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Viewpoint

The potential risks of opening the mind's eye with psychedelic therapies

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ABSTRACT

Psychedelic therapy is on the rise, as its legalisation is ongoing in multiple countries. Here, we write a note of warning regarding recent reports that people with aphantasia (a blind mind's eye) have acquired visual mental imagery after using psychedelics. While the prospect of gaining, or indeed increasing, visual mental imagery is appealing to many, strong mental imagery has been associated with a range of mental conditions. How 'switching on' visual imagery in people with aphantasia or increasing its strength in neurotypical individuals might impact mental health remains unknown. We advocate for increased awareness of this issue and its ethical implications, particularly regarding informed consent.

1. Psychedelic therapy

Psychedelic therapy or psychedelic-assisted therapy is a form of therapeutic intervention that involves the controlled and supervised use of psychedelic substances, such as psilocybin, MDMA, LSD, or ketamine, in conjunction with psychotherapy, counselling and other experiential techniques. These therapies are aimed at individuals who are struggling with a range of mental health conditions, and they are conducted in a structured and supportive clinical therapeutic setting.

Psychedelic therapy emerged as a field in the '50s, shortly after LSD was first synthesised. Before its prohibition in the late '60s, psychedelic therapy showed promising potential to treat a range of conditions, such as substance abuse, which was documented in hundreds of scientific articles (Phelps, 2017). Thanks to the decriminalisation of the use of psychedelic drugs for medical use across many countries, psychedelic therapy made a comeback in the '90s, and it has since shown promising results in treatment-resistant depression, post-traumatic stress disorder (PTSD), anxiety, and substance disorders (Carhart-Harris & Goodwin, 2017; Luoma et al., 2020). Most psychedelic therapies use serotonin 5-HT2A agonists like LSD (lysergic acid diethylamide), psilocybin, mescaline, and DMT (dimethyltryptamine). However, substances that act on other neurotransmitters are also employed, such as MDMA (methylenedioxy-methamphetamine), which targets dopamine and noradrenaline receptors, and ketamine, functioning on glutamate NMDA receptors (Tupper et al., 2015). Nowadays, psychedelic therapy is not

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only in clinical trials but becoming a tool in common practice, with several practitioners offering these therapies around the world, including in Australia (MDMA and Psilocybin), Canada (MDMA, Psilocybin and Ketamine), USA (Ketamine), and the EU (Esketamine), as of 2025 (EMA, 2025; FDA, 2025; Government of Canada, 2025; RANZCP, 2025), with more countries likely to join in the future. Since 2018, investment in psychedelic research and development has surged due largely to the FDA breakthrough therapy designation for clinical trials. In 2021, companies invested $730M, with around $4M invested by the NIH over the same period (Siegel et al., 2023).

2. Psychedelics and aphantasia

Along with the aforementioned benefits, as with other pharmacological interventions, psychedelic therapy has known side effects: psychosis, bad 'trips', psychological dependence, and physical disturbances, among others (Modak et al., 2019; Rucker et al., 2018). Another surprising potential side effect might be *unlocking the ability to form mental images for people who were unable to do so*.

People with aphantasia cannot visualise objects, people, places, or memories, and they also recall personal memories with fewer details and vividness (Dawes et al., 2022; Pearson, 2019; Zeman et al., 2015). Recently, two case studies (one published and one pre-print), along with several anecdotal reports (Reddit, 2023), have documented that people with aphantasia were able to gain a new capacity to visualise after a single dose of ayahuasca (dos Santos et al., 2018) or psilocybin (Rebecchi, 2023). It is still unclear how common this 'side effect' is, and whether these case studies can be replicated in controlled settings. For example, the imagery ability of these case studies was not measured prior to psychedelic usage, and the exact nature of these new imagery abilities is not clear. However, if this phenomenon turns out to be common, it would have important implications for the expected effects for patients undergoing psychedelic therapy, as well as for the understanding of the mechanisms behind aphantasia and mental imagery.

While the case studies describe positive self-reported outcomes both during and immediately after the experience (dos Santos et al., 2018) as well as within a year post-experience (Rebecchi, 2023), it is important to stress that there could be potential negative effects associated with the gain (in the case of aphantasia) or enhancement (in neurotypical population) of visual mental imagery. Note that these reports involve recreational use of psychedelics, for which there is little to no practical control possible. However, their use in psychedelic-assisted therapy should involve full disclosure of all potential risks, as explored below. For instance, there may be individuals with aphantasia undergoing psychedelic treatment who do not wish to develop visual imagery. Conversely, other individuals with aphantasia may want to develop imagery but may not be aware of the potential relationship to some mental illness symptoms. In either case, the possibility that the treatment may result in the ability to visualise and the potential downsides of this outcome should be disclosed and discussed before undertaking psychedelic therapy.

3. Strong visual imagery and mental health

While the prospect of gaining or increasing visual mental imagery can have positive aspects, such as acquiring a new capability, it can also involve unexpected risks.

The evidence suggests that visual imagery is an emotional amplifier of thoughts (Holmes et al., 2008; Wicken et al., 2021). This amplification effect is thought to be responsible for the link between strong mental imagery and psychological conditions. Strong visual imagery and negative psychological outcomes seem to be related, as the former facilitates the emergence of distressing and unwanted emotional content in the form of intrusive thoughts (Pearson, 2019; Pearson et al., 2015). Indeed, strong imagery is associated with an increased risk of PTSD flashbacks (Morina et al., 2013; Russell & Mussap, 2023), depression and suicidal flashforward thoughts (Holmes et al., 2007; Weßlau & Steil, 2014), as well as cravings in the form of anticipatory reward thoughts (Andrade et al., 2012). While this is a rapidly evolving field and more research is needed, preliminary results from our lab seem to support these results, indicating that people with stronger visual imagery tend to have more intrusive thoughts and memories (Keogh et al., 2023), cravings and maladaptive daydreaming (unpublished data) when compared to people with aphantasia.

Visual mental imagery has also been associated with psychiatric disorders and neurological conditions. Research has shown that strong visual imagery is a marker of schizophrenia (Oertel et al., 2009; Sack et al., 2005), and is associated with hallucinations in patients with Parkinson's disease (Shine et al., 2015). However, the causal link between strong imagery and psychiatric disorders and neurological conditions has not been established. In other words, some people with psychiatric disorders, such as schizophrenia, could have stronger imagery as a result of the disease instead of strong imagery being the cause of the disorder.

On the other hand, there's evidence showing that the negative psychological effects of imagery and its accompanying intrusive thoughts can be prevented by manipulating imagery. Using interventions aimed at precluding visual imagery shortly after a traumatic event (e.g., playing Tetris), early trauma symptoms can be relieved, thus suggesting a causal link between visual imagery and the onset of intrusive memories (Asselbergs et al., 2023; Astill Wright et al., 2021).

Despite the association between strong imagery and negative mental outcomes, imagery can also be used as a therapeutic tool. For example, imagery rescripting is a technique used in cognitive-behavioural therapy aimed at modifying distressing or negative thoughts associated with a traumatic memory by creating a more positive association with those memories, by actively visualising alternative scenarios (Arntz, 2012). Imagery rescripting is effective at reducing symptoms of PTSD, anxiety, and major depression, among other conditions (Morina et al., 2017). In addition, meditation interventions and related guided imagery techniques have shown a range of positive results, from reducing blood pressure (Manikonda et al., 2008) to stress management (Bigham et al., 2014) and reducing symptoms of depression (Costa & Barnhofer, 2016). Therefore, psychedelically inducing

imagery in people with aphantasia could potentially result in the therapeutic benefits of imagery therapies, given that potential risks are disclosed and mitigated. Indeed, combining imagery rescripting with psychedelic therapy has been endorsed for the treatment of OCD (Maloney et al., 2024). On the other hand, a clinical trial combining psilocybin and imagery rescripting to treat self-harm is currently in progress (NIH, 2025). If the combination of imagery rescripting and psychedelics becomes common practice, there is a potential risk that this could unintentionally trigger imagery in patients who have not experienced it before or amplify imagery in neurotypical patients.

All in all, while the prospect of gaining or increasing mental visual imagery via consuming psychedelics could have some positive effects, such as new capabilities and imagery-mediated therapeutic benefits, the evidence so far suggests that it also has the caveat of putting individuals at a higher risk of developing some mental disorders involving intrusive thoughts and memories.

4. Potential mechanisms of psychedelic imagery acquisition

Why would psychedelics *switch on* imagery in those with aphantasia? In-vitro studies have shown that psychedelic serotonin agonists induce neuroplasticity (neuronal growth) via the activation of *intracellular* 5-HT2A receptors (Vargas et al., 2023). The diverse neuroplastic effects of psychedelics, from molecular to cellular changes, have been verified by a meta-analysis examining both *in vitro* and *in vivo* studies, showing that neuroplasticity changes can be detected after only one psychedelic dose (de Vos et al., 2021).

Further, several studies have shown that psychedelics reconfigure large-scale brain networks, which affects how different parts of the brain communicate. Neuroimaging studies in humans have shown that psychedelics elicit changes in functional connectivity, a measure of how closely together different brain regions work. Several studies have shown that this reconfiguration involves the disruption of connectivity within networks that usually work closely together (such as the default mode and sensorimotor networks), while increasing connectivity among networks that are normally more segregated (Carhart-Harris et al., 2014; Gattuso et al., 2023; Girn et al., 2023; Madsen et al., 2021; Müller et al., 2018). In addition, psychedelics seem to increase the functional repertoire in the brain, in the form of activity entropy, a measure of complexity that is thought to play a crucial role in consciousness (Carhart-Harris et al., 2014; Herzog et al., 2023; Tagliazucchi et al., 2014; Varley et al., 2020). This increase in entropy could enable new states of consciousness, potentially leading to the acquisition of imagery for individuals with aphantasia. More specific to visual imagery, studies have shown that serotoninergic psychedelics increase activity in the visual cortex (Carhart-Harris et al., 2016; Roseman et al., 2016), which could be related to the gain-of-function in this sensory modality. Furthermore, a recent effective connectivity study has shown that psilocybin alters visual network dynamics by increasing top-down feedback and self-inhibition in visual areas, a mechanism linked to the vivid eyes-closed imagery of psychedelic experiences (Stoliker et al., 2024).

Recent studies have shown that the neural basis of aphantasia involves abnormal long-range connectivity patterns, thus supporting the idea of connectivity changes behind psychedelic-mediated imagery restoration. These studies have shown reduced functional connectivity between parts of the fusiform cortex and frontoparietal regions (Liu & Bartolomeo, 2025), as well as altered connectivity between the hippocampus and the occipital cortex (Monzel et al., 2024) in people with aphantasia compared to controls.

Together, the evidence indicates that the changes in large-scale brain dynamics induced by psychedelics promote changes in inter-area communication, resulting in a higher degree of flexibility of information processing, with functions that are more diverse and mingled, which in turn enhances their ability to share information among areas (Girn et al., 2023). This could promote functional connections between the visual cortex, memory and executive areas, restoring altered connectivity patterns and, consequently, visual imagery in individuals with aphantasia.

Another possible mechanism for the gain of imagery in those with aphantasia, which could act in combination with the abovementioned mechanisms, is related to attentional effects derived from the acute experience of imagining under the effects of psychedelics. In other words, paying attention to visual imagery during psychedelic states would reveal what imagery is and what to focus on once the psychedelic experience is over. This would only work if there were residual capacity for visual imagery in people with aphantasia, which is usually not noticeable.

While the dramatic psychedelic-driven changes in brain function from molecular to large-scale brain networks and cognition are consistent with the gains reported in visual mental imagery for people with aphantasia, more research is needed to verify and eventually understand the mechanisms behind these reports.

5. Conclusions

Psychedelic therapies are still an evolving field, and research is ongoing to better understand their efficacy, safety, and optimal therapeutic protocols. The surprising reports of gaining imagery in people with aphantasia raise some concerns before administering these protocols. Also, there is the possibility of enhancing imagery strength in neurotypical populations, which could also increase their risk of developing certain mental conditions.

This short article aims to bring this to the awareness of those running the psychedelic studies, delivering the treatments and, of course, to the individuals undergoing treatment themselves. While direct evidence is still lacking and larger-scale studies are needed, the current data and theory suggest that the sudden onset of visual imagery in individuals who have not previously experienced it could result, for some, in challenges involving intrusive thoughts and anxiety. Ultimately, whether to undergo psychedelic treatment and whether someone would like to develop visual imagery or not is a personal choice. Our main contention is that all potential

outcomes, whether good or bad, should be explained so that individuals can make a proper, informed decision.

CRediT authorship contribution statement

Roger Koenig-Robert: Writing – review & editing, Writing – original draft, Conceptualization. **Rebecca Keogh:** Writing – review & editing, Conceptualization. **Joel Pearson:** Writing – review & editing, Funding acquisition, Conceptualization.

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