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# User Centred Design Research Methods for Mobile Industry Practitioners

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## Introduction

This paper describes our deployment of a new method for observing and understanding the mobile user experience. This new method is built upon the concept of the *Dérive*, a theory and method appropriated from the French Situationists. In our research on mobile user experiences, the *Dérive* is used to inspire mobile storytelling.

The context for this work is an overarching research program – *Contemporaries* – where we study how the writing of stories could be integrated into everyday life to support people’s participation in social, economic, political and economic life. The broad aim of *Contemporaries* is to facilitate a multiplicity of voices in what Marshall McLuhan would call the new global village. One the most important points of our research agenda is the idea that media should be “Accessible to all”. Hence, we specifically focus on multimodal communication using a variety of techniques and tools for the mediation of expression. We ask if the media is an appropriate tool to illustrate and recreate individual or cultural expressions, and examine its costs, reliability, and ease of use. In this paper, we describe a case study investigating how youth, between the age of 14-18, could use mobile phones to express themselves through storytelling, how to make this

activity meaningful and valuable, but also how to facilitate ease of use, to make it more efficient and more accessible. Our goal is to motivate and enhance the user's experience of mobile storytelling.

To facilitate our workshops we used the Dérive method (a walk and an exploration of an environment without preconceptions, described below) as an inspirational tool to initiate this storytelling. Starting with a dérive using a mobile blogging tool, the storytelling workshop continues on a regular computer that is accessible either in the classroom or at home.

Most often storytelling is used to document user experience, however, in this case we have created a double loop where we also try to capture the user's experience in the doing of the storytelling task.

In the rest of the paper we describe and discuss in more detail the methods we used. First, we elaborate about how to use and motivate school children using the Dérive method. Second, we discuss the outcomes. And- third, we sketch out some ideas on how mobile storytelling could go hand in hand with observing and understanding user experience.

## On Dérive

Our research is based on methods that are anchored in both traditional HCI methodologies and action research. As researchers, we prefer to enter into an already established structure to see how actual work is done, rather than creating specific test groups. Our project has been supported by an active school community and municipal development plans in northern suburbs in Stockholm. However, action research methods often needed a catalyst to get started. In their Handbook of Action Research, Peter Reason and Hillary Bradbury (2001, p. 512) refer to the Scottish philosopher John Macmurray who notes that it is critical to emphasize “I do’ rather than ‘I think’” to initiate the learning process. Reason and Bradbury argue from this that the doing is the appropriate starting point for action research [ibid]. To emphasize doing, we chose to facilitate our workshops using the Dérive method. A dérive (drift) is an attempt at an analysis of the totality of everyday life through the passive movement through space (Debord, 1981). This method has been used in studies of architecture to explore a built environment without preconceptions. Many situationists have also used dérives for creating “psychogeographical maps”. These maps are built from the small snippets that form an understanding of bigger phenomena. As Simon Sadler (1998, p. 15) describes: “In discovering a small world we discover the whole world”. In a similar way we also read the school children collection of stories as a part of a bigger and shared story that form an identity of their dérive (Sadler, 1998).

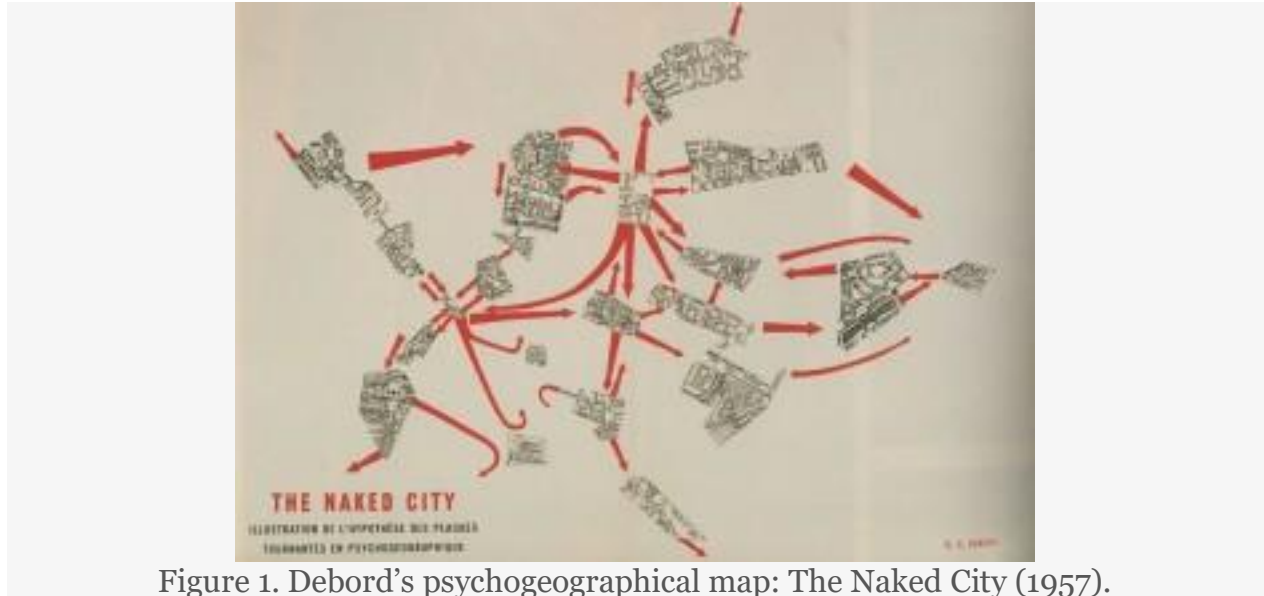


Figure 1. Debord's psychogeographical map: The Naked City (1957).

Situationism has gained some recent popularity in the HCI community (Gaver & Dunne, 1999; Home, 1996), mostly as inspirational tool to engage designers with modernist counter-culture. Our understanding of the *dérive* most closely resembles the idea of the cultural probe (Gaver, Dunne, & Pacenti, 1999). This uptake from a wide variety of disciplines to understand and design is rather typical for HCI, and its pros and cons have been discussed widely. Some would argue that these methods are too often used without reflection and reference to their intent. Our approach is to focus upon the meaningful and real stories that are generated by using the *dérive* as an inspirational tool.

### **Storytelling Workshops**

The storytelling workshops conducted within *Contemporaries* included approximately 80 youths from the ages of 14-18. Our participants had an equal gender balance and came from mixed socio-cultural backgrounds. In these workshops, we used the *dérive* to

initiate a new moment within an ongoing activity. For example, in a class that studied the industrialization period we talked about historical findings from the neighborhood and how these artifacts formed a shared collective memory that capture this place. A representative from Stockholm City Museum helped-out by bringing real objects to the workshop. She animated these objects by telling a small story about how they were initially used and how they were found after hundreds of years. With this in mind, we then demonstrated the method, went through a small training exercise, and then sent the students, equipped with mobile phones, out on a derive on their own.

In our workshops, we used two different set-ups. The first set-up used Android phones loaded with an application for mobile blogging. In the second set-up, we asked participants to use their own phones and standard tools, like SMS and MMS. We gave the participants vouchers to cover their costs, but this worked less well due to the broad range of cell operators that our young group are using. For forthcoming studies we would recommend using some kind of premium SMS/MMS services. We will return to a discussion about the relative trade-offs and advantages of each approach.

One of the difficulties we encountered was to explain what we meant by the *dérive* without being too unclear or specific. We learned in the pilot phase that some participants get “lost” and needed more specific instructions. However, if the instructions are too specific, then this could compromise the core idea of the *dérive* and lead to the generation of very few novel stories. We chose to provide some simple examples of how to do a non-planned movement through space, for example, creating

non-deterministic rules such as to make turns on certain events (e.g. whenever you see a red car or meet a person with a red jacket). Furthermore, we briefly showed some examples of historical psychogeographical maps without going into the details. As a result, we learned the importance of conducting a small training exercise before the *dérive*, like sending a text update or taking a picture of themselves. These sessions had a significant positive impact on the users' experiences of the *dérive* and influenced how much they used the mobile blogging tool. Once again, doing creates understanding.

We incorporated these lessons from the pilot phase into the first part of our subsequent workshops. In the second part of the workshop, the participants were introduced to the basics of WordPress and given access to personal blogs using the regular computers in the classrooms. An informal discussion with each participants while they was working with WordPress provided us with a rich feedback about the *dérive* and the meaning of their stories, as well as their experience of the mobile tools and the use of multimodal media and expressions. This discussion, or conversation, consisted both of pre-prepared questions as well as free form, open-ended conversation. The materials gathered during these workshops were of three primary types: voice-recordings from each session, the actual blogs produced, and their answers to the survey questions.

Two different kinds of workshop formats were tested. The first workshop involved a longer *dérive*, followed by a later session in a computer room, where they edited and added material to their blogs. The other workshop compressed both the *dérive* and the compilation of their collected material into a three-hour workshop. One substantial

difference between the two workshops was the kind of material the participants were allowed to use. In the first workshop, they could use all of the photographs and videos collected, regardless if they had sent them or if they were stored on their mobile phone. In the other workshop, they were limited to working with material sent from their mobiles during the actual *dérive*. What did we learn from these two different formats, and two different set-ups?

First of all, we learned that introducing a tool, like our mobile blogging tool for Android phones, could fall short of our expectations. We observed in the pilot phase that the mobile blogging tool often hindered the participants in their *dérive* with technical obstacles. The use of well-known, familiar SMS/MMS services took much less effort and enabled the participants to use their own phones. Most important, this provided better results in terms of their stories; mainly because they were more detailed (e.g. more text) and much more frequent (due to familiarity with SMS). But we also learned that there is a need to provide better feedback through the SMS/MMS services to engage participants into further use. The most common comment was that usually when you send a regular SMS/MMS you will get and then expect a prompt reply. This feedback can also partly mimic the online experience that otherwise is missing when using SMS/MMS services instead of an online mobile app. At one point the use of their regular mobile phones and SMS/MMS was less favorable. It was not possible to follow and comment on other work, their conducting of searches, or for connecting the material that was being generated with other resources. The integration between a mobile blogging tool and other online resources, such as social media and email, becomes more

critical to integrate into mobile story-telling projects as the services become more commonly used. One clear observation we had was this: some questions generated in the *dérive* faded quickly away if they could not be concurrently explored. For example, it was commented that without being able to search for more information, e.g. Wikipedia, while they created the posts they was considered less interesting than others even later on. Nevertheless, the bottom-line is that providing advanced handsets seems to work less well. Most participants had sufficiently advanced phones of their own. Some additional service could be provided, and if needed, they could be hacked together on the server side.

Second, we learned that the longer workshop format resulted in a perceived lack of connection between the gathering of data and the manipulation of it. In the beginning of the project, we thought that the storytelling work would improve if participants were given a chance to let the experience of the *dérive* sink in, and they were given time to reflect upon it. This worked less well than expected. Many of the ideas gained by the *dérive* but not captured by the posts in the blog faded away rather quickly. It seems like there is a natural division between documenting a story and telling a story when using a mobile device. Very few wrote longer pieces of text on their mobile device. Rather, they used other forms of multimodal expressions and tagged their images with a few words that were later elaborated using the WordPress software on a regular computer. Hence, it seems that the storytelling has two natural phases, one on mobile part for capture the moments with pictures and small notes, and one using the web-based authoring tool for WordPress on a regular computer.



Figure 2. Storytelling workshop Where are the images?



Figure 3. The Contemporaries web



posts along a timeline, e.g. being able to control the sequence of the blogs. We also observed that our workshop participants lacked simple tools to help create dynamic groups of users that could follow each other blogs easily. This preliminary result points to the need for the creation of shared experiences in the workshops, as well as the need for tools that can facilitate greater interplay between the developments of the group and individual. In forthcoming studies we are planning to build some new additional WordPress tools along these lines.

### **Capturing the Mobile Experience**

Carrying out research on mobile user experience is a difficult task. In order to observe and understand the mobile user experience, we need to capture multiple aspects of what people do and feel about using mobile phones and services. Most often, within the world of HCI, we develop mobile prototypes, deploy these applications on the personal handsets of real users and then observe what happens. Shifting needs, contexts and the ubiquitous use of mobile phones makes it very difficult to observe naturalistic mobile behaviours and ask intelligent research questions about mobile user experience.

The *dérive* method overcomes some of these problems. First of all, the method allows a balance between flexible versus closed instructions, and hence constrains some aspects of the context of use, at the same time as it allows for discovery. The bigger question here is whether the method can push for an open use of mobile media in storytelling to facilitate people's participation in society. Winograd and Flores (1985), among others, argue that language is intrinsically tied to a situation. The context defines what the

“words” mean as much as the “true” definition and composition of a, i.e. if you use an image that is easy to relate to that could become the common, and true, representation for a group of people, instead of an established text.

This leads us, secondly, to use the storytelling generated by the *dérive* as a mean to analyze the user experience. There are a couple of different ways of measure, or test, the quality of the overall user experience. Most common is through various forms of self-reporting methods, such as diary methods (Bolger, Davis, & Rafaeli, 2003) and Experience Sampling Method (ESM) (Csikszentmihalyi & Larson, 1987). In this case we have created a double twist. In the reasoning about the user experience we use a cyclical process, where studying and understanding the user experience becomes an intrinsic part of the actions employed. A *dérive* is a situation-creating technique aiming at turning the city around. This “turning around” or *détournement* is a dialectical tool and in this context could be used as a method to debate and discuss the mobile experience.

## Notes

Nordic (not incl Sweden):4,6% Europe:14,7% Asia:47,2% Africa;27,5% Others:6,0%

A modified version of Postbot, <http://nickthecook.wordpress.com/>

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## **Biographies:**

Konrad Tollmar is an Associate Professor at The Royal Institute of Technology. His main research interest is to better understand how interactive technologies become a part of people's everyday practice and life. To get there Konrad tries to combine interaction and co-operative design with novel use of technologies, such as computer vision, mobile computing and virtual reality. From 2010 he is leading the Mobile Service

Lab at KTH / ICT / CoS with a focus on mobile infrastructure and mobile services. Prior to this, I worked at MIT and The Interactive Institute. Konrad's most recent research has also expanded into market research and analysis where he is a research director at the Institute for Economic Research.

Robert Ramberg got his PhD in cognitive psychology at the department of psychology, Stockholm University and now holds a position as professor at the department of computer- and systems sciences at Stockholm University (SU). At the department he is the research director of K2-lab (the Knowledge and Communication Laboratory). He has published numerous articles in journals and refereed conferences. He has served as program committee and editorial board member for several international conferences as well as acted as reviewer for several international journals within the field of technology enhanced learning.

In the early 90s his research had a strong focus on trust related issues where aspects such as understanding and learning from information communicated by human and artificial expertise were a part. Over the years his interest in theories of learning (socio-cultural perspectives on learning and cognition), pedagogy and how these theories must be adapted when designing and evaluating technology enhanced learning and training environments has grown. Of particular interest is how artifacts of various kinds (information technology and other tools) mediate human action, collaboration and learning. A current research interest is mobile learning and collaboration