ContraVision: Designing a Contravideo Set

Other

ContraVision: Designing a *Contravideo* Set

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Abstract

Users' reactions to future technology can be difficult to predict, but they can determine a product's success or failure when it reaches the market. Video can be used as a powerful medium to create realistic representations of technology in use and elicit potential users' reactions at the concept-development stage. To account for the biases introduced by any representation and elicit a wider spectrum of reactions, the ContraVision method envisages the use of two contrasting versions of the same video scenario. Here we describe the criteria informing the design of what we call a *contravideo* set.

This forum was born from the recognition that some things are better communicated by video than by text and that video is especially effective in conveying the experience of technology. Indeed the impression of reality created by the multitude of indexical signs that make up an audiovisual message can be very powerful, especially to communicate the experience of technology that does not yet exist. Apple's Knowledge Navigator [1], Hewlett Packard's Cool Town [5] and Microsoft's Healthcare [2] have captured the imagination of many with their futuristic visions depicting worlds in which our daily lives are significantly enhanced through the use of fictitious technologies. In the same way HCI researchers have also used video to capture the imagination of potential users and explore their reactions to new design concepts that may have a significant impact on their lives. Indeed, video has been used extensively to elicit in-depth responses from users, for example, to involve stakeholders in the design process [6, 9, 11, 12] or for requirement elicitation [4, 7, 8].

However, any particular video representation only provides one of the many possible ways in which a technology can be portrayed. Selecting what aspects to represent, what profilmic reality to shoot or what cinematic codes to use constitutes an act of mediation that will inevitably influence the reactions of the audience. Here we discuss one way in which different representations of a futuristic scenario can be crafted and used in HCI research, to explore the acceptability of technology that does not yet exist. In particular, the ContraVision method aims to elicit users' reactions to both positive and negative aspects of a future scenario, in order to mitigate inevitable representational biases and at the same time expand the spectrum of elicited responses to uncover the often elusive personal, cultural and social concerns that are relevant to the acceptance of personal technologies. Elsewhere [10] we describe the method in detail and how it was informed by the fictional cinematic theme of alternative realities, also reporting on the findings of an evaluation study exploring people's attitudes towards the use of pervasive technology for personal healthcare. Instead, here we focus on how the two representations used in our study were designed to form what we call a *contravideo* set.

Being able to compare the findings from the different viewings was as important to us as exploring the issues potentially raised by the technology. To increase the opportunities for observing differences and similarities in the viewers' responses to the two videos, we wanted these to trigger reactions on a variety of issues that might be relevant to viewers and that could emerge from the use of the technology contextualized in everyday life. We chose to focus on futuristic technology because arguably the use of video in HCI is more relevant when no prototype is available for prospective users to experiment with. Moreover, the fact that the technology was fictitious gave us freedom to represent potentially controversial features or situations that were likely to trigger strong reactions, especially in relation to issues that were of particular interest for us, such as privacy and identity. Because of its popular but also sensitive nature we chose to focus on the themes of health care and body weight, and because of its potentially helpful but also controversial nature, we chose to represent a wearable diet-monitoring system.

The system combined functionalities that could be very beneficial to the user but also raised issues of different kinds. For example, a camera embedded in the user's glasses took a picture of any food that he looked at for more than three seconds, in order to text back to him an estimate of the food's calorific content and help him make nutritional choices consistent with his diet; this was potentially very helpful, but meant that the user's visual preferences were constantly monitored and that his personal and social space could be heavily intruded by incoming texts. For another example, a microchip embedded in the user's wrist recorded his physiological changes when he ingested food, so he could be alerted upon approaching his daily calorific allowance; this too was potentially very helpful, but meant that the user was under constant pressure as he had no control over the microchip that was implanted in his body. In other words, we wanted the technology to present both positive and negative aspects, which were differently emphasized in the two videos depending on whether the representation was positive or negative.

In order to control the different ways in which the technology was represented in the videos, these needed to share a number of similarities. At the very least, they needed to have the same duration, narrative structure and filming style, include the same number and type of scenes, represent the same characters and situations, and explore the same themes. Against these similarities, a number of differences regarding the main character, his interaction with the other characters and the technology, and the consequent diverging development of the two stories could be respectively explored in the positive and negative video. To facilitate this exploration, we chose to represent a variety of situations in which the main character had to manage his relationship with food in different environments and social contexts: for example, having the habitual breakfast at home with his wife, joining a colleague's informal birthday celebration in the office, or attending a more formal business dinner with a client. Throughout these situations, in the positive video the main character demonstrated an open and proactive attitude in managing his interaction with both the technology and his social relations. On the contrary, in the negative video he demonstrated a deceptive and ineffectual attitude throughout. These differences ultimately contributed to very different outcomes in the stories.

Because we wanted viewers to focus on the functional, interactional and social aspects of the technology in use, rather than on its technical aspects, we had to strike a balance in representing the technology. On the one hand, we needed to show enough of it and provide an impression of reality and familiarity, not to keep the viewer guessing how it might work; on the other hand, it was important that we did not show too much of it and not ostentate it, not to lead the viewer to

critique its technical aspects. To achieve this, our fictitious system made use of devices that are already commonly used (mobile phone, microchip, glasses, cameras, etc.), with the difference that these had uncommon or altogether futuristic functionalities (for example, the microchip could record the physiological changes taking place within the user's body when they ate).

Similarly, we did not want to draw the viewer's attention to the filming style. We wanted this to be as transparent as possible while making the viewer feel as though they were part of the narrative and close to the main character. We achieved this by shooting with hand-held cameras mostly at eye level and relatively short range, prevailingly combining static medium shots with close shots, close-ups and extreme close-ups, to compose scenes and alternate syntagmas edited at a relatively slow pace. This allowed us to focus on the main character's interactions with the technology and the other characters, and on his emotional reactions to both. The videos were each roughly ten minutes long, which gave us time for exploring a number of themes and gave the viewers participating in our study time to engage with our representations without being overloaded. To avoid any carry over effects that would have biased the viewing of the second video, each participant only saw either the positive or negative version so that the findings from the viewings of the different audiences could then be compared.

Indeed, our findings [10] indicate that using carefully crafted, systematically contrasting portrayals can help mitigate the biases characterizing any representation, afford relative control and breadth in the elicitation process, facilitate the attribution of viewers' feedback to specific elements in each representation and reveal a more faceted picture of prospective users' reactions. Although our *contravideo* set was designed for a specific study, most of the design criteria that we applied could inform the design of different sets for different studies. With future work we will continue to investigate how *contravideo* sets might be designed and effectively used to explore prospective users' reactions to future technology. In the meantime, however, our findings highlight the need to take representational biases into account and find ways of mitigating them when making use of video in HCI research.

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