
PINC: Persuasion, Influence, Nudge and Coercion through mobile devices

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Abstract

The aim of this workshop is to provide a focal point for research and technology dedicated to persuasion, influence, nudge and coercion (PINC) on mobile platforms. We aspire to establish a scientific network and community dedicated to emerging technologies for persuasion using mobile devices. This workshop would be a unique opportunity for interaction designers and researchers in this area to share their latest research and technologies on PINC methods with the scientific communities. It is important to understand how the habits of everyday life change and evolve. Mobile devices play a significant role in shaping normal practices in distinct ways such as facilitating the capture of information at the right time and place and providing non-invasive and cost effective methods for communicating personalised data that compare individual performance with relevant social group performance. Among the issues the workshop will take on are: (a) What opportunities do mobile interventions provide? (b) How far the intervention should go? (c) Are PINC methods ethical? and (d) How can we extend the scale of intervention in a society using mobile devices? Participants will contribute to the workshop with examples of PINC technologies, and we will work together to create novel ideas, interactive applications on the phone, and discuss future opportunities.

Keywords

Nudge, persuasive technologies, influence, coercion, human-computer interaction, human-mobile devices interaction, mobile phones interaction design

ACM Classification Keywords

J.4 Social and behavioural sciences : psychology, H.1.2 User/machine systems: Human information processing

Introduction

The aim of this workshop is to provide a focal point for research and technology dedicated to PINC methods on mobile platforms. We inspire to establish a scientific network and community dedicated to emerging technologies for persuasion using mobile devices. This workshop would be a unique opportunity for interaction designers and researchers in this area to share their latest research and technologies on PINC methods with the scientific communities.

PINC draw on many complementary research such as sociology, behavioural science, engineering, computing science, etc. Patterns of consumption such as drinking, smoking, dieting are shaped by the 'taken-for-granted' practices of everyday life. Some social scientists including Shove highlight that the complex sociotechnical, economic, cultural and symbolic systems underlie conceptions of 'normal' practices, though what people take to be normal is not fixed but 'immensely malleable' [12]. Consequently, it is important to understand how the habits and practices of everyday life change and evolve.

Our choices are inevitably influenced by how the choices are presented (described as 'choice architecture'). Therefore, it is legitimate to deliberately 'nudge' people's behaviour in order to improve their lives [13]. A 'nudge' can be defined as a piece of the choice architecture that influences people's behaviour towards a determined goal without obscuring any options or introducing significant economic incentives [13, 6]. Thaler and Sunstein highlight research in social psychology

that shows one can nudge people simply by telling them what other people do [13].

Cialdini et al. [2] distinguish between two types of social norms, descriptive and injunctive. The former simply state what most people do, the latter express an overtly normative message about what people should do. Both can be effective, descriptive norms are less invasive, but can have an adverse effect among those who are already achieving the desired behaviour, because they encourage conformity with the norm. Recent research indicates that descriptive norms are more effective if related to the respondents' reference group and that the impact of descriptive social norms is underestimated by research participants [8]. Two field studies on electricity consumption are directly relevant to this proposal: Schultz et al. [9] found that negative movement towards the norm can be avoided by combining descriptive and injunctive social norms, and Nolan et al. [8] found that descriptive norms had more effect on energy consumption than appeals to self interest, protection of the environment or social responsibility. However, these two studies are not scalable because researchers read meters in person and attached handwritten feedback to respondents' front doors; this personal element may have enhanced the normative effect of the communication. Most research on normative social influence has been quantitative; the few qualitative studies have focused on the context, for instance, on alcohol abuse rather than on conceptions of social norms and the way they influence normal practices.

The use of digital technology is central to make behavioural changes. A novel use of information and communication technology helps transform the lives of individuals, society and business. Digital technology particularly mobile technology can play a significant role in shaping normal practices in three distinct ways: (1) it facilitates the capture of information, enabling accurate, cost effective, timely collection of data relevant to specifically defined reference groups at the

right time and place; (2) it provides non-invasive and cost effective methods for communicating personalised descriptive social norms that compare individual performance with relevant social group performance; and (3) social network sites running on the device facilitate communication of personalised descriptive social norms that relate to the participant's self-defined community. Recent research on health related interventions shows that mobile phones can be used to actively improve the wellbeing. Whittaker et al. [15] report improvements in many aspects including medication adherence, monitoring and self-management of chronic disorders (such as diabetes) as well as of support treatment in difficult cases. Sending text messages to smokers' mobile phones proved to be a successful intervention technique in [11]. Mobile phone applications for controlling weight and diet have been successful but the scale of interventions and studies have not been large [14]. These applications are based on reminders and giving hints about the amount of calorie in the food on daily basis and suggesting some healthy food replacements. Research shows that the use of feedback increases the physical activity too. Pedometers on mobile phones have been used successfully as an unobtrusive, ubiquitous motivational technique in a number of small-scale studies [1, 3, 7, 4]. This research suggests that both individual and social feedback can be effective, and that it is important to use stylised displays to increase interest and avoid privacy concerns. The Ubitfit [3] system also used a separate pedometer device but showed that a 'glanceable' display on a mobile phone helped to maintain increased physical activity levels. These studies support the need for research of individual and social feedback using a mobile device with a built-in activity monitor. Global warming is one of the greatest challenges of our time. Personal transportation greatly contributes to this problem by emitting CO2 emissions to the atmosphere. Because trans-

portation is by definition a mobile activity, mobile devices are well suited to sense and provide feedback about these activities [5]. Froehlich et al. [5] explore the use of personal ambient displays on mobile phones to provide feedback on sensed and self-reported transportation behaviours. Their contribution is the first UbiGreen application on the phone and has proven successful in popularising the 'green' mode of transportation. This study supports the need for research on individual and social feedback on global warming and the design of the future 'green' mobile applications.

Goal of the Workshop

In spite of the promising results of the above researches which exploit intervention in individuals' lives and influence them through 'nudge', this area is vastly unexplored and remains an active research domain. More specifically, nudge has the following important properties:

- It is amenable to gradual, piecemeal and permanent growth and development of everyday-life habits and practices.
- It impacts at multiple levels – community, group, and individual– and it establishes ties between these levels.
- It does not eliminate the choice: "it's libertarian in that the individual's choice reigns supreme; but it's parental in that there is a parental push, a nudge, for the individual to make a better choice" [13].

We therefore believe that PINC Through Mobility can serve as a common ground for research among the diverse community of interaction designers and researchers. This is partly due to fact that the growing interest in Mobile Persuasion as a medium for changing habits and improving health and wellbeing has encouraged establishment of dedicated labs to Persuasive Technologies, namely at Stanford University¹. Nevertheless, the research in the area of persuasive interaction design remains limited and this workshop aims at addressing

¹www.mobilepersuasion.org

these new arising areas of technological as well as sociological research.

In particular the workshop will address the following issues:

- The benefits of mobile interventions versus non-mobile technologies.
- How far should the intervention go?
- Are PINC methods ethical? How the ethical issues should be justified to the public? What can be categorised as unethical persuasion and what are ethical concerns regarding mobile persuasion?
- How can we extend the scale of intervention in a society using mobile devices? Do current technologies on mobile phones need to be improved to make big ideas of persuasion possible?

The scope of such an undertaking is huge. We believe that we can explore a number of the issues that need to be addressed in such an undertaking. Therefore, the long-term inspiration of this workshop is to establish itself as an annual event, running along the Mobile HCI conference, where the state-of-the-art in nudge and persuasion technologies for mobile devices are presented and researched.

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