Taylor Blaine Startin
Assignment P3
CS 6750 – Human-Computer Interaction
Georgia Institute of Technology – OMSCS – Fall 2016
09/12/2016

1. Simplicity would be one principle that would help within its relationship to the gulf of evaluation. With a simplicity, if the design is easy to understand and the user is given only the information they need, then the gulf of evaluation is much smaller. Consistency is also very important for the goal of an invisible interface. If an interface constantly changes how it's commands are handled, then the interface is no longer consistent and evaluation becomes very difficult. Finally, discoverability is probably the most important. If no one ever knows about the commands that can be called, then how would they ever be executed and return evaluation or conclusions of what has actually occurred?

2. One of the interfaces I use daily is Sprocket. Sprocket is the CMMS that my company has created to manage work orders, assets, labor, and much more. Unfortunately, when an error occurs within the app, there is not any tolerance of what happens. The screen is filled with the exception that occurred, and a typical user doesn't know how to respond to this. It is very similar to the old "Blue Screen of Death" on windows. Also, once the error occurs, you are returned to the login screen rather than to the screen previous to what was causing the error.

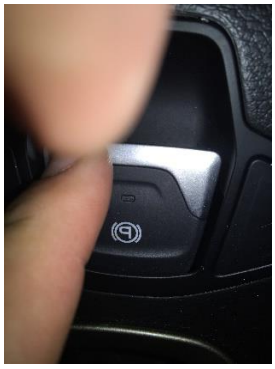
   I believe that by adding more session variables, the system could become more tolerant of errors. Modifying the error page to tell the user that an error has occurred would improve the constraints. Redirecting the user back to the previous page they were on would improve mappings. Including popups of the issue or if something is required or if an error occurred would improve affordances rather than just scripts that the user can't understand.

Taylor Blaine Startin
Assignment P3
CS 6750 – Human-Computer Interaction
Georgia Institute of Technology – OMSCS – Fall 2016
09/12/2016

3. There were many video games in the past that this occurred on. I can't name exact ones, but you'll understand if you played them. There were points in older games that challenged quickness and memory. Take, for example, jumping over gaps and avoiding obstacles/dangers in video games. If you were quick enough, you could avoid them without having to memorize them. If you weren't quick enough, you could avoid them on the next turn. There were often slips, where I had memorized the first part of the course, but would jump when I should have dodged or dodge when I should have jumped. There were also some mistakes, or bugs, where no matter what you did, the jump would be an issue that no one could get by unless you were at the perfect place. If redesigning, I might incorporate something that lets the user retry from where they had the slip or the error. I would also allow longer jumps/dodges to incorporate a wider available area to successfully complete the task.

4. A good representation of something I use is my desk lamp. It's simple. I flip the switch and the light comes on. I flip it again and the light turns off. I believe it is a good representation because it doesn't give me extraneous details. I don't need to know how much power it is using or what wattage the lightbulb is. It also exposes natural constraints because it has a diagram of an "O" representing "On" and "I" representing "Off". Furthermore, I don't have to worry about if it will turn something else in the house on or off. I know that the knob only controls that one single lamp.

   An interface that doesn't use a good representation would be some new emergency brakes in some vehicles. I rent vehicles when I travel for work and ran into this yesterday. As it turns out, the emergency brake was on when I first got into the vehicle. In my truck at home, the emergency brake and its release are down by my feet on the left side. I pull the lever to release and push the pedal to engage. In my wife's car, I pull the lever in between the passenger and driver's seat to engage, and I push the button and push down to disengage the brake.
   In the vehicle I rented, the button is in the center like my wife's car. It took me a good while to find it. This did not expose natural constraints. Then I pushed three times without the brake disengaging. Finally, I pulled up, like in my truck, and it disengaged. This is not good representation because the relationship was not explicit. It also does not bring objects and relationships together because pushing and pulling was opposite to what was expected.


Taylor Blaine Startin
Assignment P3
CS 6750 – Human-Computer Interaction
Georgia Institute of Technology – OMSCS – Fall 2016
09/12/2016

Due: Sunday, September 18th, 2016, by 11:59PM UTC-12 (Anywhere on Earth). This assignment is based on lessons 2.5 (Design Principles and Heuristics) and 2.6 (Mental Models and Representations).

Assignment Instructions

Answer the following four questions in a maximum of 300 words each; if you supply more than 300 words, the grader will stop reading at the 300th word, and you will not receive credit for anything written after that. Clearly delineate where each answer starts and ends. You are encouraged but not required to complement your responses with diagrams, drawings, pictures, etc.; these do not count against the word limit, though any captions, text in tables, etc. does.

1. Many of the design principles and heuristics we discuss here relate to other material we have already covered in the class. Select three of these fifteen principles and describe how each principle might be used to support the creation of an invisible interface, especially in terms of each one's relationship to the gulfs of execution or evaluation (~50 words each). Then, select two principles and describe how each principle could be used to create interfaces that emphasize the participant view of the user (~50 words each).
2. From your everyday life, select an interface that either (a) leverages the principle of tolerance in its approach to errors, or (b) is intolerant of errors the user commits. Describe the interface, and describe how it responds to user errors, whether by tolerating them or harshly penalizing them (~100 words). Then, describe how the interface might be improved through the use of improved constraints (~50 words), improved mappings (~50 words), and improved affordances (~50 words) to avoid the user committing errors in the first place. These redesign options can be mutually exclusive (in other words, you can generate either three different redesigns or one redesign that incorporates all three principles).
3. Select and briefly describe a game with which you are familiar (~50 words); this could be a board game, a card game, a sport, a video game, or any other kind of game. Then, briefly describe a slip that a player might make in this game (~50 words), and a mistake that a player might make (~50 words). Then, design how the interfaces in the game could be modified to address both that slip and that mistake (~100 words). In addressing the errors, your design might prevent the player from committing the error, or it could introduce tolerance or recovery into the error.
4. From your everyday life, select an interface that you would argue uses a good representation of its underlying content. Describe the connections between the representation and the underlying content; in what ways does the representation exemplify at least two criteria of a good representation (~125 words)? Then, select an interface that you would argue does not use a good representation of its underlying content. Describe the mismatch between the representation and the underlying content; in what ways does the representation violate at least three criteria of a good representation (~125 words)?