

## Personalising emotional skin designs

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Recently a number of people (e.g. McCarthy and Wright, 2004; Norman, 2004) have argued that the traditional focus on performance in product design might be too narrow, and things such as aesthetics, fun and the user self-image should be considered. These seem all highly personal factors, with a large variation between users. Therefore, the traditional approach of designing for a single average user might be less effective here. Instead, user interfaces should be more fitted to the needs and desires of the individual user. However, most research on customisation focuses on function customisation, and less on form customisation. For example, personalised search engines and customised online purchase offers are both function customisations emphasising the importance of performance and usefulness of a product. When it comes to form customisation, which stresses aesthetic and the emotional need of the user, designers seem mostly guided by what is technically possible or by their intuition, and not always by what is desired by the users. Therefore, a better understanding of form customisation seems welcome.

Our research looks at customisation of application by using skinning technology. This technology allows users to change the applications appearance —the skin— at runtime. Skinning can be very basic, such as changing background images, or colour, but also more extensive, such as changing the interaction style. A number of commercial applications already apply this technology, e.g. Windows Media Player, ICQPlus, and Winamp.

We are currently conducting two sets of studies that focus on personality and skin selection. In one set of studies, we look at correlations between users' preference for specific skins and the users' personality. Already more than 200 participants have been involved in these studies. Participants are asked to look at sets of 60 to 68 skins of the Windows Media Player and rate the likelihood that they would select the skin. The skins are projected one by one on a large screen in a classroom setting. After rating them, participants are asked to fill out two personality questionnaires: BIS/BAS scales, related to the motivational systems underlying behaviour (Carver and White, 1994), and IPIP-NEO inventory (Buchanan, Johnson, and Goldberg, 2005), which measures individual differences on five dimensions. The results of these explorative studies seem to relate to the similarity-attraction hypothesis studied by Reeves and Nass (1996). For example, the studies reveal promising correlations between skins with a humoristic theme (e.g. The Simpsons, Monty Python, Little Britain), and cheerfulness (sub-scale of extraversion) and depression (sub-scale of neuroticism), but also between scary looking skins (e.g. skulls, snakes, Jaws, aliens) and the behavioural inhibition system (BIS), which is associated with motivation of avoiding undesirable situations.

In another set of studies, we look at the correlations between specific skin colours and personality, after users *actually* interacted with an application. Participants in these

studies are asked to perform a number of tasks with a CD-player and a calculator which both have a set of skins with different colours. After they performed the tasks, participants are asked to order the skins according to their preference. Again participants have to complete the IPIP-NEO personality inventory here. The results of the studies reveal some correlations between specific colours (e.g. blue) and personality traits (e.g. extraversion).

Personality data is often obtained by using questionnaires with over 100 questions, which requires some time and effort on the side of the user to answer them; time users might not always have or are willing to invest before using an application. Therefore, we are also looking for a less intrusive way of obtaining personality data by analysing automatically recorded (logged) user-system interaction. The data obtained from 16 users, who used a CD-player over a period of three to five days, suggests already promising correlations between personality data obtained in questionnaires and recorded interaction behaviour, for example between extraversion and the average time between two consecutive mouse clicks. As part of the PROSKIN project (Fine and Brinkman, 2004), we are now in the process of extending these research directions by developing an online web radio (see <http://www.proskin.org>), which allows us to record user interaction from a large online user population remotely. The web radio will also have multiple skins and provide a platform to collect personality data via online personality questionnaires.

The results obtained so far, however, also seem to suggest a limitation in (small correlations) predicting skins selection directly from users' personality. We hope to increase the prediction and understanding of skin selection by including in the analysis the social context of the behaviour. For example, Norman (2004) suggested three levels of processing when it comes to the emotional part of a design: visceral (appearance), behavioural (the pleasure and effectiveness of use), and reflective (self-image, personal satisfaction, memories). Especially the reflective level, associated with the message a product sends to others, might be relevant for skin selection. For instance, users might have a positive attitude towards selecting a particular skin, however, their belief of what important others might think when they select this skin, might discourage (or encourage) them of actually selecting this skin. The Theory of Reasoned Action (Ajzen and Fishbein, 1980) and its successor, Theory of Planned Behaviour, which includes people confidence in their ability to perform the behaviour, seems to be interesting candidates to be studied in this context, as they try to predict behaviour from peoples' intention by looking at their attitude, their perceive social norm and their perceived capabilities. These again are influenced by personality traits according to these theories. By including these factors, we hope to learn more about skin selection and the underlying process in order to developed design guidelines for developing customised skins.

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