

# A first approach over human values in interaction design: working with interactive technologies to encourage recycling

Luciana Nunes<sup>1</sup>, Cláudia Mont'Alvão<sup>2</sup>

Pontifical Catholic University of Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil, 22430-060

<sup>1</sup> luciana.mn@gmail.com, <sup>2</sup>cmontalvao@puc-rio.br

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## 1 Context

The exacerbated consumption due to the rapidity of technology evolution and other cultural factors has consequences and one of them is more waste generation and incorrect disposal. This became a global challenge within sustainability theme. The Sustainable Interaction Design (SID) is an area within HCI that defends sustainability as the focus of interaction design projects (BLEVIS, 2007). It demands from designers a more holistic overview. The artifact designed needs to have a long-term use and to provide positive experiences for the users, helping them to construct meaning (SHEDROFF, 2009).

One issue involving meaning construction is human values. They are a more unconscious aspect but are also present during the experience, influencing it. The human values definition used here is the one given by FRIEDMAN *et al.* (2006), who say they are all we consider important to us or to a group in life.

In this paper, we discuss the incorporation of human values in the early design stage of an eco-feedback system. Eco-feedback is a technology that aims to inform about an individual or a collective behavior to raise awareness and to promote more sustainable behaviors (FROEHLICH, 2011).

## 2 Method

As a proposition to address human values to the SID, a first collaborative design in a workshop format with interaction designers was planned and implemented. The workshop joined four interaction designers and one participant non-designer to work as a team considering the topic recycling. All designers had graduate studies and professional experience. They were recruited by the researcher personally or by text message apps. They were given one briefing and four 'personas' and should choose what

device(s) to use. The design briefing contained a table of values and the team should select some of them to work. The workshop was structured in 3 phases: one individual and two in group. It had a five hours duration and the expectation was the designers could come up with initial drafts of the system, materializing the chosen values in interface objects and functionalities.

### **3 Results**

We observed that working with values individually was considered difficult, especially when they had to think of functionalities representing possible tensions caused by choice of one value rather than other. They preferred to work together, discussing and choosing values, devices, and strategies focusing on target behavior.

As a result, they opted to work with two devices: a totem and a smartphone using as channels of interaction, respectively, software and app, forming an ecosystem. To draft the prototype, they were suggested to select one device to work with due to time restriction. They came up with a flowchart of screens from the totem software, pointing each value they were focusing. They wrote on the flowchart examples of functionalities, such as visualization of the benefits (economic, social and environmental).

According to the debriefing done at the end of the workshop, the use of values at the beginning of design process was helpful, once they made the team thought about aspects that would not be considered immediately. For them, the discussion generated from the necessity to incorporate values was the richest point. Besides this, the participants criticized the discussion over values tensions, as they thought it could be better used. They also questioned if value's role could be assumed by other aspects they understand as part of product's vision, such as goals and needs.

### **4 Conclusions**

The incorporation of human values at the beginning of the design process showed a positive result, especially within sustainability topics, such as recycling. During the 16h Ergodesign, USIHC & CINAPA conference in June 2017, we made an oral presentation describing the workshop applied. The audience demonstrated more interest and curiosity about the design process experienced than the proposed solutions. For them, this is another point of view over the design process, considering human values as relevant aspects of the society.

As next steps, we recommend improving the workshop to confirm these first achievements, especially the duration and the activities, as well as apply it to groups of designers with different academic and professional levels, like undergraduates.

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