

# Providing for Impression Management in Persuasive Designs

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**Abstract.** In this paper, we argue that persuasive technology designers can improve the effectiveness of their design by integrating an impression management mechanism with other persuasive strategies. We illustrate how technologies can be designed to accommodate audience specific self-presentation.

**Keywords:** Impression management, Persuasive Technology design, Behavior Change system, cognitive dissonance, social comparison.

## 1. Introduction

One of the advantages that Persuasive Technologies (PT) have over a human persuader is their ability to offer greater anonymity to users [1]. Users can disguise some information including name, gender, age, ethnicity, and weight to make a positive impression on certain others. Face-to-face interactions provide little room for information disguise. This makes PT effective and acceptable to places that human persuaders are not welcomed [1]. Human behaviors are context dependent. People do not have a single character, but often display different characters in different environments, situations, and with different people [2]. For example, we tend to behave differently with our spouses, children, students, colleagues, and strangers. Impression Management (IM) is a goal-directed process in which people consciously or unconsciously regulate and control information in a social interaction in order to influence the image others have about them [3]. This is motivated by the internal drive to keep our views, thoughts, and actions consistent [4]. The cognitive dissonance theory [5] suggests that people try to be consistent with their existing views to reduce dissonance. This theory holds attraction for PT designers, since it suggests that inconsistency in beliefs may motivate and trigger behavior change. However, we argue that PT designers employing cognitive dissonance theory and social comparison should integrate mechanisms for IM. This is because for a PT to effectively integrate into user's daily life, it must be able to accommodate a variety of user's behavior needs including the need to disguise and control information [6]. Moreover, IM can be useful not only to the people but to others (followers) in a social system where behaviors can easily be imitated. PT can be designed to allow users to easily create content and selectively share it based on the context (audience). As users go about their daily lives, they should be able to seamlessly manage the impression they create on others.

## **2. Self-Presentation and Impression Management (IM) theory**

IM is the process of managing the image of ourselves that we project to others or the impression we give others about ourselves [7]. Specifically, IM deals with controlling the flow and presentation of information between the performer and his/her audience. In our daily behavior, self-presentation manifests in different ways including in the friends we keep, the way we interact, speak, and look. People engage in self-presentation to achieve different goals. People with low self-esteem self-present to avoid making a negative impression on others, while those with high self-esteem self-present in order to make a positive impression on others [8]. PT can be designed to provide an opportunity for individuals to more effectively manage the impressions they make on others. PT can also allow for greater anonymity and control through selective filtering and sharing of information. This can be achieved by hiding or revealing information as desired. Although the need to manage impression seems ingrained in human nature [9], PT designers are yet to embrace this need. Effective integration of IM will require both context consideration and a reasonable degree of control by the user. For example a physical activity motivating PT can allow the user flexibility to disguise or misrepresent her actual behavior as the need may arise [6]. From the PT literature, only the work by Consolvo et al. [6] considered the need for IM. However, it is important that PT be designed to accommodate the need for individuals to adapt themselves in everyday life to attract a desired response from others, to influence others' perception of themselves and to avoid projecting a wrong or demotivating image to others. Without this, it might be difficult to design PT that will unobtrusively integrate into the user's daily life.

## **3. Self-Presentation and Cognitive Dissonance**

Cognitive dissonance (CD) theory developed by Festinger [5] states that individuals behave to minimize inconsistencies among attitude and behavior to reduce discomfort. In a social environment, dissonance can be evoked in two ways: first, by an individual's attempts to conform to a group belief that contradicts an individual's belief. Second, by an individual doing the opposite of what everyone else does (very difficult) [10]. PT employ CD theory by making individuals commit to a self-determined goal and provide feedbacks which compare goal attainment against goal commitment [6]. In this case, the goal commitment is mostly determined by the individual's self-efficacy – feeling of ability to achieve the goal. Dissonance can also be induced by making an individual to publicly commit to a cause. In this case, the commitment is determined by both the audience and the individual's feeling of self-efficacy since breaking the commitment would lead to dissonance.

IM suggests that people attempt to present and maintain a favorable image in the eye of others. If the reality presents a contradicting image to their intended image it leads to dissonance. Whether an individual will commit to a big or small goal is partly dependent on the impression the individual wants to make on the audience [8]. Using physical exercise as an example, an individual will likely commit to high daily step count goal if he/she is already being perceived or wants to be perceived as physically active by the participating group. Dissonance is induced by publicly displaying as persuasive feedback the goal attainment and matching it with the commitment. This type of feedback which allows no room for an individual to control what and when information is displayed uses a push-based feedback mechanism and does not allow for IM. However, IM can be integrated to complement CD by using pull-based mechanism, where the user actively

seeks feedback and controls when and what is being displayed. This is important considering the role others play in our behavior. Observable feedbacks in a social context often lead to comparison which can amplify or undermine the dissonance effect.

#### **4. Self-Presentation and Social Comparison**

The need to self-present becomes magnified if others are allowed to share some specific information that might depict one in a negative light. According to social comparison theory, people look at others to determine how they compare and how they should behave [11]. This comparison could be either upward or downward. Upward comparison occurs when one compares him/herself with others who he/she perceives as better in a particular behavior. Upward comparison can spur one to action by exposing one's weaknesses in comparison with others and by showing some room for improvement in certain behavior. Moreover, because one can emulate others' success in upward comparison, the emulated person(s) can be seen as a mentor in that particular behavior. Part of the responsibilities of a "behavior mentor", is to show good behavior examples to the followers. A mentor is not necessarily the best in that particular behavior; it is important only that mentors are better in the behavior than their followers. It is also possible for a mentor to be a follower to another person. This scenario can be seen as a behavior ladder. People look up to others in a higher position in the ladder. This is the strength of social comparison as a persuasive strategy. However, upward social comparison has also a dark side. When one compares oneself with somebody that is "too good", one can lose the hope of reaching that level, feel miserable, and might give up. IM can be used to provide a face-saving option for "hidden admirers" to emulate their mentors without exposing their weaknesses thereby reducing the discouragement.

Despite the fact that most PT applications employing social comparison stress upward comparison, evidence suggests that people engage in downward social comparisons more frequently [12]. Downward comparison occur when one compares oneself to people that perform worse than him/herself. This type of comparison often leads to self-praise and positive feedback. Hence, it might be difficult to motivate behavior change using only downward comparison. However, downward comparison could be necessary for self-enhancement. For instance, in the event of relapse in behavior or in a state of unhappiness with one's progress that might lead to behavior abandonment, downward comparison might be necessary to strengthen one's self-efficacy. Yet, it also has a negative side. When one sees oneself as being at the top of the ladder, one might not see the need to stretch him/herself so much. Therefore, he/she may start slipping back. IM can be used to enhance the performance of the aspiring followers thereby allowing no room for the people on top to get "too comfortable" and relapse.

A closer analysis shows that most PT interventions employ a hybrid approach to social comparison (allow one to compare oneself both upward and downward). This seems appropriate because it enables the interventions to leverage the advantages of both upward and downward comparison to effect behavior change. However, we argue that allowing for IM through selective disclosure or sharing of comparative information pertaining a target behavior is necessary to improve the effectiveness of social comparison persuasive strategy. Taking from our analogy of behavior ladder above, we assume that each performer has a mentor whom he/she look up to as a positive example (not necessary a perfect example). The follower receives encouragement and motivation from their

mentor's behavior and often follows the mentor's footsteps. The mentors are not infallible and can slack once in a while with regard to the target behavior performance. As a result, IM is necessary, especially at a time of behavior relapse to shield the propagating effect of this relapse in not only the mentors themselves but more importantly on the followers who imitate them. Hiding or disguising information about this relapse helps to keep the followers motivated and avoid undesirable imitation. It also provides the self-enhancement needed by the mentor to move on. However, it might be necessary to share the information about the followers' relapse with their mentors who serve as an encouragement even in the time of relapse.

Following from the discussion above, the audience (follower or mentor) and level of control (pull-based and push-based feedback, and selective disclosure) emerged as the main consideration when designing for IM in a PT.

## 5. Conclusion

The need for IM is ingrained in human nature, but PT researchers are yet to embrace and integrate this need in their designs. Hence, there is a space for PT designers to integrate IM with other persuasive strategies for an effective result. We argue that PT can successfully exploit IM features to create conditions and amplify behavior change. We discussed cognitive dissonance theory and social comparison strategy in line with impression management to illustrate how IM can be used to advantage in a PT. Finally, we identified the audience (mentor or follower) and control (pull-based feedback and selective disclosure) as the two main requirements when designing to accommodate IM. We hope that this work spur research on various ways of integrating IM on PT.

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