

How Augmented Reality Beauty Filters Can Affect Self-Perception

Clara Isakowitsch, School of Computer Science, University College Dublin

Introduction

- ARB filters are automated photo editing tools using artificial intelligence and computer vision to detect facial features and modify them. The majority of beauty filters alter the contours and shape of the eyes, lips, nose and face. [1]
- The embodied experience of virtually altering one's face can create confusion in people about their real bodies and lead to a kind of body dysmorphia [2]. The majority of users are teenage girls, who are at risk of developing eating disorders and body image disorders.
- Using Clark and Chalmer's Extended Mind Theory (EMT) [3] the human and the AR application could be considered a coupled system.
- The distinction between the real and virtual world may become difficult because the virtual extends the boundaries of the mind, rather than being external to it.
- This study aims to explore how AR beautification affects self-perception in contrast to retroactive photo editing.

Materials and methods

- 8 people participated of whom 4 identified as female, 2 as non-binary and 2 as male.
- Their age varied between 24 and 33.
- All participants were White and of either German or U.S. origin.
- Convenience sampling was used for recruiting the participants.
- The interviews were conducted over Zoom. The participants interacted with an ARB filter on their phone.
- Interview questions covered three dimensions: emotional experience, self-perception and selfie-behaviour.

Literature cited

- [1] Ryan-Mosley, T.: Beauty filters are changing the way young girls see themselves. *Technology Review* (2021)
- [2] Slater, M. et al.: The Ethics of Realism in Virtual and Augmented Reality. *Frontiers in Virtual Reality* 1 (2020)
- [3] Clark, A., Chalmers, D.: The extended mind. *analysis* 58 (1) (1998)

Results and Discussion

Most participants described a feeling of disconnection when looking at themselves with the filter. Many participants used words like "artificial", "alienating" or "fake" to describe their beautified self. Most participants described that the longer they looked at themselves with the filter the more real it felt since they got used to it.

Seven participants described that they were experiencing a negative emotional reaction in the moment when they switched back to their front camera after moving with the ARB filter. This reaction was stronger than after their interaction with the static beautified image. Participants used expressions like "downgrade" and feeling "underwhelmed", "disappointed" and "less enthusiastic" about their physical appearance than before interacting with the filter.



Left with ARB filter, right without filter.

Following EMT, the ARB filters could serve as visualisation aids for the mental image of the ideal or ought self. The augmented self seems real because it is not static, but reflects people's movements. The AR beauty application and the self interact, facilitate a cognitive process and therefore become a coupled system. These considerations and the results of this study led to hypothesise that AR facilitates a digital beautification process that could potentially have a greater impact on people's self-perception than retroactive photo editing.

Conclusions

Overall this research adds to existing literature exploring the impact of beauty filters on users' self-perception and body image. It calls into question current digital beautifying procedures by focusing on augmented reality that adapts to movements in real-time.

The majority of participants stated that moving with the filter affected them more than looking at the static enhanced selfie. Future studies should investigate this hypothesis that ARB filters have a greater impact on users than retroactive photo enhancement.

Questions about how movements manifest feelings of identity should be additionally explored.

