Human Computer Interaction Report

COMP1710

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1 Abstract

In this report, I evaluate the design of an experiment wherein I identify thieves, and another wherein I describe the vividness of uncertain situations and other recollections. While the latter experiment was not accessible to voice recognition software and had a poorly designed input method for several questions, it was run more effectively than the former experiment; it better satisfied its purpose, had clearer instructions, and was overall engaging. User evaluation is an important reflective tool when analysing the design of interactive systems. This is true for experiments, but is also true for websites, which similarly have purposes that need to be satisfied.

2 Introduction

User evaluation exposes issues, benefits, and questions in the design of interactive systems. In this report, I evaluate the design of two experiments. In *Are You Good at Identifying Thieves?*, I identified thieves in videos while recording my facial expressions with a webcam. In *A Study on Judgment Under Uncertainty*, I rated how I felt about uncertain situations and described how vivid recollections of certain events were. *Thieves* was engaging, but was difficult to complete, had an undefined purpose, and gave unclear instructions for the webcam recording. *Uncertainty* was interesting and provocative, but suffered from accessibility issues, and had a poorly designed input method for several key questions. While *Thieves* required more critical thinking, *Uncertainty* was run more effectively because it gave clearer instructions and better satisfied its purpose. Other interactive systems like websites benefit from similar user evaluation, because like experiments, websites have purposes that need to be satisfied, and the best way to know if a website satisfies its purpose is to have real users engage with it.

3 Are You Good at Identifying Thieves?

3.1 Summary

The purpose of this experiment was not stated in the information sheet, other than the title: “Are You Good at Identifying Thieves?” (Jin et al., 2021) However, given that it asked me to record my face as I answered the questions, I speculate that the experiment was evaluating how my facial expressions correlated with the answers that I chose.

In this experiment, I watched several video interviews and judged whether the interviewees had stolen a phone prior to the interview. The videos came in sets of two. For each video, I rated how strongly I felt that the interviewee had stolen the phone, and then chose the one I thought that was more likely to have stolen the phone. Participants came in a range of ethnicities and gender expressions, and the two camera feeds had distinctly different lighting qualities. I was asked to record my own face for the duration of the experiment and then upload the video file to a cloud storage service.

3.2 Experience

This experiment was easy to follow and very enjoyable. It was quite entertaining to watch these interviews and judge the interviewees, even given the long duration of the experiment. The variety of ethnicities and gender expressions in the interviewees also helped challenge the behaviours that I viewed as suspicious.

The most difficult part of the experiment was reducing the video of my face to an appropriate file size. The original size was over 1GB, which was infeasible to upload, and the experiment did not provide any resources with which to reduce the file size.

3.3 Strengths and Weaknesses

Because the purpose of this experiment was unstated, it is difficult to say whether it reliably met its purpose.

However, if the experiment's purpose involved heavy use of the video recording, I believe that the experiment's poor webcam instructions hindered results. The instructions for the video recording informed proper lighting and positioning of my face for optimal results, but did not inform me of other important qualities, such as: when exactly I should start the recording, whether I should record audio from my webcam as well as video, and whether I should record audio from my desktop computer. The answers to these questions are important, because without them, the experimenters may have been unable to know which interviews my face was reacting to and when. This confused me for the first five minutes, and thus likely made my facial data and form data less reliable.

Other than this issue, the experiment was well-conducted. The tasks were precise, the form was easily navigable, and the structure of the videos was clear.

4 A Study on Judgment Under Uncertainty

4.1 Summary

This experiment aimed to explore how one's vividness of sensory experience affects one's feelings about situations with uncertain outcomes (Shou, 2021-a). This was only revealed in the debriefing sheet, however. The information sheet stated that the study aimed to "understand how people perceive and evaluate uncertain information in various situations," (Shou, 2021-c) which neglects the subject of vividness.

The experiment first presented several situations with uncertain outcomes. For example, "Parking at a spot that is very close to your destination when you are not sure whether or not you are permitted to park there." (Shou, 2021-b) For each situation, I rated how bad the perceived outcome would be on a 1 to 10 scale, and then rated how likely those bad outcomes were on a 0% to 100% scale.

After answering all questions related to those specific situations, the experiment asked me to recall specific sensations or experiences and rate how vivid those recollections felt.

4.2 Experience

Overall, this experiment was simple and interesting. Answering questions felt mechanical, but the scenarios and sensations presented were interesting enough to keep me engaged. The experiment provoked me to consider why I reacted to uncertain situations in particular ways, and whether this and the vividness of my recollections said anything about my mental health.

However, the experiment was hindered by inaccessibility. I have RSI in my hands, which means that I sometimes need to use voice recognition instead of a mouse to navigate webpages. Because of how the webpage was implemented, I could not easily access most of the form controls using simple voice recognition commands. I instead needed to emulate a mouse using clumsy voice recognition commands, or resort to a physical mouse and thus damage my hands. This issue could have been solved if the HTML of the webpage were more semantically descript.

4.3 Strengths and Weaknesses

For the most part, this experiment reliably met the aims that were stated in the information sheet and in the debriefing sheet. The questions were clear, and the focus on both severity of outcome and likelihood of outcome seemed to cover all avenues of ambiguity. Additionally, the last question asked me how carefully I answered the other questions in the experiment. This is a clever way for the experimenters to evaluate the reliability of my results.

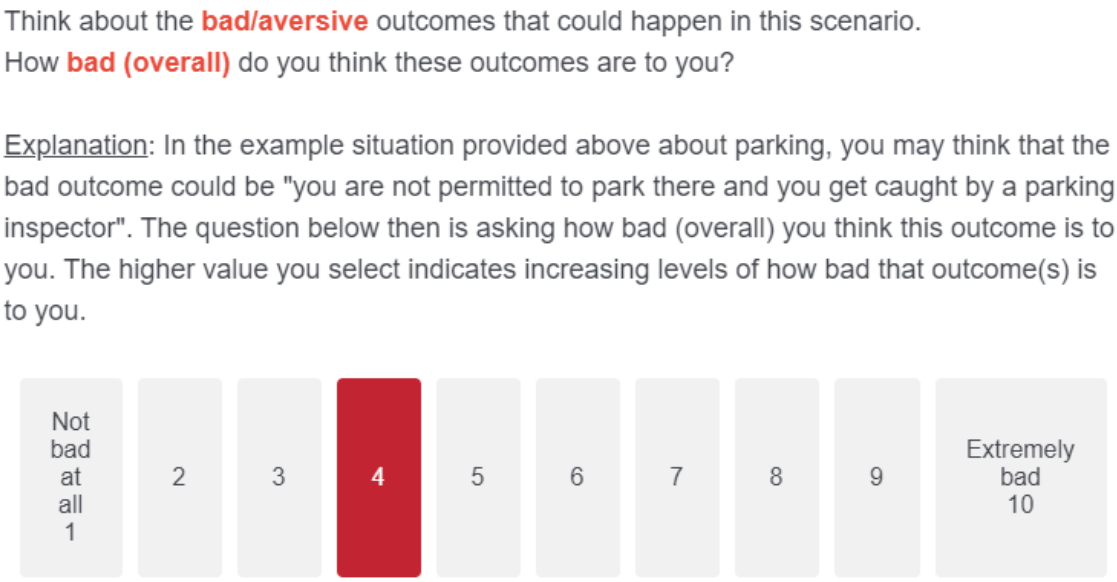

Fig. 1: Poorly designed input method.

However, a poorly designed input method (Fig. 1) on several important questions reduced the reliability of some of my answers. Questions regarding the severity of perceived outcomes presented a range of 1 to 10, from “not bad at all” to “extremely bad.” (Shou, 2021-b) The range was visually quite long, and only numbers 1 and 10 were labelled. This meant that every number in the middle lacked context—it was hard to tell how a 4 was meaningfully different to a 6, for example. Because of this, I was unable to answer these questions confidently, and so my answers to these questions were less reliable.

5 Comparison of the Two Experiments

The main difference between the two experiments was in the level of intelligence they required. *Are You Good at Identifying Thieves?* required active attention and challenged my biases, whereas *A Study on Judgment Under Uncertainty* was a simple form that required little critical thought. This is not to say that *Uncertainty* was a worse experiment, just that the information it gathered required less consideration.

Overall, *A Study on Judgment Under Uncertainty* was run more effectively than *Are You Good at Identifying Thieves? Thieves* was clear on a moment-to-moment basis, but it failed on a broader level. As mentioned earlier, the incomplete webcam instructions made my results less reliable, and the inelegant video upload process soured my experience. Additionally, the undefined purpose of the experiment did not motivate me and made the experience somewhat confusing. *Uncertainty* was far better on all accounts. Not only were its instructions clear, but it had a clear purpose upfront that motivated my participation.

6 Relevance of User-Participation Experiments to Web Design and Development

My experiences show that user-participation experiments are integral to effective web design. I identified various points in these experiments where the experiment failed to satisfy its purpose. For example, the inaccessible form controls in *A Study on Judgment Under Uncertainty*, the poorly designed input method for key questions in *Uncertainty*, and the unclear instructions in *Are You Good at Identifying Thieves?* Additionally, I identified points where the experiment succeeded in its purpose, such as the clear instructions and sound method of validating reliability in *Uncertainty*. Like an experiment, a website has a purpose. It is intended to place users in a certain frame of mind so that they interact with the website's content in a certain way. A good website will satisfy its purpose. And the best way to know if a website satisfies its purpose is to see how users engage with it. Formalising this engagement through a user-participation experiment—one that asks similar questions to the ones broached in this report—could expose similar issues in accessibility, usability, and clarity, as well as lessons in clarity and reliability of engagement.

7 Conclusion

User evaluation exposes issues, benefits, and questions in the design of interactive systems. I evaluated the design of two experiments, *Are You Good at Identifying Thieves?* and *A Study on Judgment Under Uncertainty*. They were both engaging and provocative. However, *Uncertainty* suffered from accessibility issues and a poor input method for key questions, and *Thieves* was difficult to complete and had an undefined purpose. Overall, *Uncertainty* was conducted more effectively, as it had a clearer purpose and better instructions. In future, I can take the lessons learned from evaluating these experiments into the user evaluations of my own websites.

8 References

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