Systematic design of user interfaces

Geert de Haan

Hans van Vliet and I met in 1990 when Gerrit van der Veer introduced me to Hans as a possible PhD student in the NWO research programme 'Systematic Design of User Interfaces' that was directed by Hans. Gerrit held the opinion that the VU and this project provided better opportunities for me to develop into an experienced researcher, which eventually, turned out to be the case. In 2000 I received my PhD certificate from Hans with Michael Tauber and Gerrit van der Veer acting as co-promotores.

It may be noted that Hans had 'recruited' Gerrit van der Veer earlier as an Human-Computer Interaction (HCI) lecturer, and, without that, I guess that HCI and undersigned would not have developed so well at the Vrije Universiteit; besides my PhD defence wouldn't have been such a bearded event, as shown in the picture below (note: Thomas Green's beard is missing), presenting Hans, myself, Michael Tauber and Gerrit van der Veer.

To describe what I owe to Hans it was best to consult the acknowledgements section of the thesis ("I know at last what I want to be when I grow up. When I grow up I want to be a little boy. Joseph Heller, 1989): Thomas Green taught me to think HCI, Gerrit van der Veer supervised and inspired the thesis - and taught me about publishing results - and Hans van Vliet led the NWO-project which made it all possible, patiently kept the thesis on (a straight) track, and provided numerous improvements to its contents and language. As such, Thomas provided the HCI content, Gerrit provided publication and motivation, and Hans was responsible for the third and usually slightly hidden factor behind successful projects: direction and organisation. Only after some experience with other projects, it occurred to me that creating a -so to speak- fertile organisation is also of critical importance.

In terms of fertility, the Systematic Design of User Interfaces' project' has been rather successful: we started out with six junior scientists, and even though we rapidly lost one, the remaining juniors (Lon, Eddy, Gerd, Paul and I) all build a lasting career in HCI, either in research, business, teaching, consultancy or in design, with 2 PhD theses, one book, numerous cases of usable Human-Computer Interaction designs, and, in general, the start of a successful development of HCI in the Netherlands. Even though HCI has never been your own 'core business': thanks anyway! I guess our different research field explain why we never worked together after the project, again. Pity!

Upon finishing my PhD (or 'your little book' as Gerrit used to call it), I was quite shocked to be informed by you that I was not supposed to add any theses to my Thesis. Perhaps fearing that another competing reformation might arise from a collection of theses at the front door of De Boelelaan 1105, The Vrije Universiteit had forbidden its disciples to express themselves. Such belittlement - had the sixties not happened at all? Naturally, the only thing to do was to add some 'underground' theses to all the non-formal copies of the thing, with the text (see: text-box).
Theses not belonging to the doctoral dissertation:
ETAG, A Formal Model of Competence Knowledge for User-Interface Design

by Geert de Haan

1. The provincialism of universities shows itself in the proportion of a doctoral dissertation that must be written in a language which is not a common language for publicising about the subject.
2. In its crusade against smokers, the Dutch government systematically overlooks the harmful effects of the smoking of over seven million exhaust-fume-pipes.
3. Running and smoking, assuming not simultaneously, go well together.
4. The new economy contains all the ingredients to barter away the last remnants of Liberty, Equality and Brotherhood.
5. Automobilism is a fascism and the decent citizen is, yet again, ignorantly, our willing executioner.
6. In order to bring words and deeds into agreement with each other, The Netherlands should acknowledge Mammon as the state-religion.
7. Practising cognitive ergonomics in a market that is more and more being controlled by a monopoly is a rather cynical occupation.
8. The use of iterations in user interface design should, in general, be avoided, and it should, as much as possible, be applied in a well-controlled way.
9. Cognitive ergonomic design methods make the "too-little too-late" problem irrelevant and may even improve traditional software engineering characteristics such as reliability, efficiency and maintenance.
10. The interests, status and usefulness of cognitive ergonomics is better served by focussing on the further development of user interface design methods than by paying attention to what is supposedly most fashionable.
11. ETAG, as a notation based on cognitive psychology and applicable to user interface design may be regarded as a "common language for delivering cognitive psychology to HCI" (Green, Davies and Gilmore; 1996).
12. The necessity to rely on individual knowledge and design iteration hampers the application and the development of cognitive ergonomics even though "Was sich überhaupt beschreiben lässt, lässt sich klar beschreiben; und wovon man nicht schreiben kann, darüber muss man schweigen" (after Wittgenstein; 1922).

The Free University, Amsterdam, an academic institution, of protestant-christian origins, and established to be free from church and state, bans its students from expressing themselves in a number of theses, which, by tradition, belong to a doctoral dissertation. As such, these theses are presented here as a convenient place to raise a few issues, and hopefully, a few eyebrows and smiles as well, but otherwise, they should not be taken as a formal part of the doctoral dissertation.

Hmm, I must have been a rather angry young man by then. By now, it reminds of 'Testament' (Boudewijn de Groot & Lennert Nijgh, 1966). By the way, I gave up smoking, except for the occasional exhaust-fume-pipe. Maybe a sign of growing up and/or old :) 

Things to be remembered for: Decency

There is one rather specific thing that I specifically remember as a merit: decency. I remember two cases. The first had to do with taking your term as dean of the faculty. You clearly didn't seem to like spending so much time on 'administration' but someone had to do it. I have never been able to catch you in the act of something I did.

The second case relates to publishing research. In 1992 or 1993 I had completed a conference paper and, habitually, I had added you and Gerrit as co-authors. Gerrit, because of his contribution to the research, and you, because of all the textual improvements. Much to my astonishment, you refused to be a co-author because "I have not substantially contributed to the paper".

Your attitude in both cases contrast sharply with my own experiences at a University of Applied Sciences where some people habitually added their names to each and every paper by their subordinates, for their next career-step, I guess. Some other expert in organisational politics even went so far as to present himself as the author of my research and education, even without having contributed anything or being able to do so. As such: thank you for being a counter-example and a 'boss' worthwhile to work with (or 'for' for that matter).

Developments in the field

Software Engineering and HCI have developed in the course of time much like ICT in general did. From a hardware-oriented perspective, with the selection of the suitable mainframe programmer, I joined the field somewhere between Software Ergonomics with its investigations into the usability of programming languages and language constructs to suit the (humble) human programmer, and Human-Computer Interaction paradigm which investigated the grammar and semantics of interaction languages. From there, it only takes the concept of the Mental Model and the notion of ontologies to arrive at specification languages and models for Design purposes - as we did.
It always bothered me that we have never been able to properly overcome the differences in orientation between Software Engineering and HCI or Cognitive Ergonomics. Wouldn't it be nice if one could have been subsumed under the other, or when Object-Orientation could have bridged the gap?

It seems that there are some new opportunities to connect the two fields by the developments in design tooling, where Agile and Scrum bring flexibility to the design process, the selection of development frameworks and API's replace low-level program-coding by insight. Furthermore, in both fields, prototypes, demonstrators and the mashup-architecture enable incremental and iterative design. Finally, co-design, co-creation and the 'make' movement make the design process more democratic. So, perhaps in the end the differences can be overcome when we all end up, as equals and co-contributors.

About the author
Geert de Haan is active in HCI and Cognitive Ergonomics since 1986 on design methods for user interface design. He has worked on a number of Dutch and European projects on intelligent wearables, e-healthcare, cultural heritage and media design. Most recently, until 2014 he was employed at Rotterdam University of Applied Sciences (RUAS) as a senior lecturer and researcher Human-Centred ICT and Media Technology, teaching research and design methodology. Geert is specialised in formal and less formal methods to design usable, possibly social, yet intelligent and context-sensitive Human-Computer Systems as in Intelligent Sensor Networks, Ambient Technology and the Internet of Things applications. Since leaving RUAS, he continued the HCI activities and added growing his own biological food, renovating his house with natural materials, harvesting his own energy and 'desperately trying to be green'.

References