Personalization in Persuasive Technology

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Abstract. The goal of the Personalization in Persuasive Technology Workshop is to connect diverse groups of persuasive technology and behavior change researchers and practitioners interested in personalization and tailoring of persuasive technology to share their experiences, ideas, discuss key challenges facing the area, and how to move the field forward. The workshop will cover broad areas of personalization and tailoring, including but not limited to personalization models, design and evaluation methods, and personalized persuasive technologies. We welcome submissions and ideas from any domain of persuasive technology and HCI including, but not limited to health, sustainability, games, safety and security, marketing, eCommerce, entertainment and education. Workshop papers and ideas will be archived online to be accessible to the general public.

Keywords: Personalization, tailoring persuasive technology, captology, persuasion

Introduction

Given the evidence that interactive systems can strategically be designed to promote desirable behavior or motivate a change of undesirable behavior, how to design and use technology to motivate desirable behavior change have attracted the attention of researchers and practitioners alike. Over the past two decades, several persuasive technologies and behavior change support systems aimed at promoting change in different domains, including health, safety and security, environmental sustainability, energy conservation, marketing, and education have been developed. These technologies come in various forms, including games, mobile and wearable devices, web and desktop applications, robots, and other dedicated devices.

The major problem is that most existing persuasive technologies adopt the so called one-size-fits-all approach in their design and evaluation, which has been shown to be far less effective at motivating behavior change. For example, Orji et. al. in their study of the persuasiveness of various persuasive strategies show that the persuasiveness of the strategies vary depending on the gamer personality type under consideration [14, 15].

Kaptein et. al. [8] in their comparative study of the effect of tailored and contra-tailored strategies, discovered that the contra- tailored strategies (inappropriate strategies) led to strong adverse reactions that tended to increase the adoption of the unhealthy behavior that the intervention had intended to decrease. Similarly, Orji et al. [15] in their investigation of the influence of theoretical determinants on gamer types, discovered that manipulating certain determinants in persuasive technology design can demotivate behaviour in some people depending on their dominant gamer type.

The realization that the one-size-fits-all approach may not be sufficient to motivate behavioral change has led to a growing interest in finding ways of personalizing and tailoring persuasive technology to various user characteristics. In line with this, research has shown that personalizing or tailoring persuasive technologies will increase their effectiveness [8, 10, 11]. So far, few attempts have been made toward personalizing persuasive technologies or developing approaches for personalizing persuasive technology. For example, research has suggested that individual characteristics such as personality type [1, 2, 6], age [13], gender [12, 17], gamer type [3, 14, 15], and culture [10, 16] as well as individual's susceptibility to persuasive attempts [8, 9] can be useful dimensions for tailoring. Research has also explored how various psychological processes can be used to explain the persuasive effect of tailoring [4, 5, 7]. However, there are still many unexplored issues pertaining to creating, evaluating and implementing personalized persuasion and to the effects and conceptual foundations of personalized persuasion in different areas.

Goals and Core Questions

To advance the state of the art in this field, this half-day workshop aims at bringing together the academic and industrial community interested in personalization of persuasive technology to brainstorm and jointly explore these topics and define a roadmap for future research in this area.

In this context, we want to explore the following topics and questions:

- What do we personalize (for example, do we personalize the persuasive strategies, approaches, or end-goals)?
- How do we personalize (e.g., subjective and objective personalization methods)?
- Who do we personalize for (e.g., personality, gender, age, persuadability, player types, emotional states, contextual/situational variables)?
- Where do we personalize? - domain and context dependency of personalization approaches

- Why do we personalize (e.g., increase overall effectiveness, attitude vs. behavior change)?
- How do we evaluate the effectiveness of personalized persuasive technology over the one-size-fits-all, and what variables constitute contextual effectiveness (e.g., number of encounters and short or long-term effects)?
- Challenges and limitations of implementing personalized persuasive technology and possible solutions.
- Case studies and examples of personalized persuasive technologies
- Success and failure stories with regard to personalized persuasive technology
- Benefit and trade-offs of personalizing persuasive technology
- Studies on the return of investment and costs benefits analyses of personalized persuasive technology
- Effect of personalization on user experience
- Explorations of the differences and commonalities between personalization, customization, adaptation and tailoring.
- Other areas of personalized persuasive technologies

We invite you to participate in the workshop by submitting position and research papers that cover any of the topics listed above or other relevant topics.

Workshop Outcomes

Through critical reflection, presentations, and brainstorming, the workshop will outline a roadmap for personalization in persuasive technology research with a focus on improving relevance and overall effectiveness of persuasive technology. It will contribute an overview of the state of the art in persuasive technology research addressing the issue of personalization, and outline challenges and opportunities. It is planned to establish a working group that will continue to discuss and collaborate on issues personalization in persuasive technology.

References

1. Alkış, N., Taşkaya Temizel, T.: The impact of individual differences on influence strategies. Pers. Individ. Dif. 87, 147–152 (2015).

2. Arteaga, S.M. et al.: Mobile system to motivate teenagers' physical activity. In: Proceedings of the 9th International Conference on Interaction Design and Children. pp. 1–10 ACM, Barcelona, Spain (2010).

3.   Busch, M. et al.: Personalization in Serious and Persuasive Games and Gamified Interactions.
     In: Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play -
     CHI PLAY '15. pp. 811–816 ACM Press, New York, New York, USA (2015).

4.   Dijkstra, A.: The persuasive effects of personalization through: name mentioning in a smoking
     cessation message. User Model. User-adapt. Interact. 24, 5, 393–411 (2014).

5.   Dijkstra, A.: The Psychology of Tailoring-Ingredients in Computer-Tailored Persuasion. Soc.
     Personal. Psychol. Compass. 2, 2, 765–784 (2008).

6.   Halko, S., Kientz, J.A.: Personality and Persuasive Technology: An Exploratory Study on
     Health-Promoting Mobile Applications. In: Persuasive Technology. pp. 150–161 Springer
     (2010).

7.   Hawkins, R.P. et al.: Understanding tailoring in communicating about health. Health Educ.
     Res. 23, 3, 454–66 (2008).

8.   Kaptein, M. et al.: Adaptive Persuasive Systems. ACM Trans. Interact. Intell. Syst. 2, 2, 1–25
     (2012).

9.   Kaptein, M., Markopoulos, P.: Can you be persuaded? individual differences in susceptibility
     to persuasion. In: INTERACT. pp. 115–118 (2009).

10. Khaled, R. et al.: Our place or mine? Exploration into Collectivism-Focused Persuasive
     Technology Design. Persuas. Technol. (2006).

11. Orji, R.: Design for Behaviour Change: A Model-driven Approach for Tailoring Persuasive
     Technologies. University of Saskatchewan (2014).

12. Orji, R. et al.: Gender and Persuasive Technology: Examining the Persuasiveness of
     Persuasive Strategies by Gender Groups. In: Adjunct Proceedings of the 9th International
     Conference on Persuasive Technology. pp. 48–52 (2014).

13. Orji, R. et al.: Gender, Age, and Responsiveness to Cialdini's Persuasion Strategies. In:
     Persuasive Technology. pp. 147–159 (2015).

14. Orji, R. et al.: Modeling the Efficacy of Persuasive Strategies for Different Gamer Types in
     Serious Games for Health. User Model. User Adapt. Interact. 24, 5, 453–498 (2014).

15. Orji, R. et al.: Tailoring persuasive health games to gamer type. In: Proceedings of the
     SIGCHI Conference on Human Factors in Computing Systems - CHI '13. pp. 2467–2476
     ACM Press, New York, New York, USA (2013).

16. Orji, R., Mandryk, R.L.: Developing culturally relevant design guidelines for encouraging
     healthy eating behavior. Int. J. Hum. Comput. Stud. 72, 2, 207–223 (2014).

17. Orji, R.O. et al.: Modeling Gender Differences in Healthy Eating Determinants for Persuasive
     Intervention Design. Persuas. Technol. 7822, 161–173 (2013).