



## "Being Sigmund Freud"



**...and giving oneself excellent advice: embodiment modifies thought process**

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The illusion of being in another body affects not only our perception (as is already known) but also our way of thinking. Thanks to virtual reality, some subjects embodied Sigmund Freud and proved better at giving themselves psychological advice compared to when they were simply themselves.

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The volunteers participating in Sofia Adelaide Osimo's experiments may have felt as if they were



inside a screenplay by Charlie Kaufman, the author (and winner of the Grand Jury Prize at the recent Venice Film Festival) of “Being John Malkovich” and other bizarre films (“Eternal Sunshine of the Spotless Mind”, “The Orchid Thief ”...). Just as the film characters catapulted themselves (literally, see to believe) into the famous actor’s body, the subjects in Osimo’s experiment, after asking for advice on a personal psychological problem, replied to themselves embodying Sigmund Freud. “And when they embodied the Viennese psychoanalyst, their advice was much more effective than when they were plainly talking to themselves”, explains Osimo, a SISSA researcher, who carried out this work in collaboration with colleagues of the EVENT Lab of the University of Barcelona. Their research paper has just been published in *Scientific Reports*.

To create the illusion of being in someone else’s body (perceiving it as our own) Osimo relied on “immersive virtual reality”. Previous studies have shown this type of illusion to cause changes in perception, but Osimo and colleagues wanted to verify whether embodiment could also affect thought processes: does being someone else make us think differently? Apparently it does.

In the experiment, the volunteers wore very sophisticated VR (virtual reality) devices (headset and sensors) and were immersed in a virtual room where there was a duplicate representation of themselves and Sigmund Freud. The subject could alternately be in the avatar body representing themselves or in Freud’s body. The movements of the avatars, in the experimental condition, were perfectly synchronized with the subject’s real movements, and this produced a powerful illusion of embodiment.

In the first phase of each session the subject was himself and described a psychological problem to Freud. Then he immediately “jumped” into Freud’s body and replied to himself by giving advice. The subject then returned to his own body to listen to Freud’s voice (which was the same as the subject’s but with a lower pitch so as not to cause confusion). The exchange could go on for as many turns as the subject wished.

In another experimental condition, Freud was not present and the subject asked and replied always embodying himself, similarly to when we talk to ourselves as we mull over a problem.

“The results are clear: giving oneself advice is always effective, but doing it as Sigmund Freud works better” explains Osimo. “The experiments contained a further control condition where the avatars’ movements were not synchronized with the subjects’ real movements. This considerably reduced, if not completely eliminated, the illusion of embodiment. In this condition the effect of the dialogue with oneself – or with Freud – was nullified, which further confirms that it is the illusion that modifies the thought process”.

Embodying someone whom we consider authoritative for some reason can therefore modify the processes we use to solve problems. And Freud, also in the light of Osimo and colleagues’ findings, is universally considered authoritative in psychological counselling. “Before proceeding with the experimental phase, we evaluated the psychoanalyst’s authoritativeness by means of questionnaires administered to a sample from the population from which the subjects selected



for the experiments were drawn. Freud was not only found to be very authoritative and well-known, but his image proved also to be highly recognizable and prototypical”.

“We have demonstrated for the first time that embodiment is also effective on high-level cognitive processes, such as problem solving and decision making”, concludes Osimo. “These findings also open up interesting scenarios on the front of psychological counselling: could virtual reality be used to this end some time in the future?”.

#### USEFUL LINKS:

- Original Paper on Scientific Reports: <http://goo.gl/VKE1S3>

#### IMAGES:

- Credits: EVENT lab, UB

#### VIDEO:

- Watch an experiment’s example: <https://goo.gl/Bc57AS>

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