Tangible video analysis

November 11-28, 2013

In this project we will focus on the main challenge in user-driven innovation:
How an understanding of users and their practices can help generate innovative solutions.
It is well-known that video is extremely valuable not only as design inspiration, but also as platform for establishing requirements for what to be designed. The power of video lies in its richness: different viewers can observe different things, and different ways of looking help us discover different aspects of a practice.

Programme

We will study forkilfts trucks in action to develop video specs for Crown Equipment Corp, a truck producer in Ohio, USA. First we will analyse operator studies videos provided by Crown using the Video Card Game. Based on this we will edit a set of video collages that describe core issues of truck driving. Then we will do our own field studies of professional forklift truck drivers in Denmark to check the preliminary findings. With novel, tangible methods we will analyse these videos to produce video specs that can serve as platform for new truck designs, and try out how they work in a design workshop. In parallel, a smaller group may develop new analysis tools.

Teachers: Jacob Buur, Agnese Caglio, Mike Kirk Andersen.

Monday 11 Nov	Tuesday 12	Wednesday 13	Thursday 14	Friday 15
Video in Design w/ Congo case trial Crown video first look	IT Visions: Writing workshop	Make video cards	Skills: Ethnography (Forklift study)	Video Editing
L U N C H				
What have we got? 14:00 Crown intro skype Video Card intro	Skills: Video editing (Crown material)	Video Card Game	Video editing: Collages	Video Editing

Monday 18	Tuesday 19	Wednesday 20	Thursday 21	Friday 22
Uploading videos Prepare fieldstudy	Fieldstudy of forklift trucks. Small group: prep tangible analysis	Action analysis /Johs Designerly analysis	Skills: Facilitation (Design workshops)	Video analysis
L U N C H				
15:00 Expert feedback (Crown on skype)	Skills: Sketching 3	Tangible analysis sessions Reflection	Themes and video sharing	Video analysis

Monday 25	Tuesday 26	Wednesday 27	Thursday 28
Video editing	Video editing	Workshop preparation	09:15 Design workshop
L U N C H			
Workshop preparation Video editing	Skills: Portfolio	14:00 Research Workshop	

it-vest

UNIVERSITY OF SOUTHERN DENMARK

IT Product Design

Skillful forklift driving

Crown Equipment is a manufacturer of industrial, material handling equipment that is used in warehouses, manufacturing facilities, and outdoors. The most common and recognizable type of material handling equipment is the counterbalance forklift. Operating a forklift requires a degree of precision and skill to be productive and efficient, while remaining safe. Forklift truck operation is a fine example of embodied actions. It is very different from the symbolic operation of computers, but perhaps this is what IT interaction will aspire to in the future!

Past research suggests that operators value visibility, control precision, comfort and performance. However, fresh perspectives are needed to build a deeper understanding of operator driving behavior.

Crown is particularly interested in the following questions:
What is the behavior of forklift drivers today?
What behavior should Crown design for in the future?
What are some seemingly unintended actions (but may actually be functional)?
What is surprising?
Do they use any work-arounds or short-cuts?

Designing videos

Video is a strong tool for documenting people's activities. Video helps us understand what users of products do, who they are, what environment they inhabit etc. Often user specialists in a company will edit field study videos to convey findings to designers and thus influence new products towards more user-friendly solutions. This is not a straight-forward task, because users often do unexpected things, sometimes things that designers will have difficulties accepting as 'real' use.

In this project you will edit two types of videos:

Video Collages: Collections of clips that provoke designers to think by providing surprising contrasts between sequences. Video collages focus on themes of importance within the footage.

Video Specs: Edited videos that tell about (user) requirements for good design solutions. Where textual requirement specs are often abstract and assume contextual knowledge, video specs provide concrete images of what designers should aim for.

When editing such videos based on user studies sometimes our own ideas of what is interesting are not sufficient. We need the help of those people, who we study, to make sense, or of those designers, who we work for, to tell what is interesting.

In this course we will work with 'bringing back' videos to the professionals to hear their reactions, and we'll expose videos to designers to get their feedback. We will work iteratively to produce multilayered videos, including the reflective responses from drivers, designers and experts.

Tangible video analysis

In recent years Interaction Analysis methods have drawn attention to the more detailed processes of interaction, demonstrating how people act not just individually but in a social context.

Research-wise there is an interesting dilemma between the notion of video as data for analysis and of video as material for design. The first idea banks on abstract understanding as a base for designing new products. The second takes the stance that video should enter design processes as concrete building material – as a resource for action rather than as a representation. We will try bridge these two by developing tangible methods of video analysis, of creating 'designerly' ways of working with video. This poses exciting questions: how do different ways of looking at video affect what we see? How do we work with such material so that it provides grounds to provoke new understandings for designers?

Interaction Analysis has its origins in ethnomethodology and conversation analysis. These methods focus on making sense 'from within", that is, relying on how members themselves understand what is happening, rather than imposing external theories on what can be observed. In 1995, Jordan and Henderson proposed the Interaction analysis lab as a way to conduct collaborative analysis. This format brings several people together to analyze videos in detail, thus ensuring multiple perspectives while avoiding distortions given by possible preconceptions.

Tangible Video Analysis is a new approach developed at SPIRE. It is inspired by the Interaction Analysis Lab, but seeks to take it further by transforming the analysis into an active and constructive process through the use of materials. Tangible Analysis has roots in tangible interaction design. We started developing this approach because Interaction Analysis – though fine for analysing conversation – has proven limiting when looking at what role objects and environments play in people's actions and interactions.

In this project you will experiment with alternative ways of analysing videos by using objects and physical representations to bringing to the surface less easily articulated aspects of interactions.

Deliverables

The project is completed in teams of 2 students. Please produce:

Expert feedback session Monday, November 18 at 15:00
- A *Video Collage* for each team that explores a particular perspective on truck operation. The videos should be 2-4 min long. Upload by 10:00 for Crown experts to watch and comment in a Skype session.

Research workshop Wednesday, November 27 at 14:00
- A set of *Tangible Video Analysis Tools* that support designers and analysts in making sense of video footage similar to the forklift truck material.
- An *Instruction Leaflet* that describes your methods of Tangible Video Analysis.

Design workshop Thursday, November 28 at 9:15
- A set of *Video Specs* on DVD. The video specs should visualise requirements for operator friendly truck design, combining Crown footage, your observations of Danish truck operators, and feedback from operators and company.
- A *DVD cover* that introduces content and contains instructions for how to use the video material.

For the two workshops you need to create a programme that engages the participants in working with your material. This includes setting up the workshop space, producing extra materials (like posters), introducing your work, organising group activities, and facilitating discussions.

Guests and collaborators:

Johannes Wagner, professor of interaction analysis, Department of Design and Communication, SDU

Veronika Winter, research assistant, usability video, University of Applied Sciences FH Technikum Wien

Crown Equipment Corporation:
Michael P. Gallagher, Vice President – Design
Jill Laurence, Director – Design Research
Ryan Finch, Design Researcher

Literature and resources:

Buur, J; Fraser, F; Oinonen, S and Rolfstam, M (2010). Ethnographic Video as Design Specs. *OzCHI, Sydney*

Jordan, B. and Henderson, A. (1995) Interaction Analysis: Foundations and Practice. *Journal of the Learning Sciences, vol. 4, No. 1, 39-103.*

Buur, J., Beuthel M., Caglio A. (2013). 'Designerly' analysis of participation structures. In NORDES'13, *Nordic Design Research Conference, Copenhagen.*

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