

# The Role of Visual Aesthetics in Creating Initial Familiarity

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*Position Paper for Visual Aesthetics in HCI Seminar, Dagstuhl, July 2008  
Hopefully the very last version...*

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What should the interface provide? Safety, novelty, challenge, support, provocation, encouragement, resonance, disturbance, etc. All these are aesthetic features.

Since Susanne Bødker's (1991) seminal works in the early eighties, activity theory has been recognized as a fruitful framework in human-computer interaction. Among the very useful implications of using activity theory in this field is that the situation of use is considered to be in constant development, and that transparency and reflection are seen as complementary and interdependent. Within this general framework of constant development in use, however, more specific means of analysis are needed to support actual design.

One of the contributions from activity theory that has seemed promising for interaction design is the framework on formation of mental acts by Peter Gal'perin (1969) as explored by Bardram & Bertelsen (1995). In short, the point is that conscious actions should be formed and developed to high quality before the action is automated into an unconscious operation. This high quality is related to aspects such as generality, mastery, and abbreviation. Bardram and Bertelsen (op.cit.) bring Vygotsky's concept of the zone of proximal development into the analysis and conclude that the interface should support the user in selecting a relevant, mediated zone of proximal development for the development of new high quality actions that subsequently can be automated into operations. In setting, or selecting, this zone it is important that the exploration of the new action is relevantly related to the use activity, in which the action is going to be part, and it is important that the new action, at least at a rudimentary level, is reachable. This later point has two implications, firstly the developmental distance to the new action, its novelty, should not be too long to be overcome; and secondly, and that is essential, the starting point for development should exist; there should be a clear sense of initial familiarity. The model suggested by Bardram and Bertelsen (op.cit) is valid and can be verified through prototypical illustrations as well as in empirical cases. However, when it comes to interaction design, the model is not very operational. In particular we lack a design-oriented understanding of how initial familiarity can be constructed and how it is ensured that this initial familiarity is also transgressable.

Initial familiarity can be established by triggering existing operations and actions as the basis. Or if relevant, pre-existing operations or actions cannot be counted on, a training wheels approach (Carroll et al. 1991) can be employed in which a simple and safe sandbox for exploration is established through instruction, and

later opened to generality after confidence and mastery has been achieved by the user. Two ideas of how to establish initial familiarity that are widespread in the HCI community are the concepts of metaphors and affordances. Although both concepts are well defined from the literature in semiotics and rhetoric, and ecological psychology respectively, they have been used in so many contexts and new meanings that their technical definitions are long forgotten. Metaphor seems to mean just anything that is kind of similar to something well known and affordance seems to mean that an artefact is self-explanatory. Hence, we can hardly use these concepts anymore in HCI if we want to be specific about what we are designing. This does not mean that those concepts are generally useless in HCI, which has been demonstrated for the concept of affordance with great rigour by Bærentsen & Trættvik (2002).

However, from the point of view of design it is indeed also important to have a comprehensive perspective on the use situation, but the question is if such theories lend themselves to the needed conceptual means for design. And even internally in any scientific or otherwise theoretical account it seems the case that not everything relevant can be accounted for; the systemic structural activity theory by Gregory Bedny as one very good illustration of this. Bedny (##REF) has developed a scientific framework that has been used for several decades in the engineering of safety critical human-computer systems. But in summing up on the long experience, Bedny (op.cit.) makes several openings in his very complete theory. It seems like the sources of motivation are to be found somewhere else; in cultural values and preferences, in love, in aesthetics, in all the aspects of life that the theory is not accounting for. This may lead to indefinite regress into otherness, but it is worth noting that the openings made seem addressable in an aesthetic perspective.

It may be argued that my reflections above are mainly about activity theory and that the conclusion therefore could be that it is this particular theory that is not useful enough. I will argue, however, that activity theory is taking a much broader perspective on the use situation, and in particular the developmental aspects, than most other psychology based theories in the field of HCI, and because it takes development in use as a basic feature of use. Thus, I am convinced that the issues identified when looking at this theory in HCI are also general problems.

In short, it is clear to me that we need a variety of perspectives to be able to design interfaces that users can appropriate and develop with. It has been argued in detail elsewhere that a range of shortcomings of current HCI theory could be solved by changing HCI into an aesthetic discipline rather than a cognitive one (Bertelsen & Pold 2004). It is clear that such a disciplinary reorientation means that aesthetics will address interactive everyday artefacts in the development of a whole new interactive aesthetics (ibid.). More specifically, in order to address users' interactive experience, it is not enough to apply separated knowledge of pictures, sounds, text etc. Therefore, in the ultimate disciplinary reorientation, visual aesthetics as a detached phenomenon is insufficient. I will, however, in the remainder of this paper discuss how fairly static, mostly visual aesthetics can be useful in designing for transgressable initial familiarity.

One of the first well documented studies of the impacts of aesthetic qualities of an interface was conducted by Kristiina Karvonen (1999) who showed how the users trust in, e.g. bank websites was highly dependent on certain aesthetic qualities rather than on functionality or usability related aspects of the interface. Thus, users' sense of own ability to interact safely with the interface is to some extent depending on aesthetic qualities. This may have implications for how initial familiarity can be established in situations where the user does not have much relevant experience to build from. This point can be further elaborated. In a recent study of emotional response to websites for marketing fashion products to young women, Inge Mølgaard, got some interesting results in comparing three websites for comparable products in a pre, during, post study (2007). The most interesting finding related to initial familiarity and aesthetics was that the pre response, i.e. the subjects impression of the opening picture before interaction started, determined the views on usability expressed in the post interviews to a larger extent than did the actual ease of interaction during the experiment. Even if interaction had been observed as being clearly cumbersome this had very little effect if the subject had a "good first impression". This means that it can be expected that the aesthetics of the very first parts of the interface seen by the user have an influence on how much uncertainty in the exploration of interaction the user can handle. This is in line with some observation by Lene Nielsen about the usefulness of splash screens for communicating a narrative, building the right expectations in the user for what it is possible to do in the application or website, thereby negating the widespread idea in web-usability that splash screens did not have other results than useless extra navigation (Lecture at sigchi.dk event).

Our recent work on creative use of software in techno-music composition revealed that metaphor might not be the most fruitful trope for creating initial familiarity (Bertelsen, Breinbjerg & Pold 2007). This study is illustrative because the studied composers to a large extent saw the software they use as a kind of material at the same time as they used it as a means for creating the music. The emerging materiality of the software constellations as experienced by the composers was a result of their creative use, i.e. the specific aesthetic qualities in this situation was constituted through relevant interaction. The composers were clearly creative in using the software and they were continuously using it in new ways. This kind of creative development in use could probably be found in other domains too. However, the way in which the composers systematically broke the interface metaphors was much more pronounced. It seemed as if strong metaphors, like the multi-track tape deck provoked the composers, so that they would try to break it down. Thus, for the composers the overly strong metaphors provided both support for initial familiarity and an encouragement to transgress this starting point. It seems that the strong metaphors in the music software were actually not metaphors for the composers. In the paper (ibid.) we suggest metonymy as a more operational rhetorical figure to work with for the interface designer. Metonymy works by referring to things that are close to the thing we want to describe, e.g. "small feet" in the house refers to infants. The advantage of this trope is exactly that it provides initial familiarity but at the same time it does not structure use in a way so that the user cannot escape from it. Interface tropes may be a matter of the entire interactive experience, but it seems likely

that analysis of the tropes embedded in the visual expression of the interface makes sense.

The first of these two examples points to visual aesthetics as a fruitful isolated perspective. The second example, points to the aesthetic aspects developing through interaction as being most important, but it also hints that a more static use of various visual interface tropes could be helpful.

In addition, I will point to the concept of interface criticism (Bertelsen & Pold 2004). Interface criticism is an assessment technique for interface assessment inspired by art and literary criticism. As an effect of this inspiration the technique did not in any radical way take interactivity of the users experience into account. Anyhow, our own pilot criticism of MS-Word turned out to provide a lot of interesting and promising insights.

In conclusion, it seems like a good idea to explore visual aesthetics in isolation even if we know that it is insufficient. In particular it seems promising in situations where “the first impression“ is crucial for establishing initial familiarity.

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