

Beyond Persuasive Cities: Spaces that Transform Human Behavior and Attitude

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Abstract. The rapid evolution and innovation in technology and particularly human computer interactions signifies the importance to advance research on formation, change, and reshaping of human behavior and attitude. Moreover, quality of life and the health of individuals are becoming essential subjects to be studied and improved through the creation of persuasive technologies and spaces. This research presents a novel contribution to computer-supported influence by refining knowledge on the fundamentals of transformation, the architecture of persuasive spaces, and the attitudinal transactions using 3D-RAB Model. It proposes the design of spaces that can leverage persuasive features on its occupants to change their behavior to a predetermined one. It augments current research on persuasive cities and propose that persuasive features can be embedded into public and private enclosed areas to transform human behavior or attitude. The proposed methodology is instrumental for further advancements in research and practice on persuasive technology for transformation.

Keywords: Persuasive Cities, Transforming Sociotech Design, Persuasive Technology, 3D-RAB Model, U-FADE.

1 Research Questions

This study presents a novel contribution to human-computer persuasion [1]. It proposes the design of spaces that can leverage persuasive features [2] on its occupants to change their behavior to a predetermined one, using 3D-RAB Model [4]. It augments current research on persuasive cities [3] and propose that, persuasive features can be embedded into public and private spaces to transform occupants' behavior or attitude. Specifically, the study discusses requirements for such spaces by addressing the following research questions:

- What architecture supports design facilitation of such spaces?
- How can occupants in such spaces be categorized to facilitates behavior transformation designs?
- What possible transformations or states shall occupants of such spaces experience?

2 Transforming Spaces

Several studies have incorporated persuasive functionalities for changing attitude and behavior in various areas, e.g. health and education [5]. Mostly, techniques that leverage on human-computer persuasion or computer-mediated persuasion are used to alter user's cognition to a predetermined one. In recent times, researchers in the field prefer to consider the socio-technical aspect of human-machine persuasion as part of persuasive technology designs. Particularly more attention is given to social influence [2].

With all the progress in persuasive technology research, there is a continuous need for the optimization of activities that seek to change or alter human behavior. Although, various studies have focused on methods that seek to improve behavioral transformations, many essential issues remain vaguely understood and ambiguous. Scholars and practitioners in social psychology and persuasive technology can achieve some level behavior and attitude transformation during interventions, however they cannot provide a specified objective and generic approach for such activities. It is therefore necessary that research on the factors that influence human attitude and behavior transformation are intensified. This is particularly important in recent times due to the ever-increasing harmful impact of human lifestyles on the ecosystem.

The presences or provision of persuasive functionalities will not automatically lead to behavior or attitude change. In other words, the provisions of persuasive functionalities are necessary for behavior or attitude change, but not sufficient. There are other factors that needs to present to create an enabling immediate environment that fosters behavior and attitude transformation and maintenance. However, it is expected that the provision of an intelligent spaces that can sense, classify and present persuasive information will enhance persuasiveness. In terms of research, the proposition of persuasive space provides a conceptual guide for further studies that will integrate knowledge and also expand our understanding in areas such as: artificial intelligence, ubiquitous computing, human computer interaction, big data analytics, deep learning algorithms, construction management, and mass media communication.

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