Can Touch Me!

Evaluating NFC and Touchscreen Interactions in Collaborative Mobile Pervasive Games

Michael Wolbert[1], Abdallah El Ali[12]

[1]University of Amsterdam, [2]Intelligent Systems Lab Amsterdam

Introduction

- We've all felt **bored or frustrated** while waiting for a bus to come, or for a traffic light to turn green

- Mobile devices may have alleviated these long waits, but they also isolate us more than ever

- To **revive social interactions**, we propose the use of Near Field Communication (**NFC**) technology in pervasive games

Question

Does **physical mobile interaction** (using NFC technology) positively influence users' perceived social presence in collaborative pervasive games?

Methods

- 'CountMeIn' sequence game developed on Android

- 2x1 within-subject design; NFC and Touch

- 4 participants; 20 min. sessions; home setting

- Data collected:
  - Game Experience Questionnaires (GEQ)
  - NASA-TLX
  - Semi-structured interviews
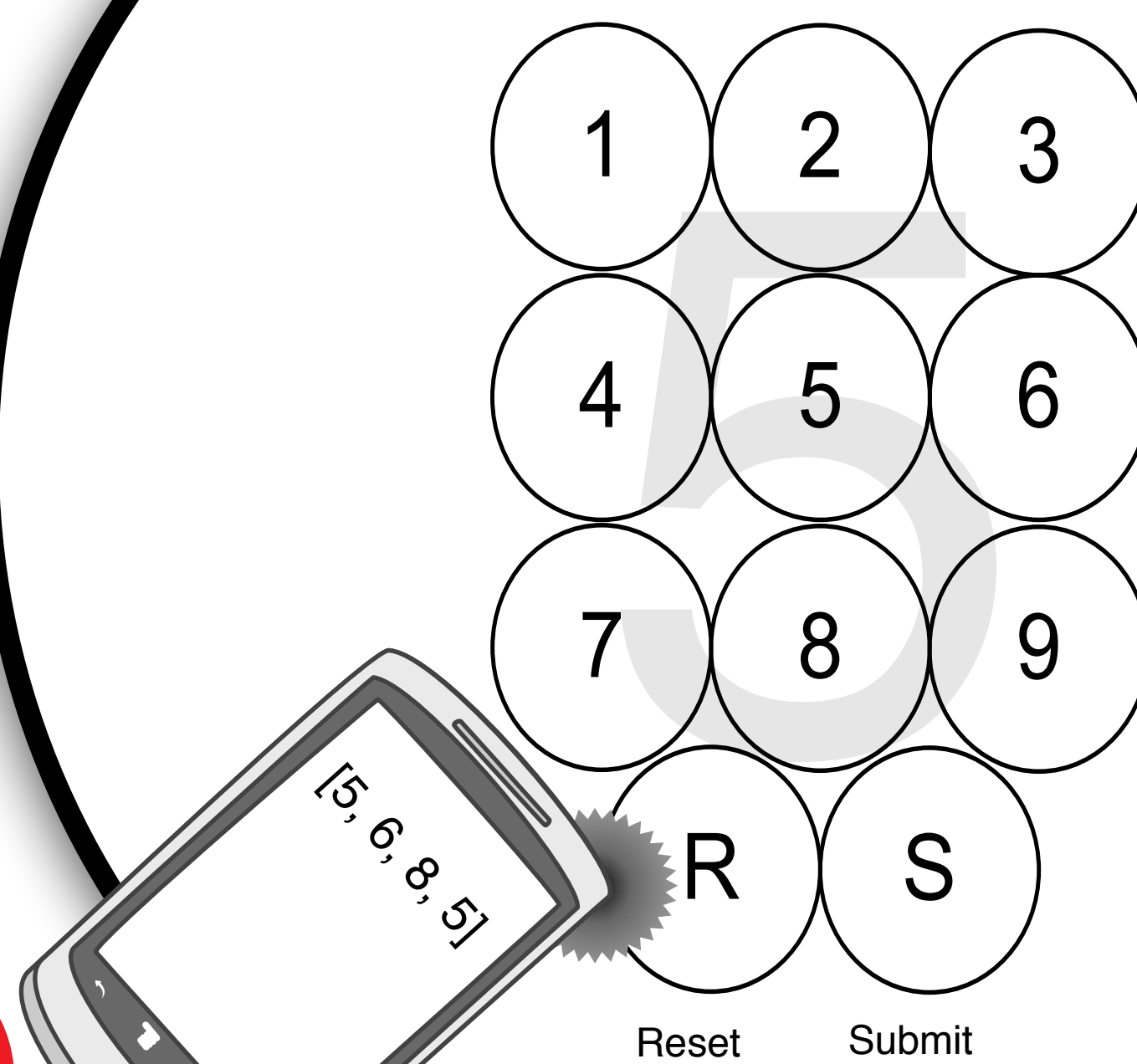 - Video Observations

CountMeIn Interaction

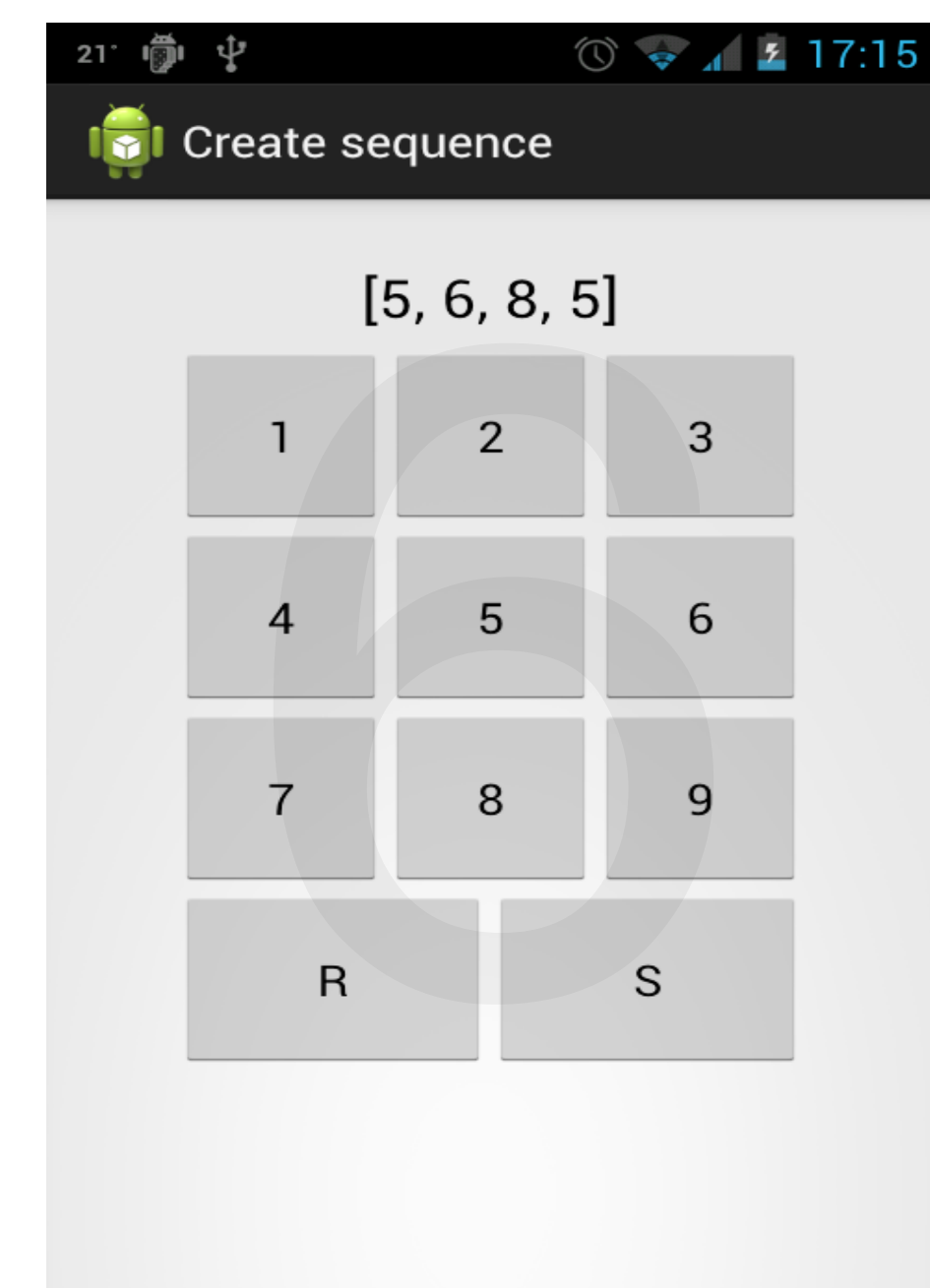2 players interacting simultaneously on NFC board

Inviting another player to join the game

NFC Version

1	2	3
4	5	6
7	8	9
R	S

Reset   Submit

Touchscreen Version

Results

*"I enjoyed the game more when I was physically interacting with the poster"*

"If two strangers would enthusiastically ask me to help them play a sequence, I would do so"

"While playing collaboratively, the touchscreen required much of my attention, and could not pay much attention to the other player"
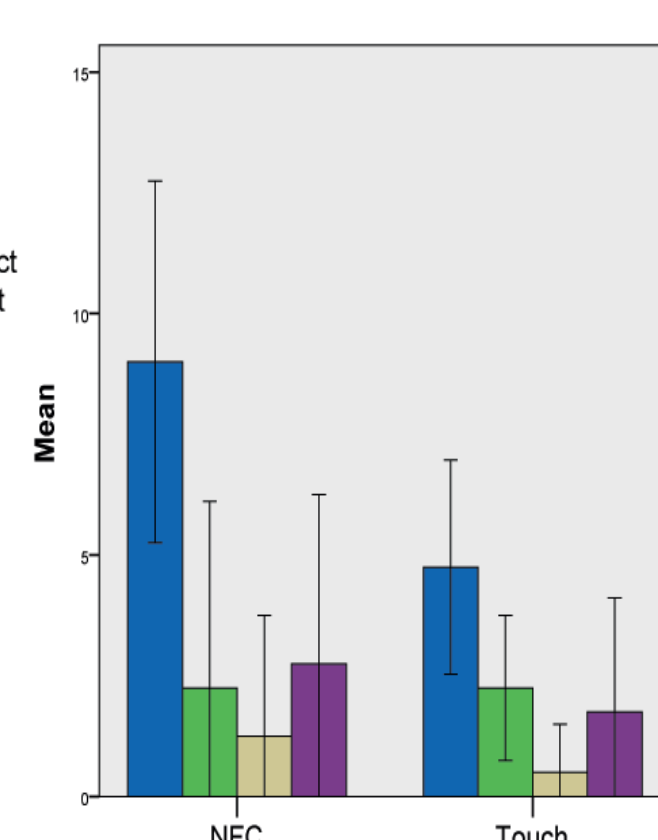
"I consider touching phones with strangers similar to casually talking to strangers"

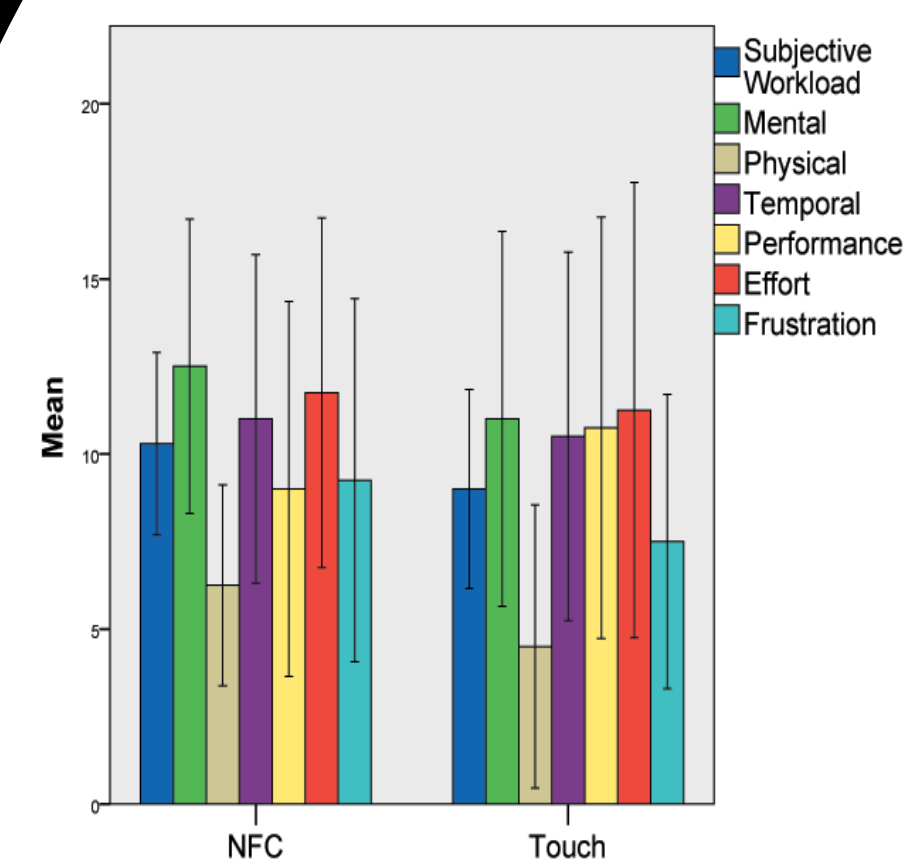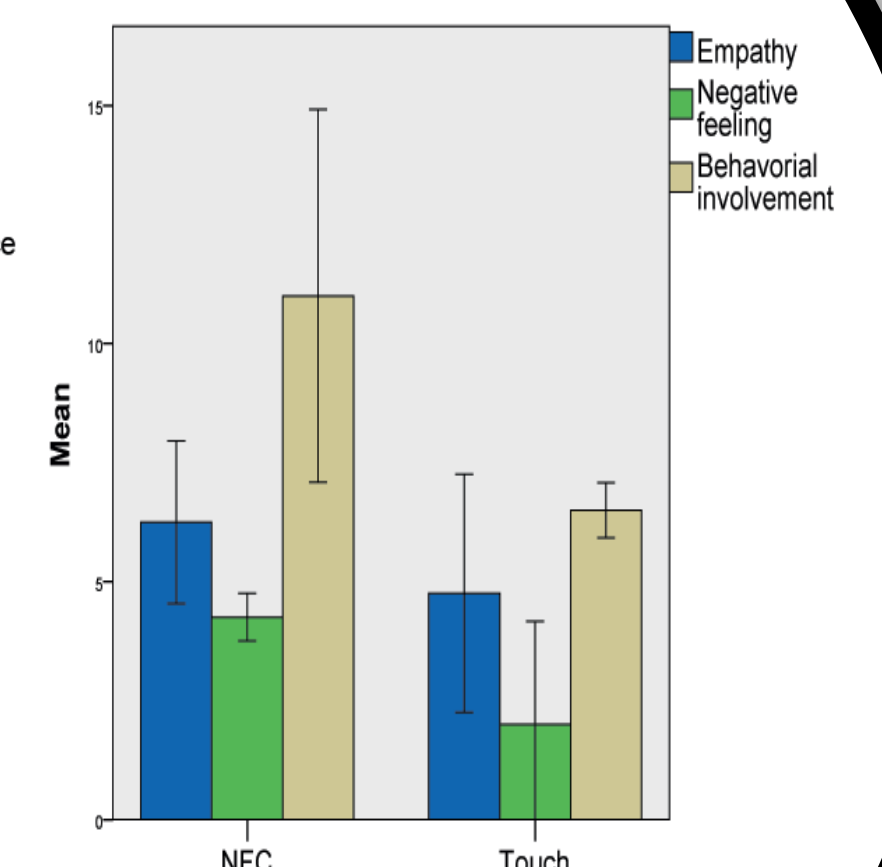*"Registration of the tags did not always work perfectly."*
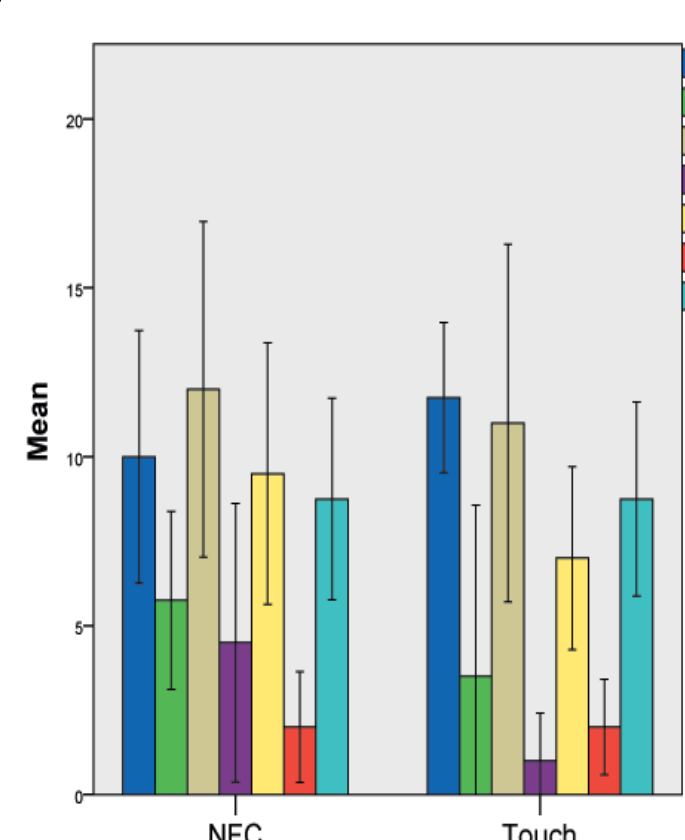
GEQ Core   GEQ

NASA-TLX   GEQ Social Presence

Conclusions

- Most participants would play in public places to kill waiting time and meet new people

- NFC-based interaction felt natural (cf., [2])

- Privacy and security issues in public settings

- **Higher perceived social presence and collaboration for NFC version**

- Pilot study shows promise of NFC for urban collaborative gaming

Touch a tag to play!

Future Work

- Improving touchscreen and NFC interfaces

- Real-world 'in-the-wild' evaluation

- Rewarding collaboration (gamification)

[1] Nandwani, A., Coulton, P., and Edwards, R. NFC Mobile Parlor Games Enabling Direct Player to Player Interaction. 2011 3rd Int. Workshop on Near Field Communication (2011), 21–25.

Michael Wolbert
michael.wolbert@gmail.com

Abdallah El Ali
a.elali@uva.nl
http://staff.science.uva.nl/~elali/