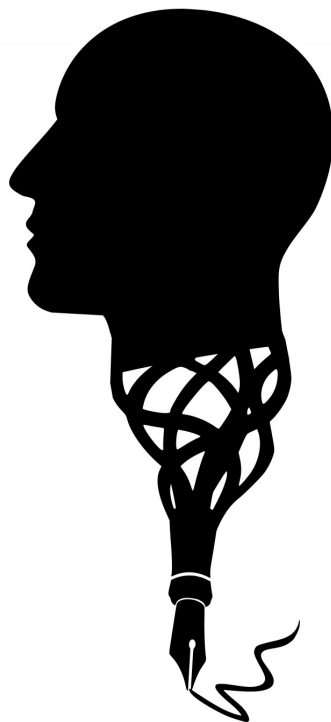# User Experiments and Web Design
More in common then you might think

Fabian Hoeltke
COMP1710

Abstract

This paper gives a description and analyzation about two experiments taking place within the Australian National University / Department auf Psychology SONA program. Both experiments will be later on compared to known similarities with web design.

Introduction

User participating experiments and web design are not so different as they seem on the first glance. Many principles, experiences and challenges are shared in those two fields. To give a greater insight about these relationships I as a web designer participated in two independent SONA experiments. The first experiment focusing on relationships between personality and job recruitment, the second experiment about visual perception during guided movements.

First Experiment:
Understanding the relationship between personality and job recruitment

This research is particular interested in influences and connections between people's personal mood, personality, identity and job interviews.

The experiment was starting off with an initial heart beat measurement to better determine my current mood. After that a question block followed in which I had to give information about my stress level at the current moment and on the days before the experiment. Suddenly the questions about my personality stopped and a different kind of question appeared: A question about the weather. This was intended to get myself concerned with something totally off topic. After answering my reflections about the weather (it was cold, but sunny outside) I was advised to contact my instructor.

Out of nowhere I was told to prepare for an upcoming job interview.
I should prepare myself to give a 3-minute speech in which I had to answer three typical questions:
- Describing my greatest strength in a workspace and how it does set me apart from other applicants.
- Describing my greatest weakness in a workspace and how I overcome it
- How I would handle the feedback if during a performance review I was told that I was underperforming.

I was given 5 minutes to think about the questions. A piece of paper was provided to me to take notes, but I was not allowed to keep it during the followed recording.

After the recording was done my heartbeat was measured again to see different behavior from the initial measurement.
When this was done another question block was given to me, this time answering questions about my personality to classify me better.

The experiment was really easy to conduct. Questions were stated clearly; the tasks were given in a good order. I could see a clear structured line during my participation.
However, I felt the experiment differed in a point from its Information sheet: The sheet stated that my social identity was manipulated when I was thinking about the weather. I did not really understand how this was supposed to work, nor could I feel any difference before and after reflecting about the weather question. I would have liked more clarification here.

Second Experiment:
Visual perception during visual guided movements

This research tries to investigate different pathways in movements and object recognition between people with and without psychotic-like experiences.

The experiment started by filling out a huge question report about myself. Questions varied from all different kinds of fields. For example, I was asked whether I like back massages, or like to have a beer when being on a party. This part took about 20min and was used to classify my personality in one of the two major groups this study is about, people with or without psychotic like experiences.
After finishing the question task I was handed a catalog. The task was now to identify specific patterns created by basic shapes like circles, triangles or squares on each page. Every pattern had one missing part and I had to choose between five options how I would fill this gap with objects. From page to page the puzzles got harder to solve and at some point, always giving a right answer was not possible anymore.

The next part was focusing on my object memorization. I was given a mapping between unique shapes and numbers. Beneath the mapping was a sequence of numbers with blank fields. My task now was to fill out those blank fields with the corresponding mapping of the number as fast as possible.

Followed by these intelligence tests were now the motion tests. The first part of these was designed to determine my hand motion accuracy. I was asked to point on a red dot, glued onto plastic stick attached to a motor, which was rotating from time to time. Meanwhile my right hand was attached to a motion recording device. The spontaneous rotation of the stick was intentional to help me focus better on the red dot.
The second part of the motion test was again interacting with the rotating stick. This time I was supposed to grab the stick with two fingers, instead of pointing on it. As the first part, this was also intended to measure my hand motion accuracy.

The overall experience I had from this experiment was quite good. The experiment did consist out of a good variety of mentally and mechanical challenging tasks, which were not always too easy to conduct.
The big weakness of this experiment was the question report in the beginning. It just took too long, and the worst part is that I was not able to see my classification. I would definitely like to know what kind of personality had from this tests point of view.

Comparison of the two SONA experiments

Even though the two experiments were studying two different fields, they both focused on my personality. My personality was the key whether I was sensitive to job interviews in the first experiment and the key how I handle objects and shapes in the second one. Differences mainly occurred how I conducted the study in sense of supervision. The job recruiting experiment was mainly not supervised by the instructor, I was on my own. This was intentionally done to better create the real word scenario of a job interview, where every participant is also on its own. In contrast the second object experiment was highly supervised. Every movement and decision, the length of thinking and mistakes were recorded. Doing some parts of the experiment under time pressure made me also feel like I was competing in a challenge sometimes.
Another big difference was number of participants. The first experiment was conducted on three participants at the same time, while the second experiment was only focusing on me.

Relevance of user participation experiments to web design

As the two experiments focused on me, the participant, web design also does mainly focus on the user. Both are therefore facing similar challenges they have to deal with. I would like to point out some of these shared challenges in the next section:

- **Accessibility and Compatibility**
  A good web designer does not assume that every user is using his website as he would do. Users variety in mainly aspects, including age, device, browser, location, speed and so on. Giving everyone a mostly similar experience without any conflicts is a huge challenge.
  This can be also said about user-related experiments. The instructors or designers of such experiments have to deal with a broad range of people with different backgrounds, ethnics and age. Many experiments cannot be done by all of these people. In case of my object recognition experiment elderly participants would have faced huge challenges and probably were not able to fulfill all tasks.

- **Navigability**
  A website should be told like a good story. After a catching headline, the user's interest should rise and make him dive deeper in the site. While doing so he or she sees a clear line of the story and should know exactly where he/she is on the page. If circumstances require it should be not hard to go a step back.
  The same concept of story-telling is also applied in my experiments. After a brief introduction my interest got greater and I wanted to move on. Having a clear line through the experiment and in the tasks made it easy for me to follow on.

- **Compatibility Testing**
  A major time consuming task of creating webpages is testing. Every website is displayed differently in every web browser and device. Archiving a decent experience on all of these varieties can be only solved by a lot of testing, until a good solution is found.

User experiments are also subject to great testing. The creators of those experiments need to make sure that the tasks are easily understandable, solvable, not frustrating and conductible by all participants without problems. Therefore, an experiment can also be published only after enough iterations of testing.

Since user-participation experiments and web pages are operating in the same human centric environment, it is very easy to combine those topics. User-participation experiments can be used to give a developer more insights about how suitable her/his new website is for its upcoming audience. It would make it very simple to spot possible underperformances in the three mentioned challenges. The problems could be then easily corrected before a major launch and would so prevent bigger impacts occurring during uptime.

References

Conducted Experiments
1. Jessica Donaldson: Understanding the Relationship between personality and job recruitment
2. Elizabeth Shen: Visual Perception during visual guided Movements

Web Sources
5 Biggest Challenges You Need to Face in Website Creation:
https://www.stayonsearch.com/5-biggest-challenges-you-need-to-face-in-website-creation

Pictures
https://pxhere.com/nl/photo/1446617