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Deepfake videos create false memories – but so do fake articles

After watching a deepfake movie clip that inserted Charlize Theron into *Captain Marvel*, 70 per cent of people thought the movie remake actually existed.

By [Jeremy Hsu](#)

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▲ **People remember nonexistent film remakes after seeing deepfakes**

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Deepfakes that insert an actor into [movies](#) they never starred in are convincing enough to create false memories of Hollywood film remakes that never existed. But researchers also found that deepfakes do not have a uniquely powerful influence on people's minds compared to the humble written word.

“We've done a couple of projects trying to establish how much worse deepfakes are than anything else in terms of memory and misinformation,” says [Gillian Murphy](#) at University College Cork in Ireland. “And we're really finding that they're not that much worse than anything else.”

Murphy showed more than 400 undergraduate students both [deepfake videos](#) and short text descriptions of movies that never existed. She and her colleagues used four deepfake clips from imagined film remakes uploaded to YouTube or Reddit. These included a version of *The Shining* with Brad Pitt and Angelina Jolie, *The Matrix* starring Will Smith as Neo, Chris Pratt as Indiana Jones in scenes from the original trilogy and *Captain Marvel* with Charlize Theron instead of Brie Larson as the titular superhero.

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The researchers did not immediately tell survey participants that the fake film remakes were not authentic Hollywood productions, in order to better understand how deepfakes could impact the memories of unsuspecting viewers. They also included real film remakes in the mix for comparative purposes.

Each participant was shown text descriptions of three films and deepfake videos alongside text for another three – every person was presented with four real and two fake films in random order.

Next, researchers asked if participants had seen the fake film remakes before. Any participants who claimed to have previously seen the entire film, seen clips or trailers or heard of the film were categorised as having a false memory.

The deepfakes prompted 75 per cent of viewers to falsely remember the [nonexistent Captain Marvel remake](#), and made about 40 per cent of viewers falsely remember the other three fake film remakes. But simple text descriptions of the nonexistent films had similar results – after reading them, 70 per cent of people had [false memories](#) of a *Captain Marvel* remake and about 40 per cent falsely recalled the other three.

Chris Pratt is Indiana Jones [DeepFake]



Whether they viewed the deepfakes or the fake film descriptions, people sometimes even remembered the fake film remakes more fondly than the original films. For example, 41 per cent of people described the nonexistent *Captain Marvel* starring Theron as being better than the original, and 13 per cent described Pratt's Indiana Jones as better than the original films starring Harrison Ford.

[Elizabeth Loftus](#) at the University of California, Irvine, says the reason text descriptions proved equally powerful in distorting people's memories may be that they allow recipients' to imagine the fake films for themselves.

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Article amended on 21 July 2023

We corrected the percentage of people who thought the deepfake remakes actually existed

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