

*Doing The Single Person Study in Human  
Computer Interaction (HCI)*

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# DOING A SINGLE PERSON STUDY IN HUMAN COMPUTER INTERACTION (HCI)

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**Abstract.** This paper presents how a single person study can be done in the field of Human Computer Interaction (HCI). This single person study was explored using a participant observation method known as Friendship Observation that utilises more personal data gathering tools such as diary studies, text messages and personal emails. Since interpretation of the data was done based on the research-subject relationship, some ethical issues related to the reliability, and validity of the data were raised. Despite this criticism, this type of study can offer some potential benefits to HCI community such as a methodology for a user-centred design and designing affective interaction.

## 1. Introduction

In this paper, we present a study of a single person. While this single person study represents an extreme form of qualitative work, it is rather a common form of doing research in certain areas of academic studies. For example, when psychology emerged as a new science during the 19<sup>th</sup> century, statistical analysis was still in its infancy. Behaviourists used the smallest  $N^1$  possible: they studied their own behaviours or the behaviour of a single individual. Some of the pioneers in psychology who used a single individual in their studies include:

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<sup>1</sup> The number of subject in a study.

- Gustav Fechner (1860) investigated basic psychological methods which are still used today to measure sensory thresholds and discover principles of psychophysics. He worked extensively on his brother-in-law.
- Charles Darwin (1877) studied child development, accomplished by keeping a detailed diary of his own son's childhood. It was published as "A Biographical Sketch of an Infant" in the journal *Mind*.
- Ebbinghaus (1885) studied memory by examining his own ability to learn and recall the lists of nonsense syllables.

Human Computer Interaction (HCI) has roots in psychology. Therefore, doing user studies in HCI have been largely influenced by methods in psychology. Since studying one subject or person is rather common in psychology, therefore, it is also common in HCI. Very often this type of study is done using a case study method.

A single subject case study often produces thick description of the subject. Yin (2002) explains that thick description involves an in-depth description of the entity being evaluated, the circumstances under which it is used, the characteristics of the people involved in it, and the nature of the community in which it is located. He also adds that thick description involves interpreting the meaning of demographic and descriptive data such as cultural norms and mores, community values, ingrained attitudes, and motives.

Although an individual case study is able to provide thick data, it is argued that it has limited external validity (Graziano & Raulin, 1997; Liebert & Liebert, 1995) meaning that the results of the individual case study can be generalised only to another identical case in the same setting (Christensen, 1987). Since HCI is a branch of computing sciences which largely deal with comparing many people and quantifying data in numbers, this criticism is also applied to any single subject study in HCI. Because of this criticism, little is done in HCI to apply the results from single subject studies to a wider user population.

However, Platt (1992) and Ragin & Becker (1992) argue that we can still generalise from an individual case. It depends on the case we are speaking of and how it is chosen. Campbell (1969) notes that generalisation is a product of careful analysis. W. I. B. Beveridge (1950) in his book 'The Art of Scientific Investigation' notes that "more discoveries have risen from intense observation than from statistics applied to large groups".

Motivated to understand how such study can actually benefit HCI research as a whole, we explored the study of a single person. This paper however highlights the methodology of doing such study for our research.

## **2. Literature review**

Literature suggests that if we are looking for exploration, we should undertake a qualitative research. Qualitative research studies typically examine the interplay of all variables in order to provide as complete an understanding of an event or situation as possible. This type of comprehensive understanding is arrived at through a process known as “thick description”.

In scholarly circles, case studies are frequently discussed within the context of qualitative research and naturalistic inquiry. Case study methods involve an in-depth, longitudinal examination of a single instance or event: a case. They provide a systematic way of looking at events, collecting data, analyzing information, and reporting the results. As a result the researcher may gain a sharpened understanding of why the instance happened as it did, and what might become important to look at more extensively in future research. Case studies lend themselves to both generating and testing hypotheses (Flyvbjerg, 2006).

For example, in designing a system for a specific group of people, very often a single individual is studied. Cole and Dehdashti (1990) and Paradise and her colleagues (2004) both studied a woman with traumatic brain injury to understand how a person with mild cognitive impairment copes with the everyday life. They conducted this type of study to help them design an application system for individuals with similar conditions. Thorngate (1986) suggests that in order “to find out what people do in general, we must first discover what each person does in particular, then determine what, if anything, these particulars have in common”.

Studying an individual case as in a single piece of software can also be done to understand specific design requirements or problems. For example, Hahn (2001) studies an online auction – eBay (<http://www.ebay.com>) – to understand how the design of such marketplace can affect how people browse and search for products at the individual level.

In teaching and learning HCI, single subject case studies are often taught to students to provide them with specific skills and knowledge before they can do a project on their own. Rosson and her colleagues (2004), for example, introduce related single case studies to their students at Virginia Tech ‘just-in time’ to support their semester long group projects.

Studying a single case or subject allows for understanding of things which might be important for an individual but which might not get highlighted if more individuals or cases are studied at one time, as shown by Cole (1990), Hahn (2001) and Paradise (2004). However, most of single case or subject studies in HCI do not highlight the implication and the significance of such study to HCI research as a whole.

### **3. Methodology**

This research aimed to understand how a mother used her mobile phone in her everyday life. We explored her everyday life to help us understand how she used her mobile phone. Our exploratory study was done using participant observation methods. We first got to know about her use of mobile phone from her diary in our first study of the use of mobile phone. Then we carried out a series of interviews to understand further about her use of mobile phone. Personally, we enjoyed each other's company. We felt that we could get along very well due to some similarities between us: we were both mothers doing PhDs. In doing the study, we inevitably became friends. Most of the time during the study period, we participated in her everyday life. Through our friendship, did we learn a lot about each other including personal characters, behaviours, and personal lives.

To understand how this mother used her mobile phone, we initially asked her to record her activities with a tape, but she did not agree with this idea because she said that she was not 'good' with tape recording. Then she suggested that she could write a diary of the kind of activity she did with her mobile phone. She personally thought that she could express herself better through writing.

#### **3.1 Diary study**

A diary is "a document created by an individual who has maintained a regular, personal, and contemporaneous record" (Alaszewski, 2006). Diary studies have roots in multiple disciplines. Biographers, historians, and literacy scholars have long considered diary documents to be of major importance for telling history. Sociologists employ diaries to construct pictures of social reality from the actor's perspective. The use of diaries in HCI seems to be influenced by psychology. However, variations on the technique have some influences from various disciplines such as Health and Medicine, education, anthropology, and architecture.

In HCI, diary studies are used to capture activities that occur using technology in the real environment. For the similar reason, our subject was required to write her activities with mobile phone on a paper diary for a period of seven consecutive days. Ideally, she had to record any activity as it occurred. But she was given some flexibility: she did not need to record the activity as it occurred

everyday if she decided not to. She, however, should do it as soon as possible to avoid being forgetful if she had done it much later. Upon collecting her diary, she said that she really appreciated the flexibility given to her. She said that she felt less pressure.

A diary can be highly structured (e.g. Chin et al., 1992) or unstructured (e.g. Adler et al., 1998). In this research, our subject was not told how she should write her diary. Therefore, it was entirely up to her to do it.

She came up with a rather comprehensive diary: she categorised her activity with mobile phone into Days and then detailed the Days category by classifying it into ‘morning’, ‘afternoon’, and ‘evening’ (see Appendix A for the Diary). Despite categorisation, her diary was still intimately written. She actually shared her feelings in the diary.

From the literature, it is recommended that the researcher discuss the diary entry with the subject everyday. However, in this research, we did not do it as suggested because we trusted her that she would do it anyway. Doing a diary study for a week was already a big commitment for her. Checking on her everyday during the diary study period, therefore, would definitely add more burdens on her.

Upon analysing the diary, we realised that she often used her mobile phone for text messaging (refer to her diary in Appendix A). This contradicted to what she had said in the previous study - she said that she often used her mobile phone as an alarm. She did not really discuss how she used her mobile phone alarm in the diary. There were only two times she mentioned about using the mobile phone alarm - at the bedtime every night and on Day 2 where she explained how she used alarm as a time management tool (refer to Appendix A).

After reading her diary, we were curious to know more about three things: how she used the mobile phone alarm as time management, why she liked text messaging, and what other activity she might do with her mobile phone which she did not get to share it during her diary study. For this reason, we decided to ask her face-to-face.

### **3.2 Interviews**

Kvale (1996) suggests that interviews, at the most basic level, are conversations but with a purpose. In general, interview can be a valuable research method for exploring "data on understandings, opinions, what people remember doing, attitudes, feelings and the like, that people

have in common" (Arksey and Knight, 1999). We used interviews in an exploratory manner for two reasons: (1) we wanted to investigate and understand three things: how she used her mobile phone alarm, why she liked text messaging, and what else she did with her mobile phone, and (2) from personal experience, we felt that a woman could better express herself through story telling.

We had a lot in common and shared similar experiences, understanding, and beliefs: we were mothers doing PhDs struggling hard between family and study commitments. From the interviews, we felt that we were really comfortable with each other and therefore, she felt free to tell her stories in her own way. Two reasons were possible for this feeling: we were familiar to her – she used to participate in our study and we both were women. As a researcher, it was important that she felt comfortable and trusted me. Many female researchers suggest that a closer relationship with female interviewees can produce a valid and meaningful account of women's experiences. The emphasis here is to acquire deep knowledge and authenticity (Gubrium and Holstein, 2002) of her experiences with mobile phone, and to gain her trust that we as the researchers would not exploit her for the sake of our study.

The subject's responses to the questions in the interviews provided some quotations which became the main sources for the raw data, for example, "spice up my life", "I have another priority in my life", and "not everyone can do it". Patton (1986) notes that quotations "reveal the respondents' levels of emotion, the way in which they have organised the world, their thoughts about what is happening, their experiences, and their basic perceptions".

Although interviews were structured in the beginning (some questions were prepared for the interviews), they eventually became unstructured because the subsequent questions were 'spontaneously' asked in the interviews. This happened because we inevitably became interested in her answers and wanted to know more about them 'there and then'.

Our subject had participated twice in our studies: the study of mobile phone use and the exploratory study of a single person. We realised that the need to get back to her for more data had indirectly given us more opportunities to know her better. One possible reason was her personality. We realised that we enjoyed her companionship. Furthermore, we had a lot in common and shared similar experiences, understanding, and beliefs. Eventually, we became closer to each other. We became friends.

From the interviews, we learned that it was easier to get 'what' and 'how' questions answered than 'why' questions because people sometimes did not always understand certain behaviours that they do. For example, when asked about a reason for being dependent on the mobile phone alarm, she replied that she had many commitments and had to manage the house all by herself. Although the

answer was true in one aspect, I did not really think that it was the only reason for her reliance on the mobile phone alarm. I believed there must be some other explanations to describe her dependency on her mobile phone alarm.

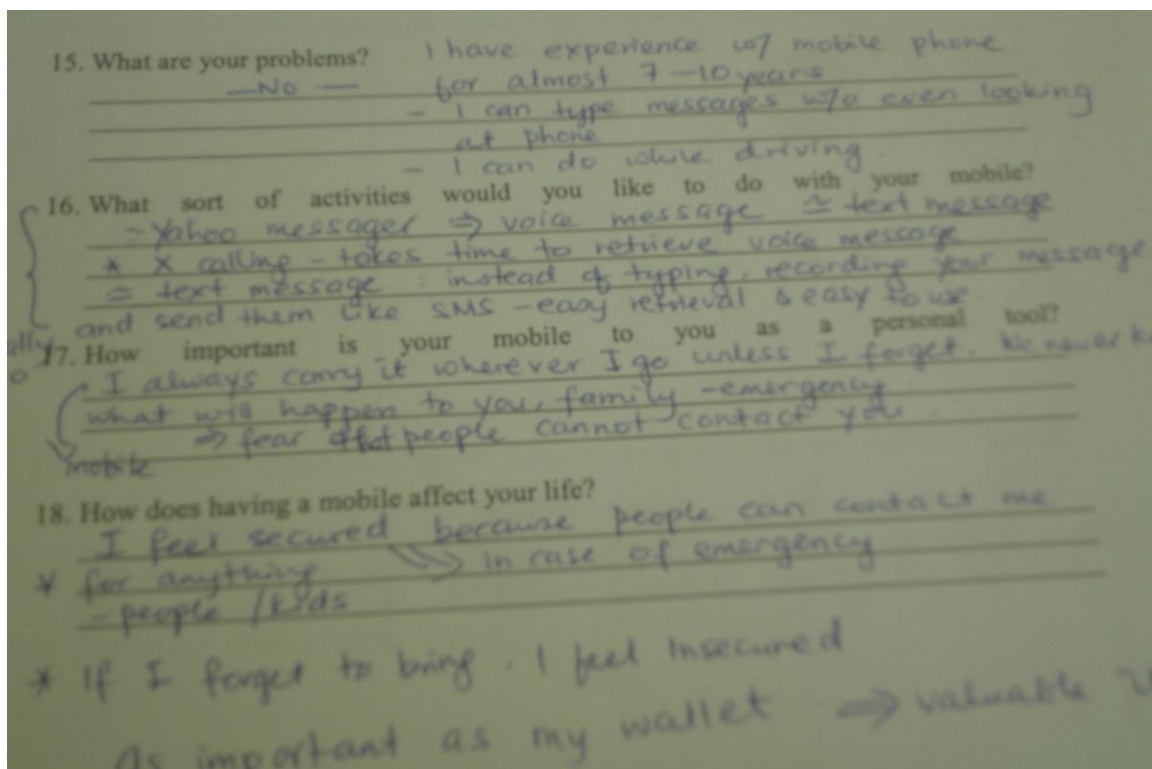
### 3.3 How we did the analysis

Analysis was done based on sources that are gathered from the fieldnotes, personal emails, and friendship observation.

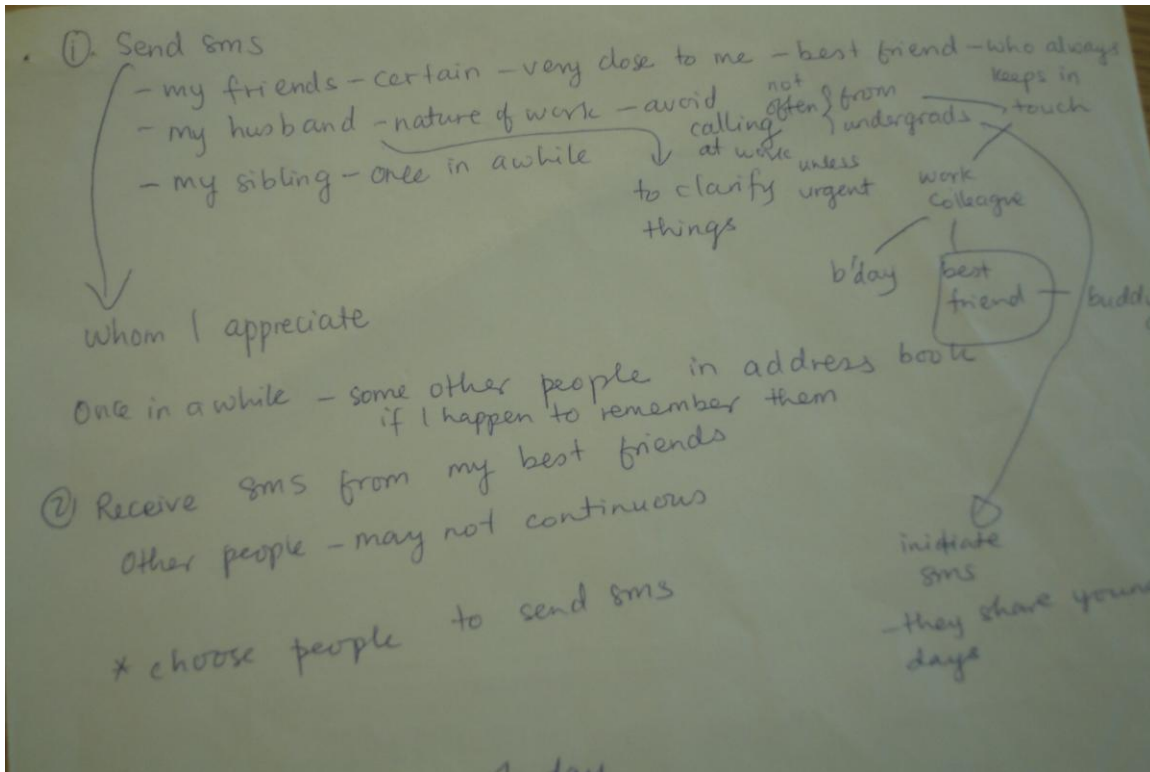
#### 3.3.1 Use of fieldnotes

Main sources of data for the research were from the diary study (Appendix A) and the interviews. The interviews were both done formally and informally. Figure 1 shows a questionnaire that records data in an interview, whereas Figure 2 shows a record of a telephone conversation.

Figure 1. An excerpt of the first interview of mobile phone use.



**Figure 2.** A handwritten note taken during a telephone conversation.



### 3.3.2 Use of personal emails

As friendship grew, we happened to be frequently in touch with each other. We often talked over the phone, texted messages, and even emailed each other. Personal emails can help inform a reader implicitly about the sender. For example, some of her personal emails somehow helped me understand a type of person she was. In particular, the content of the email in Figure 3 recommends that the Muslims read the Surah Yasin, because this surah offers huge rewards to the readers. The content of the email in Figure 4, meanwhile, helps the readers ponder upon what we have done so far and what we can do to be a better person. Basically, the emails shown in Figures 3 and 4 implicitly indicated that she cared for her friends. Despite its potential benefit, there is a risk associated to the use of the personal emails as a data gathering tool: the personal email may get deleted easily due to space problems.



**Figure 3.** An excerpt of an email which was written in Malay language. It is about the secret of a verse, Surah Yasin, ayah no 58 from the Holy Quran.

**RAHSIA SURAH YASSIN AYAT KE 58**

**Barangsiapa yang membaca YAASIN sepenuhnya dan pada ayat ke 58 surah tersebut "SALAAMUN QAULAN MIN RABBIN RAHIM" diulang sebanyak 7 kali untuk 7 niat baikmu, Insya Allah dengan izin Yang Maha Esa dan Maha Kuasa, semua hajatmu akan dikabulkan.**

**Jika boleh niatkan sebegini:**

- 1) **YA-ALLAH YA-RAHIM**, ampunkan dosa-dosaku dan saudara-maraku
- 2) **YA-ALLAH YA-RAHMAN**, kurniakan aku isteri, suami, anak-anak yang soleh dan mencintai islam
- 3) **YA-ALLAH YA-RAZZAK**, kurniakan aku rezeki yang berkat, kerja yang baik dan on't a didunia dan akhirat.
- 4) **YA-ALLAH YA-JABBAR**, makbulkan hajat penghantar maklumat yang aku dapat ini
- 5) **YA-ALLAH YA-MUTAQABBIR**, jauhkan aku dari sifat khianat dan munafiq dan miskin
- 6) **YA-ALLAH YA-WADUUD**, kurniakan aku dan seluruh umat Muhammad yang beriman kesihatan zahir batin
- 7) **YA-ALLAH YA-ZALJALA LIWAL IKRAM**, makbulkanlah semua hajatku, dan redhaikanlah aku.....

**AMIN.**

**Sampaikan dakwah ini kepada sahabat anda seramai 7 orang atau lebih, tiada kerugian bahkan digalakkan. Ikhlasikanlah hatimu menyampaikan dakwah ini kerana Allah.**

**Dunia adalah pentas, akhirat tempatnya yang sebenar...**

**Figure 4.** Content of a personal email that shows some word phrases by famous people.

*"I on't know the key to success, but the key to failure is to try and please everyone" Bill Cosby.....*

*"Love looks through a telescope; envy, through a microscope" Josh Billing.....*

*"kind words can be short and easy to speak but their echoes are truly endless" Mother Teresa....*

### 3.3.3 Use of personal text messages

There were times that our subject had some emotional roller-coaster feelings, especially when she was thinking about her PhD work which seemed to be “dragging” her for years. She always knew that she often felt better if she could share her feelings with her friends. She believed that moral supports from family and friends were important in helping her cope with a difficult situation.

Emotional supports can be in terms of ‘soothing words’, ‘words of thoughts’, ‘words of courage’, and any nice words that can be considered as motivators. These words can come from word phrases from famous people, quotes from Quran and Hadith, or simply nice words from a friend. An example of a text message that was received from her is as follows:

*Dear God  
Don't need lots of frens! As long as real ones stay with me, so bless them all, especially the sweetest one reading this.*

### 3.4 Friendship Observation

In addition to fieldnotes, personal emails and text messages were also used for the analysis purposes. We gathered all of her emails and text messages that were sent personally to us due to our friendship. Observing her behaviour indirectly using personal tools such as emails and text messages could help us as researchers understand better about her use of mobile phone. This indirect observational technique known as ‘Friendship observation’ emerges as part of doing research due to our friendship.

We were a part of the subject’s culture. Studying her reflected upon ourself: who we were, what we did, what we believed, etc. In other words, studying her made us become more aware of the things that we often took for granted, for example, the sacrifice made by our loved ones for us in this journey of our ultimate dream.

As her friend we may not need to get her permission in order to know her better, but, as a researcher, it was an obligatory to ask for her permission. However, we only obtained her consent verbally, not on a written statement. Perhaps this had to do with our friendship: we tended to do it more informally. For the research’s sake, she gave us her consent. We told her that we might study her from time-to-time for my research. In this situation, we played dual roles: a friend and a researcher, which often overlapped with each other, therefore making the boundary blurred. We had to be very careful when dealing with this matter. One common reason was that we had to guard

ourselves from making personal judgment based on her behaviour and attitudes. The next section will discuss some possible ways to increase the reliability of the data.

The data gathered from this observational technique is often very personal: my understanding about her personal characters and her everyday life. This deep, personal or known as empathetic understanding led to the prototype of a personal application called ‘Personal Motivator’ (Fariza, 2008).

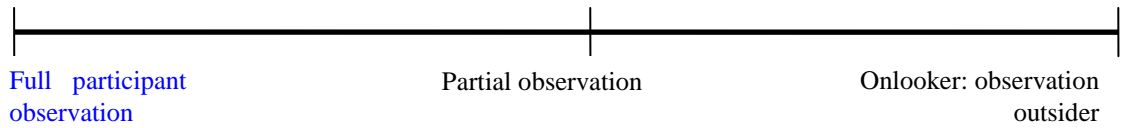
In one aspect, friendship observation is indeed a type of covert participant observation. However, there are some distinctions between these two observational techniques. The following table highlights the differences and similarities between Friendship observation and covert participant observation.

**Table 1.** Friendship observation and participant observation.

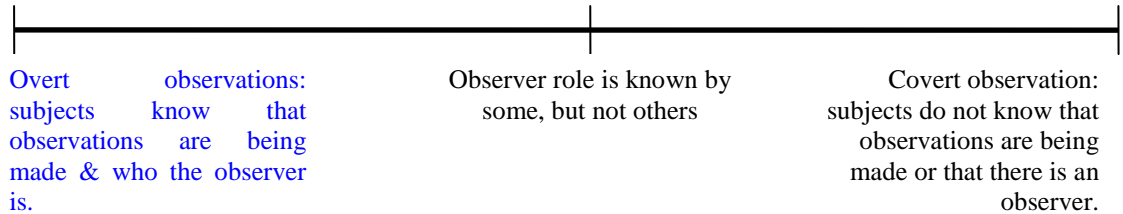
<b>Criteria</b>	<b>Friendship observation</b>	<b>Covert participant observation</b>
Immersion in culture	The researcher is <b>a part</b> of the culture. Studying the subject helps understand herself and her culture better.	The researcher usually is <b>an outsider</b> . To understand the subject, she has to immerse herself in the setting to understand the day-to-day activities of people under study.
Revealing the purpose of the study	The intention of the study must be made explicit and obtained from a friend. Nevertheless, the researcher’s presence <b>may not pose problems</b> due to their friendship.	The intention of the study <b>may not be made explicit</b> to minimise the effect of researcher’s presence to the subject.
Playing of roles	The researcher plays <b>dual roles</b> : friend and researcher, and eventually these roles overlap each other, making the boundary blurred.	

**Figure 5** on the next page shows how our friendship observation (shown in blue colour) fits into the Five Dimensions of participant observation (as adapted from Michael Quinn Paton, 1986).

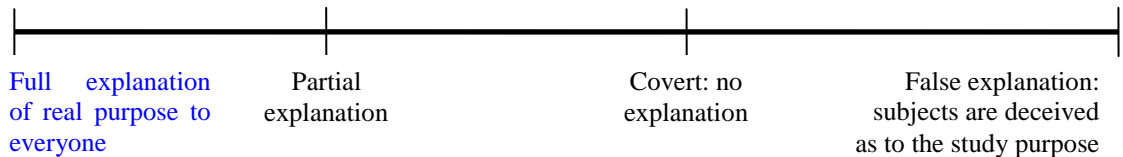
1. Role of the observer



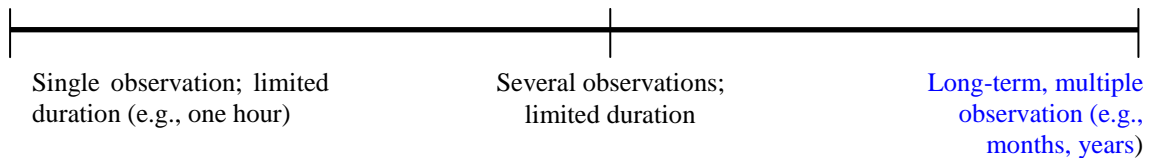
2. Portrayal of role to others



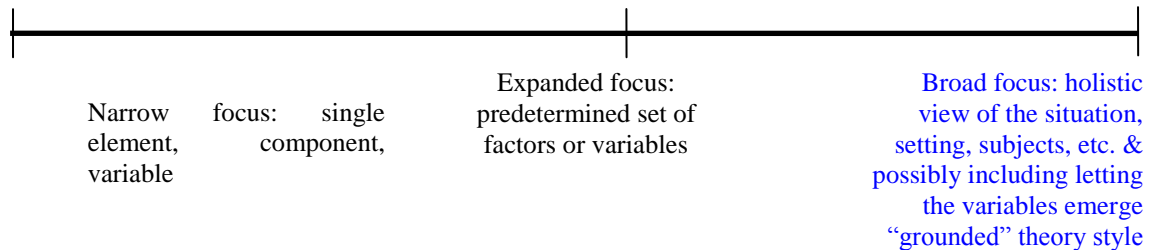
3. Portrayal of study purpose to others



4. Duration of observations



5. Focus of the observations



#### 4. Reliability Issue in Friendship Observation

Friendship potentially raises some methodological issues such as how reliable is the data collected based on friendship and how valid is the study. Fariza (2008) discusses in detail how friendship can influence the validity of the study.

The main weakness is that with friends, we seldom (or never) bother to double-check what we think of our friend because we always thought that we understood her better than anyone else. While it is common to say that “You’ve got to trust me because I am her friend”, I knew, as the researcher, that I had to be very careful with my interpretation because as her friend, there is some possibility that I would make interpretations based on my [subjective] personal judgment.

The following steps, however, can be taken in ensuring that interpretation based on friendship is more reliable:

1. Ask the subject again – A few times we had asked her about her particular behaviour using different questions (rephrase the questions) at different time. Here, we learned an important lesson. As her friend, it was okay for us to ask her about, for example, how she did something. However, it was not easy for us to ask for an explanation for her behaviour. There was one time when we asked her about certain behaviour, she looked surprised and said, “You should have known it”. As her friend, she expected that we knew her better than anyone else, therefore asking a question about her behaviour or action seemed inappropriate based on our relationship. Her such reaction was probably because she saw us as her friend, not as a researcher at that time.
2. Observe to see if the same behaviour gets repeated. It may take months or even years to see if the same behaviour gets repeated, but interpretation based on repeated observation proves more reliable. From our friendship, we could describe our subject as a person who can easily shed tears upon reading a simple but meaningful message from a friend. We had seen this behaviour repeatedly at different times in different situation. In fact, she had once said, “I am often touched with nice gestures from a friend”. In addition, her old friend who visited her recently from Leeds also confirmed this behaviour.
3. Refer to literature – in order to make sense of what we had in my mind about her, I had also referred to previous studies. For example, she often texted messages to certain people who were close to her to maintain their relationships. Reid and Reid (2004) confirm that texters are more likely to text to a particular group as opposed to many groups and texting can facilitate a deeper, more meaningful relationship.

## **5. Discussions**

From our study of a single person, we observed and identified the followings as the potential benefits that Single person study can deliver to the HCI community:

### **5.1 As a methodology for User-Centred Design (UCD)**

User centred design emphasises that the designers should understand users. Understanding users in fact is the first step in a UCD methodology. One technique to help designers understand users by studying users in detail, and studying one person in detail, as highlighted in this study, can help the designers understand, not just this person but also some other people, better.

As a methodology, it also helps the researcher develop a ‘bottom-up’ analytical skill – an ability to generalise a condition based on a specific context. In addition, it serves as a learning process for the researcher. As highlighted by Dreyfus and Dreyfus (1986), a single person study can produce a type of context-dependent knowledge that helps allow people to move from being beginners to experts.

### **5.2 As a methodology for Affective Interaction Design**

Studying a single person allows us to understand that person more deeply than we do many people. Due to an in-depth study of a person, we discovered the similarities and differences between us. As highlighted in this paper, our subject and we became friends due to similarities between us. We shared similar beliefs, understanding, and experience. As a result, we were able to empathise with our subject. Empathy is a term that describes an understanding of someone’s feelings as though they were one’s own. In fact, empathy is a skill needed for designing for affective interaction such as shown in Fariza’s work (2008). Affective design interaction can be a result of an effective study of a single person. This research has shown just that.

## 6. Conclusion

In many cases, experimental method requires ten or more participants and usability evaluation as Nielsen (2000) suggested requires at least five users. However, this research has shown that in some situations, just one subject might be sufficient to learn new things and propose niche designs. Although there is more research to do, this research has shown that single person study can be at least a promising method delivering benefits such as a methodology for user-centred design and affective interaction design.

## References

Adler, A., Gujar, A., Harrison, B. L., & O'Hara, K. (1998). A diary study of workrelated reading: Design implications for digital reading devices. CHI '98, pp. 241-248.

Alaszewski, A. (2006). Using diaries for social research. London: Sage Publications Ltd.

Arksey, H. and Knight, P. (1999). Interviewing for social scientists: An introductory resource with examples. London: Sage.

Chin, J. P., Herring, R. D. and Familant, M. E. (1992). A Usability and Diary Study Assessing the Effectiveness of Call Acceptance Lists. Proceedings of the Human Factors Society 36th Annual Meeting, Vol. 1, pp. 216-220.

Christensen, C. R. (with Hansen, A. J.). (Eds.). (1987). Teaching and the case method. Boston: Harvard Business School Press.

Cole, E. and Dehdashti, P. (1990). Interface design as a prothesis for an individual with a brain injury. SIGCHI Bulletin. Vol. 22, No. 1, pp.28-32.

Dreyfus, H., Dreyfus, L., & Athanasiou, T. (1986). Mind over machine: The power of human intuition and expertise in the era of the computer. New York: Free Press.

Fariza Hanis Abdul Razak. (2008). Single Person Study: Methological Issues. PhD Thesis. Lancaster University, UK.

Fechner, G. (1860). Elements of psychophysics. This translation of these passages from Fechner's Elemente der Psychophysik first appeared in Rand, Benjamin (Ed.) (1912). The Classical Psychologists (pp. 562-572). Boston: Houghton Mifflin, and was reprinted in Herrnstein, Richard J. & Boring, Edwin G. (Eds.) (1965). A Source Book in the History of Psychology (pp. 66-75). Cambridge, MA: Harvard University Press.

Flyvberg, B. (2006). Five Misunderstandings about case-study research. *Journal of Qualitative Inquiry*. Vol. 12, No. 2, pp. 219-245. Sage Publications.

Graziano, A.M. & Raulin, M. L. (1997). *Research Methods: A Process of Inquiry*. New York: Harper Collins.

Gubrium, J. F. and Holstein, J. A. (2002). From the individual interview to the interview society. In Gubrium, J. F. and Holstein, J. A. (Eds.), *Handbook of the interview research*. London: Sage Publications. pp. 3-32.

Hahn, J. (2001). The dynamic of mass online marketplaces: A case study of an online auction. SIGCHI'01. Seattle, WA: ACM Press. Vol. 3, No. 1, pp. 317-324.

Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage.

Liebert, R. M. and Liebert, L. L. (1995). *Science and behavior: An introduction to methods of research*. 4<sup>th</sup> ed. Englewood Cliffs, NJ: Prentice-Hall.

Nielsen, J. and Landauer, T. (2000). Why you only need to test with 5 users. In Nielsen's alertbox, March, 19, 2000. Available at <http://www.useit.com/alertbox/20000319.html> .

Paradise, J., Mynatt, E. D., Williams, C., & Goldwaite, J. (2004). Designing a cognitive aid for the home: A case study approach. ASSET'04. Atlanta, Georgia: ACM Press. pp. 140-146.

Patton, M. Q. (1986). Utilization-focused evaluation. 2<sup>nd</sup> eds. *American Journal of Evaluation*. 1987; 8: 46-49.

Platt, J. (1992). Case study in American methodological thought. *Current Sociology*. Vol. 40, No. 1, pp. 17-48.

Ragin, C. C. and Becker, H. S. (Eds). (1992). *What is a case? Exploring the foundations of social inquiry*. Cambridge, UK: Cambridge University Press.

Reid, F. J. M. & Reid, D. J. (2004). Text appeal: The psychology of SMS texting and its implications for the design of mobile phone interfaces. In S. M. Furnell & P. S. Dowland (eds.) INC2004: The Fourth International Network Conference, Plymouth, 6-9 July 2004. pp. 511-518.



Rosson, M. B., Carroll, J. M., & Rodi, C. M. (2004). Case studies for teaching usability engineering. SIGCHI'04. Norfolk, Virginia: ACM Press. pp. 36-40.

Ryle, G. (1971). *Collected Papers*, Barnes and Noble: New York.

Thorngate, W. (1986). The production, detection, and explanation of behavioral patterns. In J. Valsiner (Ed.), *The individual subject and scientific psychology*. pp. 71-93. New York: Plenum.

Yin, R. K. (2002). *Case Study Research, Design and Methods*. 3rd Ed. Newbury Park, Sage Publications.

## **Appendix A**

### **Day 1 : 4 August 2004 ( Wednesday )**

#### **Am:**

Early morning I was alerted with an sms from a friend I seldom keep in touch with back home in Malaysia. Sent me such a sweet sms I thought. Sms reads :

Dear God

Don't need lots of frens! As long as real ones stay with me, so bless them all, especially the sweetest one reading this.

This sms MAKES MY DAY!

#### **Am / pm**

Received a call from a colleague....needs to discuss some crucial matters. Thought of discussing matters on fixed line phone but a household member was awaiting important call...so we decided to carry on discussing via mobile due to caller's kind willing gesture.

#### **5. pm**

There was great news needed to relate to a friend and so sent an sms and so glad received instant reply and response to it.

#### **11.30 pm**

needed to inform a friend of a direction route but as it was too late...I sent a text trying hard to squeeze directions into one text.

#### **12.00 am**

received a text from a friend who had great news to share and as I was still awake managed to respond to the sms. Friend was shocked and glad as expected the sms only to be read the next day as it was already late!

### **12.30 am**

As I was staying up, decided to send a text to my best friend back home whom I often chat with about work, study and all as she is also doing her phd study. Considering the time difference...it was easier to chat at this time...so sent a text to ask if she was available to chat . It's cheaper to chat than to keep sending sms and more fun as we get each other's response like talking on the phone which is even more expensive! Unfortunately...she was not available to chat...so carried on with my work instead. Before off to bed I then set alarm for tomorrow morning.

### **Day 2 : 5 August ( Thursday )**

#### **Am**

Alarm went off and accidentally switched it off and fell asleep. I overslept a bit as usually I'd stop the alarm but not switch it off. Then I'd leave the alarm on so that it alerts me again. It'd give me a little bit time to doze off before the alarm alerts me again.

### **10.30 am**

Was already in my office at the university. As I had to run some errands during lunch time, had to manage time equally for me to do a bit of reading in the room and then off to the library to search for more reading references. Sets alarm to assist me with my time management and took my break at lunch time.

No sms messages received throughout the day. I only made a call to my house as I was going home for lunch.

#### **Pm**

Came back to my office and sets alarm again for time I should leave for home. Since there's no fixed line in my office I had to make sure the mobile is with me in case the kids call.

### **11.00pm**

My husband sent a text informing that he's on his way back from work. What a relief!

### **12.19 am**

My 'buddy' friend from Malaysia had just sent sms to see if I could chat. It's good that I had the mobile next to me at this time. However, waiting for some time to chat on line...she sent a text to inform that her internet line was faulty.

### **Day 3 : 6 August ( Friday)**

Didn't think I had used my phone as much today except to just wait for a call from my husband. He was supposed to give me a ring once he's about to fetch me at the University. Informed him to give me a call before he leaves home so that I could prepare to 'wrap up'. Also told him to call again once he has reached university so just to avoid any waste of time. I was pretty busy today and didn't pay much attention to my mobile! In fact I had a dinner night out with the family...had a good time...forgot about the mobile for a while. It was left all alone in my hand bag! Only time to sleep that I got hold of my mobile to set the alarm again.

### **Day 4 : 7 August ( Saturday )**

#### **Am**

Early morning when I woke up...routine I would always check any messages on my mobile coz there maybe people from back home ( friends or relatives) who might sent sms or called. As there's a difference in time, they may have just sent or called. Fear that I may have not heard any calls while asleep , I always check the mobile the moment I get up every morning. One sms I received , fear it may be anything important or urgent ....was glad it was from an old friend who sent one of those sweet messages meant for a friend. Makes my day again , I guess! I usually do not reply to these kind of messages but treasure them of coz.

I made a call in the morning from my house phone. Since my address book was upstairs in the bedroom I used my mobile to search for the phone number ( I was downstairs in the lounge) as I couldn't remember. Rather easy to do that but how I wish I can remember the number coz it's quite a chore I feel to find the contact number – to key the alphabet and then to scroll down to search. I never liked to do this.

I went to my office to do a bit of work late afternoon. Was busy doing house chores before that so didn't bother much about my mobile though I made sure that it was somewhere nearby in case any one calls. But that was it. Not until I reached the office that I paid a lot more attention to my mobile. As usual...reaching the office, I will always first of all ensure that it's out of my bag and placed nicely on the table.

At the office I remembered that I needed to learn about some matter which could be found at that moment on the media. So sent a text to a friend to find out and managed to obtain the latest info. It was some kind of satisfaction for me. I shared the news with someone over here and I guess the person decided to give me a call on my mobile to discuss further about the news. We had really had a good chat about it!

### **Day 5 : 8 August , 2004 ( Sunday )**

Received a call but I just missed it. Right after the person who called sent a text to say that he called and included a bit of a reason why he called. The person also asked if it was a convenient time to call me. I replied to say that it was fine ...and so the person called again. Thinking that I was in the house I was asked if the call could be made to house line instead but unfortunately...I was already out of the house...in fact in the car. As it was some kind of urgent matter the caller had to continue talking to me on my mobile.

Rest of the day, the phone stayed basically in my handbag...only took it out of the bag later. Later in the night I realized I had not seen my mobile. And of coz I sort of misplaced it ....couldn't find. So in search of the mobile I had to use my house phone to locate where the phone was. Heard the ringing tone...somewhere under my bed ....must have fallen off that it went missing. Lucky coz the battery was very low and so I had to put it on charging.

### **Day 6 : 9 August ( Monday )**

On way to my office at about half eleven in the morning when I received a phone call from back home Malaysia. It was from my father whom I have not spoken to for quite some time. It was a wonderful surprise. Glad that he managed to get me on my mobile and also managed to speak to my sister so was really happy! Wouldn't be able to speak to them if they had called me on my house number.

I didn't actually use my phone as much today except to keep track of time as I left my watch at home. As I was busy after I got home entertaining kids and household matters...I didn't pay much attention or used my mobile. Since I was really tired I decided to go to bed early and set the mobile alarm to wake me up pretty early so that I could do a bit of work!

### **Day 7 : 10 August ( Tuesday )**

As set by my alarm woke up very early. Before I started work I decided to send a text to my close friend back home just to find out how she's doing. I got her reply and like me she was in the midst of doing her thesis work. So it was good to know that we were both working at the same time though in different time zones.

Anyway...I went back to sleep and decided to have a 'sleep in' so I didn't bother to set the alarm this time. Got myself busy preparing household chores before I left for Office – checked my mobile and there was a message from this close friend of mine who asked if I could chat but then the time difference was too late ! I missed her sms.

Since I received an email from another close friend this morning telling me how she's been busy coping with her mum who is ill, I decided to just give a short phone call. Managed to speak to her which was great. After putting down the phone I felt that I could give her some words of comfort so I decided to send her a text message. Hope she reads it and knows that I sincerely care.

I managed to get in to the office before noon. I later only used the mobile to make a call to my husband to inform that I was already in town and that he could come and pick me up.

The rest of the day.....no sms, no calls but the mobile was with most of the time. Rather disappointing!