INFO 3315 Human Computer Interaction

Worksheet Week 3 – Understanding Humans

A – Introduction to Cognition

1. Describe what happens cognitively when you browse the Internet?

2. In your opinion, how are the contents in 'Understanding Humans' relevant to
   a. the field of Human Computer Interaction?
   b. the unit? Hint: Review the Learning Outcomes for this unit.

B – Cognitive Processes and Frameworks

1. Explain the difference between Broadbent's early selection model and Kahneman's capacity allocation model. In your opinion, are we *really* multitasking?

2. According to Road Rules 2014 REG 300, drivers who are caught using their mobile phone while driving in NSW will be penalized with demerit points and a hefty fine. a. Discuss if it is possible for a driver to text and drive safely. Defend your stance based on the cognitive processes that are required to perform both tasks. b. Suggest design changes to the smartphone to reduce the risk of accidents when a driver text and drive.

3. Sort the animals in Animals Handout into groups. You are given the freedom to decide how this is done e.g. the criteria of grouping, number of groups, list/picture format etc, as long as the animals are sorted and organized.
   a. Review Gestalt Laws of Perception.
   b. Identify the Gestalt Principle(s) used in your results to denote a group.

4. Traditional combustion engine vehicles emit sounds that alert road users of their presence. Electric vehicles (EV) are better for the environment but much more dangerous to road users because they do not emit engine sounds. Describe or find suitable sounds that can be used to inform road users that an EV car is driving at high or low speeds.

5. Try the interactive demonstration of Fitts Law:
   http://fww.few.vu.nl/hci/interactive/fitts/

   You can compare your results from the demonstration with another student to check if the results have the same trend.

   Describe Fitts Law in your own words and how it can be applied to interface design?

6. Review: Norman 7 Stages of Action, gulf of execution and gulf of evaluation. a. Apply Norman 7 Stages of Action to the task of adding yourself into a group of your choice on Canvas for the HCI Project.
   b. Suggest ways to improve Canvas interface to improve the process of adding oneself into a group.

C – Emotion and Motivation

1. Explain the term affective computing. Identify potential applications that will benefit from affective computing.

2. Compare and contrast extrinsic and intrinsic motivation. Discuss the advantages and disadvantages of using both types of motivations.

3. Suggest design features that can be incorporated into the following applications to nudge users to use the technology regularly:
   a. Diet tracking mobile application
   b. Self-paced online lessons website

4. Reflect on the concepts we have covered for this sub-section and explain how you can use the knowledge for:
   a. Your group project?
   b. Your future career?

Additional Resources

1. Crackberry'd Documentary: https://youtu.be/QJ1aADtxvF4

2. News article on legislation for electric vehicles to be fitting with sounds: https://www.abc.net.au/news/2020-02-21/electric-vehicles-silent-and-potentially deadly/11983828

3. Jaguar I-PACE electric car sound: https://youtu.be/13JwfssNI3I

4. Card Sorting https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer interaction-2nd-ed/card-sorting

Animals Handout



Credit: Animal Spot - https://www.animalspot.net/