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To cite this version:
Katarina Pavic, Dorine Vergilino-Perez, Thierry Gricourt, Laurence Chaby. Happiness through virtual lens: The influence of immersion, social and nonsocial contents on positive emotion induction. Journée d’Étude Réalité Virtuelle et Domaines de la Psychologie (VR-PSY), Sep 2021, Boulogne-Billancourt, France. hal-03981847

HAL Id: hal-03981847
https://hal.sorbonne-universite.fr/hal-03981847
Submitted on 10 Feb 2023

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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)
  o Virtual Reality (VR) appears as a suitable technology for inducing positive emotions and promoting well-being
  o 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

ORDER 1
Consent
Demographic data
Visual Analogue Scale (VAS)
HADS
ORDER 2
Tutorial video
1 x per media
Habituation
2 min baseline
SAM
VAS
Presence
Pseudo-randomized order of clip watching
4 videos watched per technology

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

RESULTS

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