



The aphantasia paradox: a Sartrean update

Daniel Dennett famously said that there is no philosophy-free science; it's just that some science fails to question its philosophical underpinnings. An often-overlooked case in point is that much of the neuroscientific research into mental imagery draws inspiration from David Hume's theory of visual imagination as an attenuated form of perception. However, alternative theoretical perspectives seem more consistent with the available empirical evidence. Here, we briefly examine Jean-Paul Sartre's theory of imagination, assess its resonance with recent neuroimaging findings on congenital aphantasia, and explore how clarifying fundamental conceptual distinctions can enrich contemporary neuroscientific explorations.

Leading models of visual mental imagery, thoughtfully reviewed by Adam Zeman,¹ view imagery as visual perception in reverse, originating from the prefrontal cortex and terminating in the early visual cortex in the occipital lobe. These models have ancient roots in the idea that mental images are feeble copies of the original apprehensions obtained through the senses. Notably, David Hume (1711–76) held that percepts and mental images are similar ‘in every other particular, except their degree of force and vivacity. [...] That idea of red, which we form in the dark, and that impression which strikes our eyes in sun-shine, differ only in degree, not in nature.’^{2(p2f)}

Jean-Paul Sartre (1905–80; Fig. 1), along with Gilbert Ryle and Ludwig Wittgenstein, forcefully rejected the idea that percepts and mental images differ only in degree—a view that reduces imagination to a weaker form of perception.³ Following the Husserlian tradition, Sartre claimed that an imaginative



Figure 1 Jean-Paul Sartre on the Pont des Arts in Paris, photographed by Henri Cartier-Bresson in 1945. Copyright: © Fondation Henri Cartier-Bresson/Magnum Photos.

act is a unique mental act distinct from perception. It is a double mistake to conceive imagining as revived perceiving.

First, we run the risk of ‘reifying’ mental images and depicting the mind ‘as a place peopled with small imitations’.^{3(p5)} Some fictional representations of the mind, as the ones portrayed by the Disney-Pixar film *Inside Out*, are built on oversimplifications of this kind: there are homunculi in the head (e.g. Joy and the other emotions) playing with recordings of our past experiences and driving our behaviour. Framing things this way may offer narrative and aesthetic appeal, but it promotes a misleading conception of the mind. If mental images were like pictures or videos—objects we could inspect—it would make sense to think we access them through an internal perception. But, according to Sartre, no such objects exist in our heads, and imagining is not perceiving.

Second, the reverse perception model overlooks that imagination—or ‘imaging consciousness’—(in general, despite its many specific manifestations; see below), while sharing strong similarities with perception, has its own distinctive

way of representing what it does ('of positing its object'). An important lesson to be drawn from Sartre's view is the emphasis on 'how', rather than 'what', imagination represents, that is to say, on what we do with contents when we imagine, more than on the contents themselves.

Mental states convey information not only through their content but also through the kind of mental state they are. Consider the difference between 'desiring' that the train be on time and 'believing' that the train is on time. Both states share the same content—namely, the proposition 'the train is on time'—so the difference must lie elsewhere. Indeed, it lies in the attitude rather than the content. Different attitudes lend different properties to the same content: while desire presents the content as good, belief presents it as true. Crucially, notions such as goodness and truth emerge from the attitude itself, not the content. This is evident from the fact that children and non-human animals can have desires and beliefs even without possessing the concepts of goodness or truth.

In line with Sartre's ideas, imagination can be understood as a distinctive attitude—a particular mode of mentally representing content, though its precise characterization remains an open question. This view accommodates the heterogeneity of imaginative experiences: while we can imagine the same content in various specific ways, all acts of imagination share a common manner of positing their objects. At a general level, there is a common core to all imaginings; at a more specific level, it allows us to adopt different perspectives—visual, auditory, proprioceptive, or belief-based (doxastic). Imagination can therefore be seen as recreative, simulative, enactive, or capable of mimicking non-imaginative mental states. Imagining is 'as if' seeing, hearing, believing, and so on.⁴ Occasional reports of people becoming confused about whether they are imagining or perceiving seem to contradict Sartre's claim that the two are qualitatively distinct. Sartre indeed argued that such confusion is not genuinely possible and reinterpreted apparent counter-examples.³ In fact, sensory imagination may resemble perception and generate a subjective similarity, in line with the partially overlapping brain networks engaged in both processes.⁵ However, actual confusion is rare and typically limited to experimental settings, such as near-threshold perception.

Understanding imagination in this way opens novel avenues for exploring its neurocognitive architecture. On the one hand, disentangling imagination from perception allows us to appreciate its heterogeneity: imaginings that mimic the five conventional senses represent only a subset of a broader class of mental states that can simulate a wide range of non-imaginative experiences, including bodily movements, sensations, beliefs and desires. In the philosophical literature, this subset is often referred to as 'sensory', 'perceptual' or 'perception-like' imagination.⁶

On the other hand, drawing on the distinction between attitude and content also helps us to recognize that similarities and differences between sensory imagination and perception can occur at different levels: in the way contents are grasped, and in the type of information conveyed. The notion of mental imagery is ambiguous between these two levels: it is sometimes used simply as another label for sensory imagination, but it is also used in a different way to capture a specific type of mental content (i.e. perceptual content) rather than an attitude. Yet, the distinction between these two senses of mental imagery is crucial, for it makes clear that mental imagery (understood in the content sense) can be accessed by attitudes other than sensory imagination (e.g. memory, judgement, etc.).⁶

Sartre advocated not only the autonomy of the imagination but also its central place in the architecture of the mind. In the conclusion of *The Imaginary*, Sartre stresses that imagination is not merely a

coincidental aspect or an addition to consciousness but 'consciousness itself realizing its freedom'^{3(p186)} from the external world.

In the spirit of Sartre, the present framework offers a more articulated theoretical setting for understanding congenital aphantasia. Aphantasic individuals display a striking, paradoxical ability: they do not report any subjective experience of 'as if' perceiving (especially, but not only, in the visual modality), yet they are able to perform specific tasks that should require mental imagery. For instance, they can answer questions from memory about the visual appearance of objects, a task most of us rely on visual mental imagery to perform; they have no problems in stating which fruit typically has a darker red between strawberries or cherries (although their response times are about half a second slower than those of typical imagers).⁷ When questioned about how they accomplish this, aphantasic individuals deny any subjective experience of visual imagery and commonly respond with 'I just know'.

This dissociation between access to information content and lack of imagery experience has sometimes been compared to blindsight, in which patients with damaged visual systems can respond appropriately to visual stimuli they deny seeing, such as by pointing to them. However, a substantial difference exists: while blindsight patients typically perform only slightly above chance, aphantasic individuals' accuracy of performance is indistinguishable from that of typical imagers.⁷ This disparity is so pronounced that it calls into question the validity of the blindsight/aphantasia analogy.

The framework we propose can help explain this puzzling dissociation. Once mental imagery (as a type of content) and sensory imagination (as a type of attitude) are distinguished, congenital aphantasia may be understood, not as an inability to mentally represent perceptual information, but as a difficulty in apprehending this information in a perception-like manner.⁴ In other words, the perceptual information is there and cannot be accessed via our imaginative ability to mimic perception, but it can be accessed via alternative—still conscious—routes such as memory, judgement, or even imagination in its non-perceptual varieties. Some of the current models reviewed by Zeman,¹ which cast the ability of aphantasic individuals to recall the visual characteristics of objects in terms of 'unconscious imagery', fail to capture these nuances.

In line with our proposal, a recent ultra-high field, 7 T functional MRI study⁵ found that the same brain network—including dorsal frontoparietal circuits and high-level visual regions in the ventral temporal cortex—was active during both typical imagery and attempted imagery in aphantasia. However, a key difference emerged in the temporal dynamics of activation. In typical imagery, prefrontal and ventral temporal activity exhibited a strong temporal correlation, suggesting functional integration between these circuits. In contrast, this correlation was markedly weaker in aphantasia. If confirmed, this dorsal-ventral functional disconnection may underlie the absence of vision-like experiences when aphantasic individuals attempt to recall visual memories.


Let us also note that although aphantasic individuals do not report any subjective experience of 'as if' perceiving, it would be implausible to think that they are unable to transcend the real. As Zeman stresses, aphantasic individuals show 'the richer capacity to represent, reshape, and reconceive things in their absence'.^{1(p477)} This is not surprising within the proposed framework: imagination is the key tool to transcend the world and yet indispensable to grasp it through a continuous change in perspectives, which go beyond perceptual ones. Congenital aphantasic individuals do not lack imagination *tout court*, as testified by their ability to put themselves in others' shoes, to engage with fiction, and to be creative; their non-perceptual forms of imagination are unimpaired.

In sharp contrast to the intact recall of visual details in congenital aphantasia, patients with acquired aphantasia, due to lesions in the left ventral temporal cortex⁸ or psychiatric conditions,⁹ have lost access to this type of information; they are unable to recall which fruit has the darker shade of red between strawberries or cherries. In the case of neurological patients, such impairment can result from direct damage to the left ventral temporal cortex or its disconnection from more anterior and dorsal regions crucial for semantic processing.¹⁰ (These patients often retain non-visual semantic knowledge about the appearance of objects, typically grounded in verbal associations—for example, they know that bananas are usually yellow). Thus, high-level visual regions in the ventral temporal cortex play a crucial role in providing visual imagery content; however, experiencing this content through a visual imagination attitude apparently requires the time-coordinated involvement of frontoparietal networks.⁵

Current neuroscientific research, largely rooted in a Humean framework, falls short of doing justice to the richness of imagination. On the one hand, it fails to adequately distinguish it from perception and, on the other, it conflates mental imagery with sensory imagination, whereas sensory imagination is just one form of mental imagery. Symptomatic of this limited perspective is, for instance, the strong emphasis on identifying the neural correlates of conscious versus unconscious perceptual processing.

In contrast, the phenomenological tradition moves beyond this dichotomy, and offers a richer and more nuanced spectrum of diverse conscious experiences. In the present case, both philosophy and neuroscience suggest some overlap, but also substantial divergences between perception and imagination.

Hume's view may appear to be better aligned with neuroscience than Sartre's. This is not surprising, as most neuroscientific work on visual mental imagery is shaped by Hume's view of mental images as attenuated percepts. See, for example, the approaches focused on decoding the sensory content of mental images in early visual cortex. However, Sartre's conception is fundamentally different: for him, mental images are not an object or internal 'thing', but rather a process—a distinctive mode of representing, or an intentional attitude. This difference has important implications for how we look for neural correlates. Rather than searching for quasi-perceptual traces or image-like representations, Sartre's view suggests we should investigate the dynamic and (likely) distributed processes that support the imaginative act itself. In line with this, recent findings on functional connectivity—particularly between frontoparietal networks and high-level visual areas—offer a framework that aligns more closely with this process-oriented account. The focus is not on local, static representations, but on temporally coordinated, network-based activity patterns that enable the imaginative attitude.

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Competing interests

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