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Dream hacking: Altering the dream world

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Four years ago, the scientific community was thrown into a frenzy: the beer conglomerate Coors had just launched what it called the first large-scale dream incubation campaign in history, in an attempt to hijack attention ahead of that year's Super Bowl.

What did it involve? Well, Coors asked participants to watch a clip filled with subtle, beer-themed messages before falling asleep, in the hope that it would influence their dreams.
While the campaign was more of a marketing gimmick than a serious experiment, it still raised the alarm in the scientific community. Was this the beginning of dream hacking? Had we taken one step closer to the reality depicted in the 2010 hit sci-fi film Inception?

It turns out that dream manipulation isn't just the stuff of science fiction – it's increasingly becoming a reality. Dream research shows that applying sensory cues like scents, lights, or touch during sleep can alter the content of dreams – a practice known as dream engineering.

While still mostly confined to the scientific domain, the possibility of bringing dream engineering outside research settings raises serious ethical questions. If we can change or manipulate what people dream about, should we? And if so, under what circumstances and for what purposes? What sorts of safeguarding and protective measures should be in place to prevent misuse?

Coors' campaign may have seemed like a one-off stunt devised to boost beer sales, but it tapped into something bigger, revealing the state-of-play in the growing dream technology research field. Namely, that some tech companies are already developing devices designed to influence the dreaming mind. If this trend continues, dream hacking might soon become a reality, offering corporations access to the last private frontier: the dream world.

One example of this emerging dream-influencing technology comes from the Silicon Valley startup Prophetic AI. The company is currently developing a device designed to make lucid dreaming achievable for everyone.
Lucid dreams are a unique type of dream where you realise that you are dreaming. In some cases, you might even gain the ability to change the plot, almost like creating your own private virtual reality.

Lucid dreams are rare, but research has shown that certain cognitive techniques like reality testing can increase your chances of experiencing them. But what if you could experience them on demand? Scientists have long attempted to induce lucid dreaming with external methods – usually by means of headbands that emit flashing lights while you are in REM sleep (the phase of sleep when you usually dream). The lights intrude into your dreams as cues to remind you that you are dreaming. However, these techniques require time, patience, and training.

Prophetic AI says it is working on a way to shortcut the induction process. Their prototype device, Halo, is a wearable headband that stimulates the areas of the brain responsible for lucidity. It uses a combination of AI and targeted ultrasound. While the technology builds upon neuroscientific research and appears to be safe, an important question remains: should we be concerned about humans having the ability to trigger lucid dreams on demand?

Though the evidence is still limited, some studies suggest that frequent lucid dreaming may have psychological implications. Techniques to induce lucid dreaming — whether through external devices or mental training — might not be suitable for everyone. For instance, most lucid dreams are not controllable, meaning we can't always change their narrative or act freely within them. When negative emotions are added into the mix, they can result in higher levels of distress and even certain psychopathological symptoms. Other studies have shown that lucid dreaming might increase delusional thinking in individuals who already have tendencies for dissociation.

Although most lucid dreams are described as positive experiences, they can also be unpleasant or even terrifying. Sometimes, they turn into 'lucid nightmares' — dreams in which the person is aware they are dreaming but unable to change the plot or wake up. Lucid nightmares have been found to be more likely to occur in frequent lucid dreamers, but also affect those who experience them spontaneously.

Finally, while more research is still needed, we must ask whether direct induction of lucid dreaming — especially through brain-stimulation devices like Halo — could affect sleep quality. After all, such devices are designed to activate certain areas of the brain that are usually inhibited during sleep, such as the prefrontal cortex — the part of the brain associated with meta awareness. This could have knock-on effects not only on sleep, but also on how we feel and function during the day.

So far, the above considerations have focused largely on the risks of manipulating our dreaming mind and how it might impact our mental health and well-being. But there are broader moral and social questions to consider too. What, ultimately, do we need these technologies for?

In a recent interview, Eric Wollberg — CEO of Prophetic AI – casually suggested that lucid dreams could be used by workers for problem-solving, hinting at the possibility of extending our working hours into sleep. Other companies appear to share this vision. REMspace, another Silicon Valley company, is pushing the boundaries of dream research by exploring ways to capitalise on the dream world. In one experiment, participants created musical rhythms which were reproduced in real-time on a computer device using electromyography (EMG). In another, participants controlled a virtual avatar of a car while lucid dreaming.

In a capitalist society where we are pushed and praised for being constantly producing, it's not hard to imagine how devices like Halo, coupled with research suggesting lucid dreams can bridge into the waking world, may invite exploitation of our dreamscapes, rather than being used for the improvement of our well-being.

Lucid dreams are remarkable experiences that offer unique insights into the mind. They can serve as spaces for creativity and self-reflection. Non-lucid dreams, too, hold value for personal growth and self-exploration. Thus, the cultivation of dreaming, in all its forms, as well as its examination should be promoted. However, outside carefully monitored research environments, the active manipulation of dreams — especially without sufficient training, knowledge, or oversight — should be approached with caution. Especially when such efforts are driven by big tech companies.