated with previous modifications of the body (*Ethics*, XVIII). However, he suggests that memories, unlike imaginations, "are accompanied with the thought to determine the duration of the sensation" (*TIE*: 83). Memories, accordingly, are connected to the sensation by the accompanying temporal thought. We mistake imaginations for memories when the unamended intellect erroneously assents to the unconnected sensation as if it was connected. Surprisingly, a similar internalist criterion is offered by his contemporary John Locke. In an oft-quoted passage of the second edition of his *Essay*, Locke suggests that memory is the mind's power "to revive perceptions which it has once had, with this additional perception annexed to them, that it has had them before" (X: 2).

Distinguishing memories from imaginations by suggesting that the former, as opposed to the latter, are accompanied by an added mental content at retrieval, is a popular strategy (De Brigard 2014b) even to this day (e.g. Fernández 2015). I've already mentioned how Spinoza and Locke thought of this added state as a kind of affective state of duration or "pastness." Others – e.g. Leibniz (1714) and Kant (1787) – thought of the accompanying mental state as a second-order representation or *apperception* the content of which is that the currently entertained image is the same as one entertained before. Finally, some – e.g. James (1890) and Russell (1921) – take this additional content to be a belief. James, for instance, suggests that memories, unlike imaginations, are retrieved "with the additional consciousness that we have thought or experienced [them] before" (1890: 648). Similarly, Russell claimed that while memory-images and imagination-images have identical intrinsic qualities, only the former

> . . . are accompanied by a feeling of belief which may be expressed in the words 'this happened'. The mere occurrence of images, without this feeling of belief, constitutes imagination; it is the element of belief that is the distinctive thing in memory.
>
> *(Russell, 1921: 14)*

However, no account of the difference between imagination and memory is as influential as Hume's two internalist criteria (Chapter 39, this volume). The first criterion is vivacity:

"The ideas of the memory are much more lively and strong than those of the imagination" (I: I, 3). The second criterion appeals to structural preservation between the original impression and the retrieved one: "Imagination is not restrain'd to the same order and form with the original impressions; while the memory is in a manner ty'd down in that respect, without any power of variation." (ibid.). Hume, however, was aware of the obvious difficulties of the second criterion: one simply cannot bring back to mind the original impression to compare it with the retrieved one (a point Reid (1785) emphasizes). Thus, he placed more importance to vivacity as an internalist criterion for distinguishing memories from imagination (I: III, 5).

Nevertheless, Hume's vivacity criterion has been widely criticized (MacNabb 1966; Passmore 1968). Influenced by Wittgenstein's anti-imaginistic stance on psychology (e.g. 1963, I: 905), Ryle famously argued that Hume's use of the term "vivacity" was mistaken in one of two ways. On one hand, if "vivacity" means "lively," then it makes sense to say that one doll looks more "lively" than another one, in the sense of seeming to be more life-like. But this notion, claims Ryle, makes no sense when it comes to impressions. On the other hand, if "vivacity" means "intense," then Hume is wrongly assuming that what can be said of sensations can also be said of mental images, for while a sensation can be said to be stronger or weaker than another, the same is not the case for images: "While I fancy I am hearing a very loud noise, I am not really hearing either a loud or a faint noise; I am not having a mild auditory sensation" (Ryle 1949: 270).

Shortly after, R.F. Holland – echoing a concern previously expressed by others (Kemp-Smith 1941; Russell 1921) – states what for many is the Achilles heel of Hume's vivacity criterion: "The suggestion that the haziest of recollections must be somehow clearer and more vivid than the most powerful products of a lively imagination seems implausible, if not senseless" (Holland 1954). Holland articulates two versions of this objection. The first version pertains individual memories and imaginations. According to this version, Hume's vivacity criterion is to be understood as stating that *all* memories are more vivid than imaginations. That is, for every particular memory, *m*, and every particular imagination, *i*, *m* is more vivid than *i*. However, it is a fact that, sometimes, a particular *i* is more vivid than a particular *m*. Therefore, it is not the case that all *m* are more vivid than all *i*.

Unfortunately, Hume had already anticipated this objection, when he claimed that frequently a memory may become weak and feeble, and that

> . . . by losing its force and vivacity, may degenerate to such a degree, as to be taken for an idea of the imagination; so on the other hand an idea of the imagination may acquire such a force and vivacity, as to pass for an idea of the memory, and counterfeit its effects on the belief and judgment.
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> *(I: III, 5)*

Still, Holland offers a second version of the argument that, allegedly, may prove fatal. This version takes Hume's vivacity criterion as suggesting that, on average, memories are more vivid than imagination. However, Holland suggest that, in the case of memories and imaginations, the notion of "average" makes no sense, as there is no measure according to which the respective ranges of vivacity can be compared, as opposed to, say, things made of lead, which are on average heavier than things made of cork – even if some things made of cork are heavier than some things made of lead – because weight is a common measure that allows to compare them. Vivacity does not seem to be a good criterion to distinguish memories from imaginations.

Urmson (1967) suggested an ingenious strategy to safeguard Hume's vivacity criterion. According to Urmson, there is an ambiguity in the way "imagining" and "remembering" are used in this discussion. On one hand, imagining and remembering can differ in terms of their

success criteria. One may successfully imagine something when one attempts to invent some-thing freely and does it. Conversely, one may successfully remember when one attempts to bring to mind a past experience and does it. In this sense, Urmson suggests, Hume was right in taking the internal character of the mental activity as sufficient criteria to determine whether one is imagining or remembering. However, if "imagining" and "remembering" are under-stood in terms of accuracy, then internal criteria won't work, as we can't simply tell, from the subjective experience alone, whether what we take to be a memory is or not an accurate representation of what happen, just as we can't tell whether or not what we are imagining does, in fact, correspond to an actual past event. E.J. Furlong (1970), alas, is not convinced, for he believes that Urmson is making Hume draw a distinction he did not have in mind: that of attempting to imagine versus attempting to remember. Furlong correctly points out that such was not Hume's intention and, therefore, that Urmson's isn't an adequate defense of Hume's internal criterion of vivacity.

This historical review is both opinionated and selective. Still, it shows how philosophers bestride three ways to ask about the nature of the distinction between memory and imagination, viz. to mean either (1) mental particulars, (2) cognitive faculties, or (3) psychological experiences. Regarding (1), philosophers' views fall into two groups: *externalists,* for whom the difference between memories and imaginations depends on something extrinsic to their contents – e.g. an appropriate causal connection to their objects (Aristotle) – and *internalists*, for whom the difference is to be found in the content, either because of an intrinsic difference (e.g. Aquinas's memories are spatiotemporal) or because, at retrieval, otherwise indistinguishable contents are recovered in conjunction with additional mental states, be them affective (e.g. Spinoza, Locke, maybe Hume), cognitive (e.g. James, Russell), or apperceptive/meta-cognitive (e.g. Leibniz, Kant). As for (2), we see philosophers endorsing either a hierarchical relationship between them (Aristotle), a complete dissociation (Augustine, Aquinas), a full-fledged identification (Hobbes), or an intermediate stance in which imagination and memory have distinct and common pro-cesses (Hume). Finally, regarding (3), philosophers have used criteria such as liveliness, coherence (Descartes), clarity (Hobbes), vivacity (Hume) and familiarity (Russell, James), to characterize the differences in the phenomenology of remembering and imagining.

Can science distinguish memory and imagination?

Recently, findings from research in the cognitive psychology and neuroscience of memory and imagination have been brought to bear on the philosophical discussion about the nature of their distinction. One relevant line of research pertains work conducted by psychologist Marcia Johnson and collaborators. In the 1970s, there were a couple of important findings pertaining people's ability to remember information that they either came up with or merely perceived. The first finding is reported in an influential paper by Slamecka and Graf (1978), where they show a memory advantage for self-generated versus other-generated information. Importantly, they also report that this manipulation makes people really good at determining the source (i.e. self or other) of the remembered information. The second set of results came from the work of Larry Jacoby (1978), who showed that self-generated solutions to a prob-lem are better retained than solutions that are simply repeated. Repetition, however, tends to increase perceptual fluency which in turn tends to increase false alarms to repeated relative to non-repeated information at retrieval (i.e. the fluency effect; Jacoby and Dallas, 1981). These, and similar observations, lead Johnson to propose the source monitoring framework (SMF: Johnson et al. 1993; previously "reality monitoring framework": Johnson and Raye 1981). The SMF starts with the assumption that the phenomenological features of every encoded

experience are multidimensional: some features are sensory, some are related to the special arrangement of experienced items, some are emotional or affective, and some pertain to the cognitive operations we are engaged in while experiencing the event. At retrieval, we rely on the relative saliency of these features to bias our judgment as to whether the recovered mental content is from an event that was previously perceived or previously imagined. Specifically, the sensory and spatial features of the retrieved contents of previously perceived events tend to be experienced more clearly and vividly than the phenomenological characteristics associated with the cognitive operations we were engaged in during encoding, which are more salient when remembering previously imagined events. Accordingly, discriminating previously experienced from imagined events is a meta-cognitive decision-making process that depends upon the way mental contents are experienced at retrieval. Moreover, the SMF can also help to explain many well-documented memory distortion effects, where disruptions of source monitoring processes during encoding reliably increase false recognition (for a review, see Johnson 1997).

In addition to making the distinction between memories and imaginations qua mental particulars a matter of meta-cognitive operations on the phenomenological characteristics of the retrieved contents, the SMF also suggests that memory and imagination, qua cognitive systems, share common mechanisms. Further support for this claim comes from a second line of research. For most of the twentieth century, exploring imagination deficits in individuals with amnesia was rare (but see Talland 1965). Perhaps motivated by the observation that individuals with medial temporal lobe (MTL) damage allegedly had only declarative memory impairments, the standard model took memory to be a relatively independent system (Squire 1982). But this view started to change, partly with Tulving's observation that amnesic patient K.C. had difficulty imagining possible personal future events, which prompted Tulving to suggest that remembering one's personal past and imagining one's possible personal future may be two processes of a single system for mental time travel (Tulving 1985). This hypothesis began to receive stronger support in the early 2000s, as a number of neuropsychological (Klein et al. 2002), developmental (Atance and O'Neill 2001), behavioral (D'Argembeau and van der Linden 2004), and neuro-imaging (Okuda et al. 2003) studies further suggested that episodic memory and future thinking share a common mechanism. Since, the number of studies corroborating these observations have risen steeply (Schacter et al. 2012; De Brigard and Gessell 2016), strengthening the view that remembering the past and imagining the future engages a common core brain network (Schacter et al. 2007; Spreng et al. 2009; Spreng and Grady 2010).

Some philosophers, who tend to advocate constructivist theories of remembering (Michaelian 2011; De Brigard 2011, 2012), have taken note of these recent findings and have suggested – a bit in the spirit of Hobbes and Hume – that just as remembering consists in piecing together fragments of previous experiences into mental simulations of past events, imagining possible future events also involves piecing together bits of previous experiences. As such, these constructivist theories of memory align with the view that, understood as particular mental contents, memories – or, at least, episodic memories – and imaginations – or, at least, mental simulations about possible future events – may not be intrinsically distinct, and that the difference in the phenomenology of remembering the past and imagining possible hypothetical scenarios could be accounted for by the meta-cognitive resources afforded by the SMF (Michaelian 2016). In addition, the fact that episodic memory and future thinking require the same reconstructive mechanisms, not only helps to account for the overlap in brain structures involved in remembering the past and imagining the future (Addis et al. 2007), but also buttresses the view that memory and imagination, qua cognitive faculties, may not be independent after all. Michaelian (2016), for instance, defends the view that remembering is a form of imagining, and that episodic memory is a process of a larger system that supports mental time travel (Chapter 18, this volume).

By contrast, De Brigard (2014a), while agreeing that remembering should be seen as a process of a larger system for imaginative simulations, holds that whether the simulations are about the past or the future may not be as essential as the fact that they constitute hypothetical scenarios whose mental simulation unfolds over time (De Brigard and Gessell 2016).

Taken together, the scientific evidence seems to overwhelmingly support the view that memory and imagination are profoundly intertwined. Understanding the precise ways in which they interact, the conditions under which they come apart, and the different constraints they impose upon one another, constitute exciting open questions for future research in the philosophy and the science of memory and imagination.[1]

Note

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