

Avatars: Changing Behavior for Better or for Worse?

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CAN AVATARS AND AGENTS be used to facilitate behavior change? Although we are still studying exactly how this happens, so far, the answer appears to be a qualified “yes.” For example:

- In a randomized controlled trial, young adults aged 18–25 years with depressive symptoms assigned to the avatar-based depression self-management intervention showed significant reduction in depressive symptoms at 3 months compared to the attention control group. Participants received tailored behavioral feedback after practicing communication skills with virtual healthcare providers and a virtual health coach in a virtual primary care environment.¹
- In a study of a convenience sample of older people with a mean age of 69 years, embedding a virtual agent that provided support in an online retail store led to increased perception of social support, trust, and patronage intention. Analysis of mediating factors further revealed that the virtual agent’s effect on trust is mediated by the perception of social support, and on patronage intentions is mediated partly by trust and by perceived risks.²

What is the difference between an avatar and an agent, and does it matter which is used? An agent is an acting virtual entity that may not be controlled by its human operator, while an avatar is a virtual representation of a human being, completely controlled by the person it represents. A recent study showed that for both agents and avatars, the behavior of the entity “is crucial for the emergence and quality of social effects.”³ People’s beliefs also affect their reactions to agents and avatars, as evidenced by a study in which participants believed that a peer counselor was either an agent (computer algorithm) or an avatar (another person). A smiling face increased participants’ empathy and positive reaction to the agent but decreased them for the avatar, suggesting that level of appearance and behavior need to match. The authors admitted that perhaps the digital smile wasn’t realistic enough and therefore didn’t meet participant expectations for avatars.⁴

While rendering and behavior of the avatar may be important, avatar point of view (POV) may not matter in some situations, as evidenced by the study of 41 undergraduate students aged 18–23 years using a head mounted display, for which first person (up close) or third person (at a distance) POV made no difference to the students’ tolerance of cold water pain while immersed in the virtual environment, although greater presence was reported in the first person condition.⁵ However, for a task that involved communicating

by gestures in a virtual environment, researchers found that third person POV in a self-animated avatar for both the giver and receiver of communications enabled people to move better and perform better.⁶

Educators are discovering the use of gesture-based avatars to facilitate behavior change. Sixty-four 12–13 year old students used either Skype or AvatarKinect to perform a brainstorming task and a negotiation task. User satisfaction was the same in both conditions, but the avatar users reported more positive changes in their perceptions of their partner. Interestingly, the Skype users produced a greater quantity of ideas in the brainstorming task, but the avatar users produced higher quality ideas.⁷

Advertisers are eager to learn how to use avatars to increase consumers’ purchase intentions. A recent study of more than 1,000 20–30 year olds in Taiwan suggests that different personalities prefer different types of online advertising, specifically, high sensation seekers and low need for cognition viewers prefer 3D advertising elements with an avatar, while low sensation seekers and high need for cognition viewers prefer 2D advertising elements with self-referencing (linking consumer experiences and memories with a brand or product).⁸ While we may not yet produce the marketing avatars depicted in the film *Minority Report*, with projected customized digital ads based on the retinal scans of passers-by, facial recognition software could soon make such avatars ubiquitous—with their attendant ability to change our behavior, for better or for worse.

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