Being virtually with others makes me happy - The influence of immersion, social and non social video contents on positive emotion induction

Katarina Pavic, Laurence Chaby, Thierry Gricourt, Dorine Vergilino-Perez

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INTRODUCTION

- **Positive emotions** have **health benefits** [1] and are tightly linked to **well-being** [2]
- Critical issue : How to foster positive emotions and 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 fostering positive emotions.
  - But VR's efficacity 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 [4], yet social contents can have an influence on induced emotions and arousal [5]

AIM OF THE STUDY

- Investigate immersion (*i.e.*, VR vs Screen presentation) effects on positive emotion induction
- Comparing social and nonsocial (landscape) contents influence on elicited emotions
- Confronting "subjective" and "objective" measures for assessing participants' emotional states

MAIN CONCLUSION

- The **immersive nature of VR** leads to more positive emotions and arousal on both subjective and objective levels
- Differences between video contents :
  - Nonsocial contents seem particularly efficient on a physiological level = **Natures' well-known benefits for relaxing and restoring resources** [5]
  - **Social contents** lead to an **increased** subjective and physiological **arousal**
- **Potential applications**: foster positive emotions through VR in more vulnerable and/or isolated users (*e.g.*, elderly users)

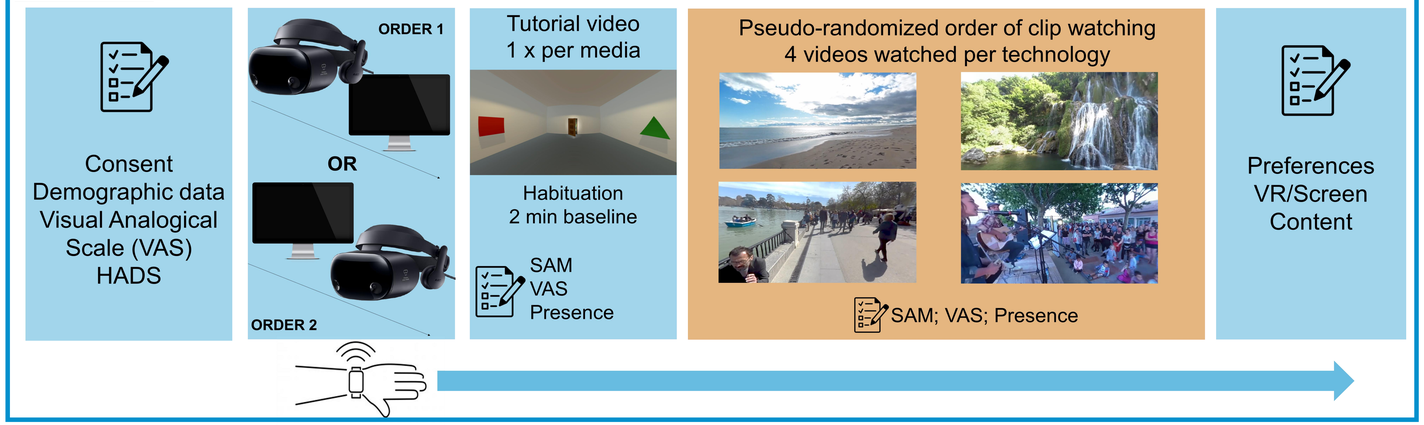
METHOD

Participants : 26 healthy undergraduate students
16 women, 10 men, 23 years ± 2.6
Non-inclusion of participants having major psychiatric and/or neurological disorders (epilepsy).

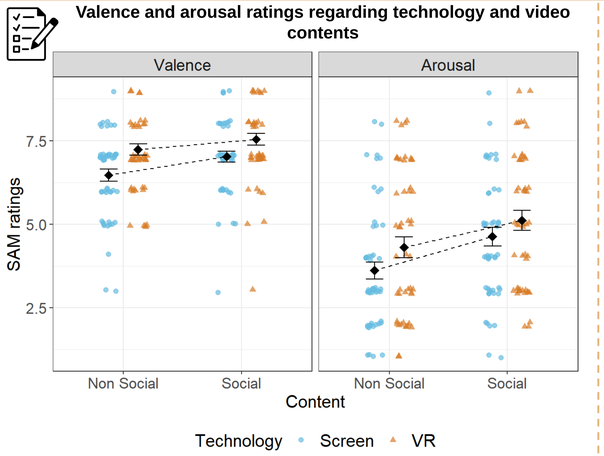
Material : 25" screen (resolution of 1920 x 1080 pixels);
HMD Samsung Odyssey+ (110° Fov, resolution of 1440 x 1600 pixels);
Empatica E4 wristband

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

Procedure



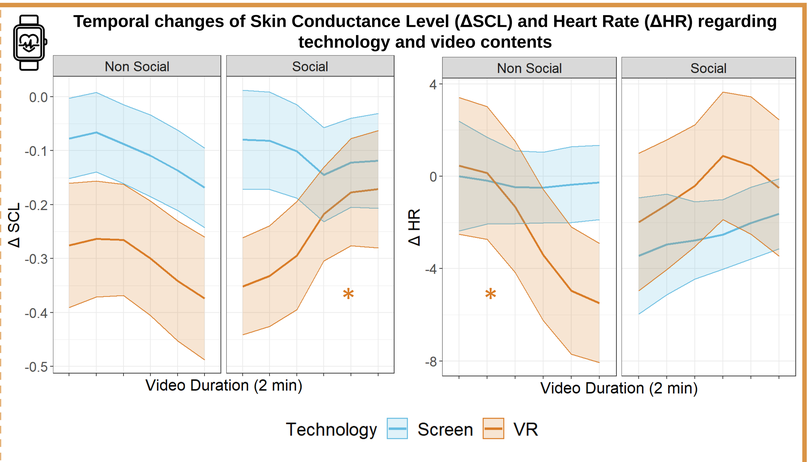
RESULTS



Main effect of technology : VR induced **more positive emotions and arousal** compared to screen presentation

Main effect of content : Social videos are perceived as **more positive and arousing than nonsocial** video contents

No Technology x Content interaction on valence or arousal ratings



Significant Technology x Content x Time interaction ($p < 0.01$) for ΔSCL
⇨ **SCL increase** when watching **social video contents in VR** compared to a screen

Significant Technology x Content x Time interaction ($p < 0.01$) for ΔHR
⇨ Important **HR deceleration** while watching **nonsocial contents in VR** compared to screen

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