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Happiness through virtual lens: The influence of immersion, social and nonsocial contents on positive emotion induction

Katarina Pavic 1,2,3,4, Dorine Vergilino-Perez 1,2, Thierry Gricourt 4 & Laurence Chaby 1,3
1 Institut de Psychologie, Université de Paris; 2 Vision Action Cognition, Université de Paris; 3 Institut des systèmes intelligents et de robotique, Sorbonne Université; 4 SocialDream
- katarina.pavic@u-paris.fr -

INTRODUCTION

- Positive emotions have health benefits (1) and are tightly linked to well-being (2)
- Critical issue: How to foster well-being and positive experiences among users?
- Positive technology framework suggests technologies may improve users’ subjective, psychological and social well-being (3)
  - Virtual Reality (VR) appears as a suitable technology for inducing positive emotions and promoting well-being
  - But VR’s efficacy has mostly been assessed with “subjective” measures (questionnaires), more rarely with “objective” ones (e.g., physiological measures)
- Widespread use of natural (i.e., nonsocial) video contents for inducing positive emotions in VR studies, yet social contents can have an influence on induced emotions and arousal (4)

METHOD

Participants: 28 healthy undergraduate students
16 women, 12 men, 23 years ± 2.6
Non-inclusion of participants having major psychiatric and/or neurological disorders (epilepsy).

Procedure

Material: 25” screen (resolution of 1920 x 1080 pixels)
HMD Samsung Odyssey+ (110° Fov, resolution of 1440 x 1600 pixels)
Empatica E4 wristband

Stimuli: Eight 360° videos shot with a GoPro 360° camera and a tutorial video

RESULT

Effect of Media and Content on Skin Conductance Level Change (ΔSCL)

- Significant SCL decrease when watching nonsocial contents in VR compared to a screen
- Natures’ relaxing properties
- Same difference, in favor of VR, for social contents
- VR tends to elicit higher levels of physiological arousal compared to a screen

Temporal Heart Rate Change (ΔHR) in response to media and video contents

- Important HR deceleration while watching nonsocial contents in VR compared to screen presentation
- Less clear differences between VR and screen for social video contents
- Perspective: compute HR variability (HRv)

CONCLUSION

- The immersive nature of VR leads to more positive emotions and arousal on both subjective and objective levels
- Nonsocial contents seem particularly efficient on a physiological level = Natures’ well-known benefits for relaxing and restoring resources (5)
- Social contents seem to be more efficient on a subjective level for inducing positive emotions
- Potential applications: foster well-being through VR and positive emotions induction for more vulnerable and/or isolated users (e.g., elderly users)

REFERENCES