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Celia Kessassi, Mathieu Chollet, Cédric Dumas, Caroline Gl Cao

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Virtually Stressed: Interaction Between Display System and Virtual Agent Behaviour

AUTHORS

Kessassi Celia, Mathieu Chollet, Cédric Dumas, Caroline G. L. Cao.

CONTACT

celia.kessassi@imt-atlantique.fr
mathieu.chollet@imt-atlantique.fr



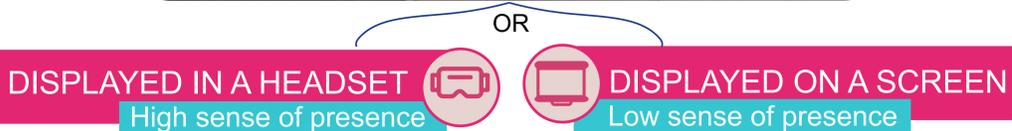
INTRODUCTION

- Applications for public speaking training immerse users in a virtual environment while they deliver a speech to a virtual audience.
- However, the factors affecting the stress level in virtual reality are not well identified.

OBJECTIVE

- Conduct an exploratory study to investigate the hypothesis:
- When the sense of presence is high, the level of stress is associated to audience attitude. While when the sense of presence is low, the level of stress won't be affected by audience attitude.

METHOD



Participants in the headset and in the screen groups complete a presentation to a positive and to a negative audience.

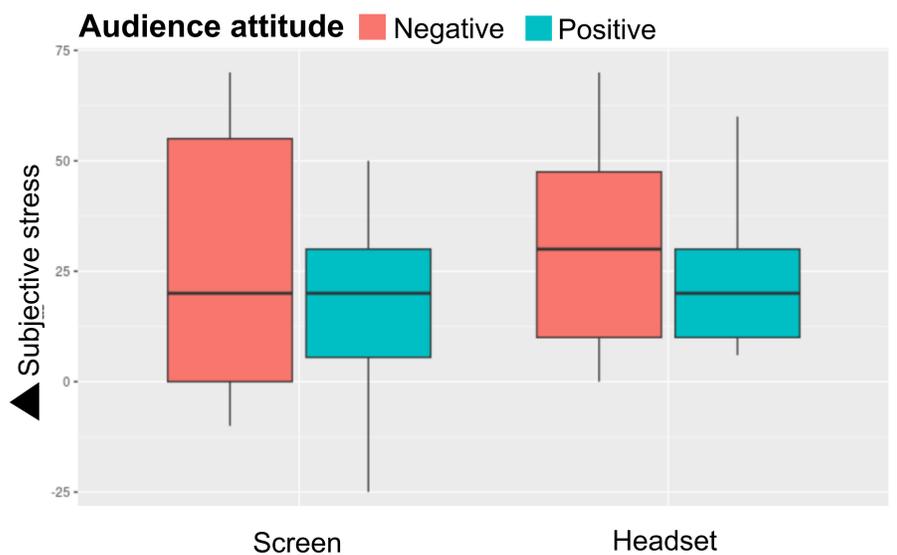
Measures include

- Heart Rate
- Skin conductance
- Video and audio recordings
- Questionnaires: Big five, BNFE, STAI, VAS, sense of presence



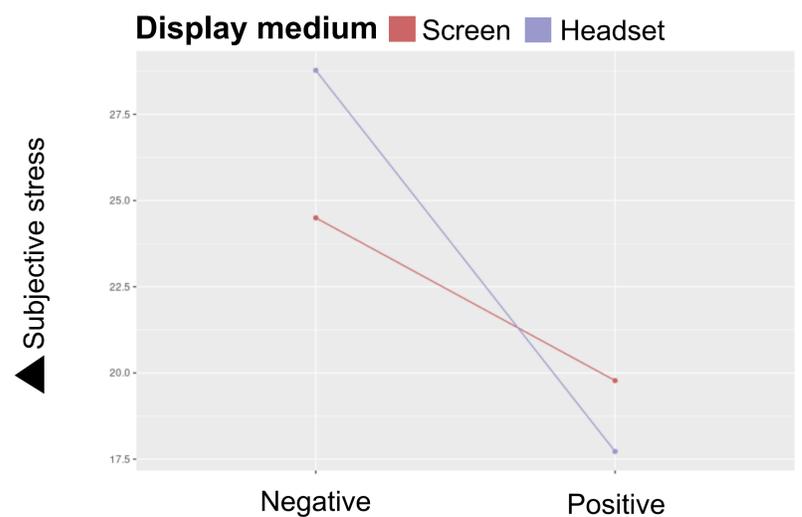
RESULTS

Subjective stress level in different conditions



- The headset group reports more stress in the negative condition compared to the positive.
- The difference between the positive and the negative conditions is more notable in the headset group compared to the screen group.

Interaction between audience attitude and the display system



- The statistical test show no interaction between the display medium and the behaviour of the audience ($p=0.337$).
- There is a main effect of audience behaviour on subjective stress ($p<0.05$).

CONCLUSION

- Although the lines intersect in the interaction graph, the p value is too large to confirm the interaction.
- Sense of presence does not explain the increase of the level of subjective stress.
- Conducting a confirmatory experiment and considering a larger sample size would probably help confirm the intuition that there is no interaction.