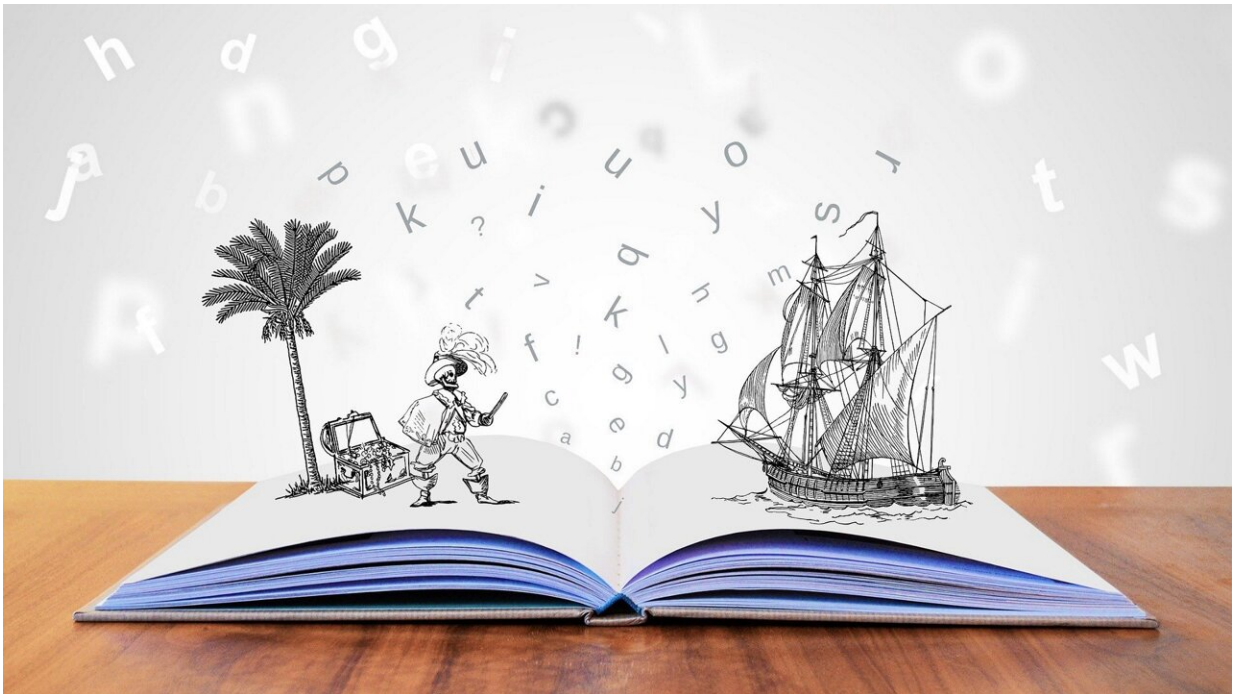


A decade of aphantasia research: What we've learned about people who can't visualize

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People who can't visualize an image in their mind's eye are less likely to remember the details of important past personal events or to recognize faces, according to a review of nearly 10 years of research.

People who cannot bring to mind [visual imagery](#) are also less likely to experience imagery of other kinds, like imagining music, according to

new research by the academic who first discovered the phenomenon.

Professor Adam Zeman, of the University of Exeter, first coined the term aphantasia in 2015, to describe those who can't visualize. Since then, tens of thousands of people worldwide have identified with the description. Many say they knew they processed information differently than others but were unable to describe how. Some of them expressed shock on discovering that other people can conjure up an image in their mind's eye.

Now, Professor Zeman has conducted a review of around 50 recent studies to summarize findings in a field that has emerged since his first publication. The paper is titled "[Aphantasia and hyperphantasia—exploring imagery vividness extremes](#)" and is published in *Trends in Cognitive Sciences*.

Research indicates that aphantasia is not a single entity but has subtypes. For example, not everyone with aphantasia has a poor autobiographical memory or difficulty in recognizing faces, and in a minority of people, aphantasia appeared to be linked to autism. People who cannot visualize are more likely to have scientific occupations. Unexpectedly, although people with aphantasia can't visualize at will, they often dream visually.

Professor Zeman's review provides evidence that whether people have aphantasia or hyperphantasia—a particularly vivid visual imagination—is linked to variations in their physiology and neural connectivity in the brain, as well as in behavior. For example, listening to scary stories alters [skin conductance](#) in those with imagery, meaning people sweat—but this does not occur in people with aphantasia.

Aphantasia is thought to affect around 1% of the population, while 3% are hyperphantasic. These figures rise to around 5% and 10% with more generous criteria for inclusion. Both aphantasia and hyperphantasia often

run in families, hinting at the possibility of a genetic basis.

Professor Zeman, who now holds honorary contracts at the universities of Exeter and Edinburgh, said, "Coining the term 'aphantasia' has unexpectedly opened a window on a neglected aspect of human experience. It is very gratifying that people who lack imagery have found the term helpful, while a substantial surge of research is shedding light on the implications of aphantasia.

"Despite the profound contrast in subjective experience between aphantasia and hyperphantasia, effects on everyday functioning are subtle—lack of imagery does not imply lack of imagination. Indeed, the consensus among researchers is that neither aphantasia nor hyperphantasia is a disorder. These are variations in human experience with roughly balanced advantages and disadvantages. Further work should help to spell these out in greater detail."

More information: Aphantasia and hyperphantasia – exploring imagery vividness extremes, *Trends in Cognitive Sciences* (2024). [DOI: 10.1016/j.tics.2024.02.007](https://doi.org/10.1016/j.tics.2024.02.007)

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