Lesson 12

Interaction Design (CM3055)

Two Types of User Errors

Slips

- when users intend to perform one action, but end up doing another action.

- typically made when users are on autopilot, and when they do not fully devote their attention resources to the task at hand.

Mistakes

- when users have goals that are inappropriate for the current problem or task; even if they take the right steps to complete their goals, the steps will result in an error.

- conscious errors, and *often* (though not exclusively) arise when a user has incomplete or incorrect information about the task, and develops a mental model that does not match how the interface actually works.

Good general guidelines for reducing the likelihood of all types of errors

Preventing Both Mistakes and Slips

1) Remove Memory Burdens

- show all of the information users need to readily resume their tasks after having been interrupted for several minutes.

7 ± 2

video

Cognitive psychology in UX design: Minimising the cognitive load

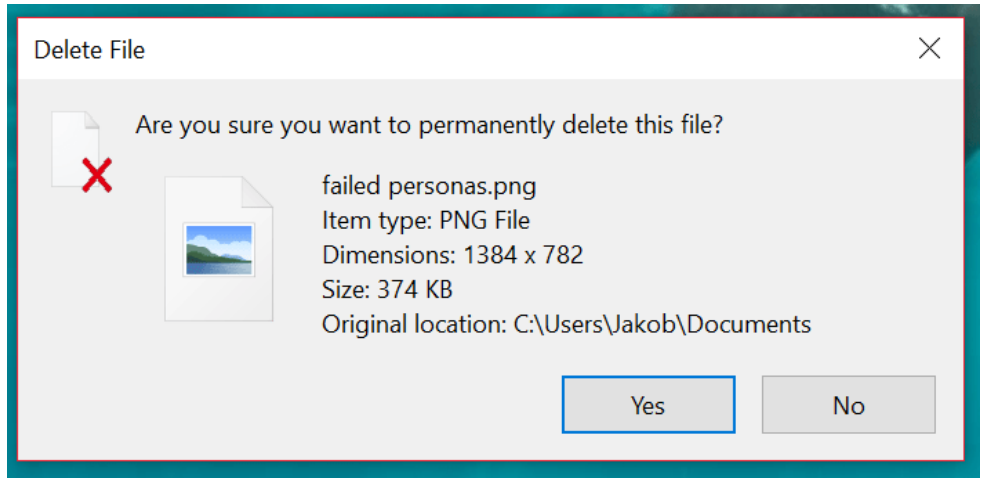
Preventing Both Mistakes and Slips

2) Confirm Before Destructive Actions

- use confirmation dialogs carefully > interrupt user's workflow > Slow them down

- **Counter-intuitively**, a design intended to prevent errors can actually increase them, as the user starts rushing to counteract the inefficiency of constantly confirming.

- Don't use confirmation dialogs as the sole error prevention method, apply them carefully with the other techniques to maximize their usefulness and limit their inefficiency.

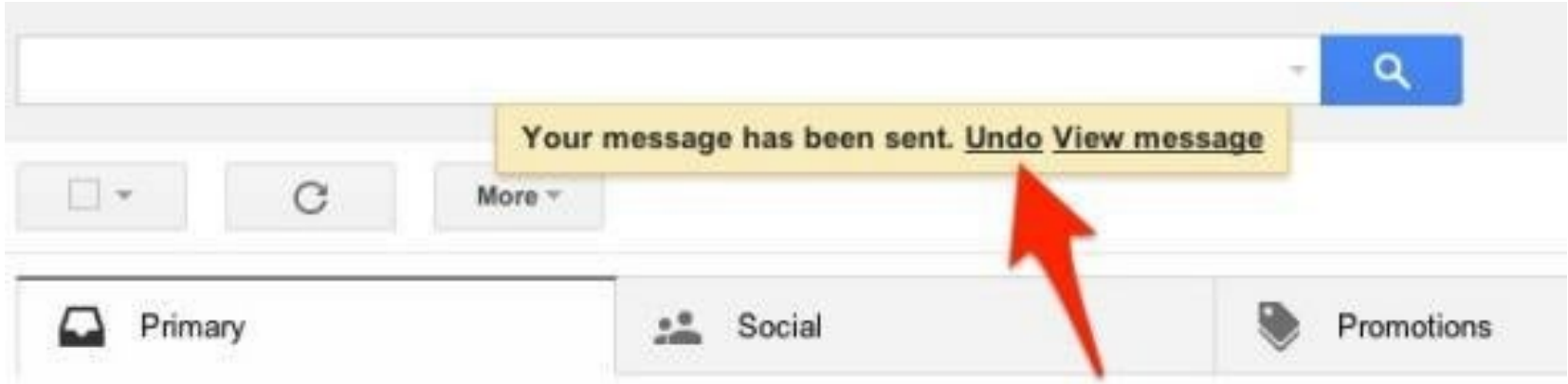


Preventing Both Mistakes and Slips

3) Support Undo

- provide a safety net that makes these errors less costly

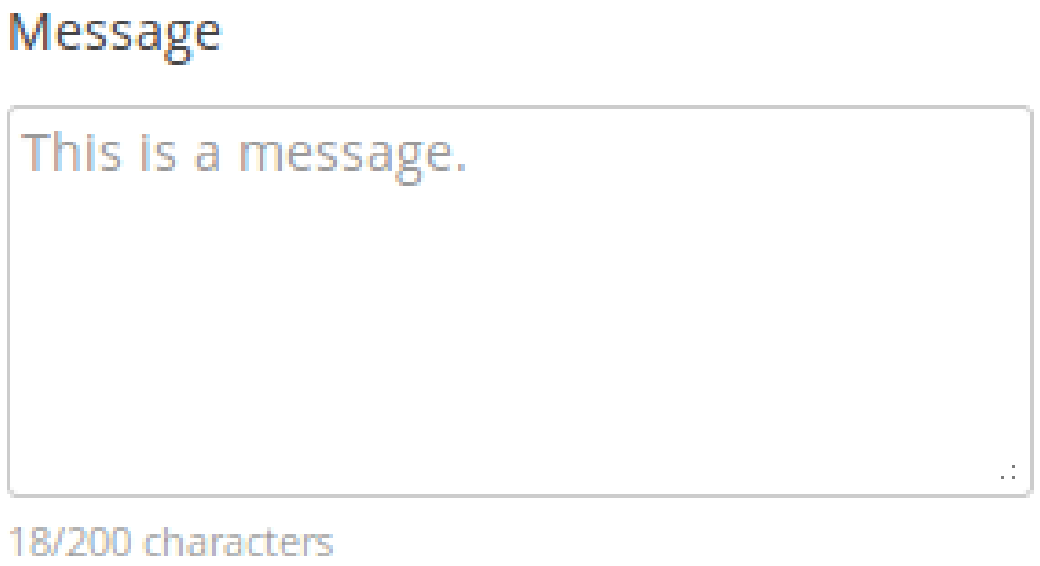
- ability to undo the most recent action can help users to feel more secure and more confident



Preventing Both Mistakes and Slips

4) Warn Before Errors Are Made

- Subtle, contextual error warnings while a user is actively making an error can help them to quickly correct it



Have you ever been locked out of a website or device? How long for? Did you get any warnings that would happen?

Do you think it was fair you were locked out? Was it detrimental to your user experience do you think, or was it totally justified?

A/B Testing

- A way to test changes to one or more elements on a page.

- A/B testing - can add an element (graphics, text) to a page or remove it or change it, and see how the addition, elimination, or change impacts the conversion rate of the page.

original one (control)

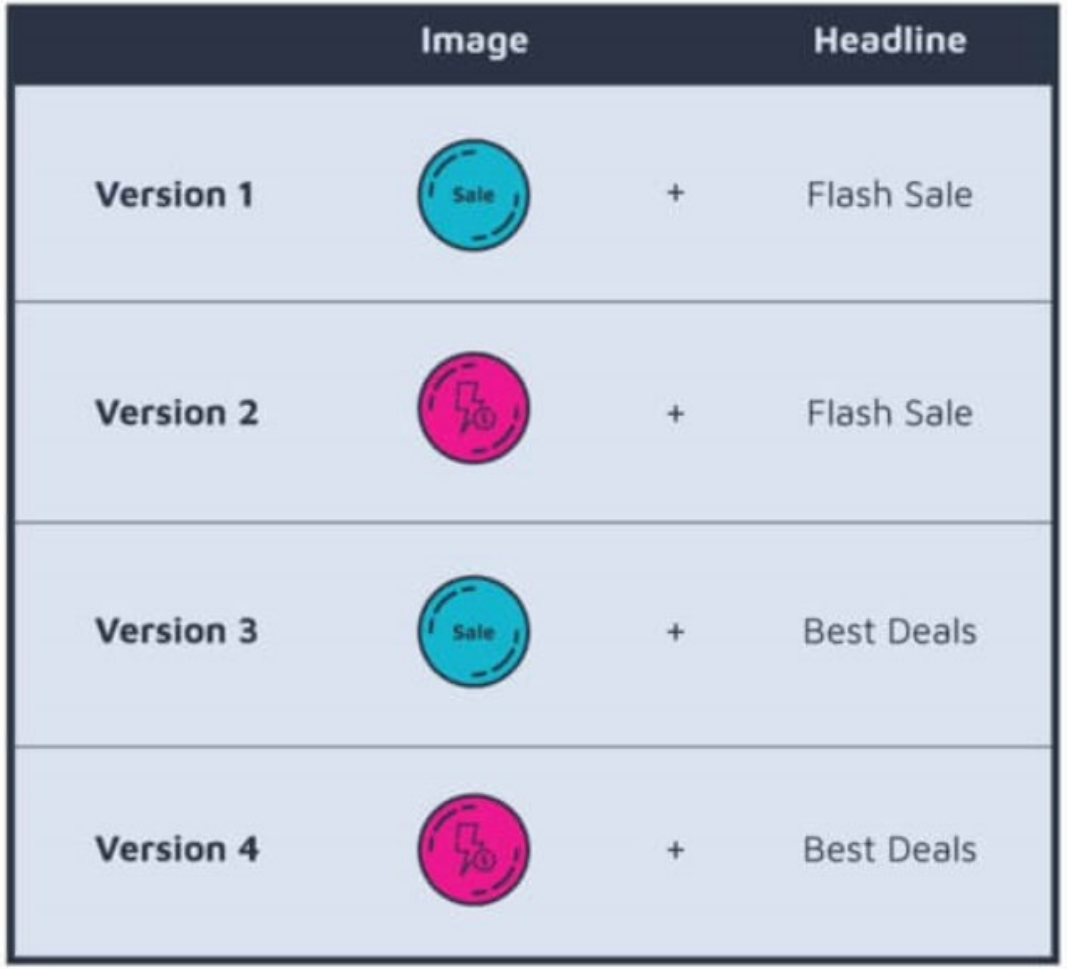
Variation (challenger)

Testing the impact of the featured banner/textbox in a different color.

Extracted from convert.com

Multivariate Testing (MVT)

- A way to test a GROUP OF ELEMENTS on a page.
- Can add, delete, or change a group of elements on a page - creating multiple versions with multiple tweaks, and see how the addition, elimination, or change to the group of elements impacts the conversion rate.
- Group of elements MUST comprise at least two elements.
- Each element must have two variants >>> have at least four versions to test



Testing four versions with different combinations of images and headlines

Extra Reading:
https://conversionxl.com/blog/multivariate-tests/

Extracted from convert.com

Breakdown of a simple multivariate test

Group of elements to test: Element 1, Element 2.

Variants of Element 1:
Element 1 Variant A
Element 1 Variant B

Variants of Element 2:
Element 2 Variant A
Element 2 variant B

Maths of multivariate testing:
The number of versions to test = The number of elements in a group * The number of variants of each element

https://www.optimizely.com/insights/blog/how-obama-raised-60-million-by-running-a-simple-experiment/

A/B testing case study

What would you want to know from analytics in this problem?

Assume you have built a simple website that shows off your work. This could be a portfolio style website with some interactive functionality and some examples of your work that you have produced - maybe even on this degree!

You notice a lot of traffic arriving through Facebook. People are navigating through your page at a seemingly normal pace. However, there are two oddities:

- People are spending orders of magnitude longer on your HCI and Interaction Design portfolio page.
- The spread of data seems to be large, with a range of 44ms to 1075987ms spent on your 'about me' page.
- People are spending less time on pages with media than text.
- Explain the sort of analytics you might utilise to identify the 'how' and 'why' of this problem space. Further to this, can you design an A/B test that might capture some useful insights about these behaviours?

Independent variable
a circumstance of interest to the investigator

Dependent variable
A measurable human behaviour potentially influenced by the circumstance.

i.e.
an investigation on computer pointing devices may ask whether speed or accuracy in selecting on-screen targets is influenced by the type of pointing device or the transfer function that relates device motion to cursor motion.

What are the 2 **independent variables** and **dependent variables**?

Let’s take another field where this is used heavily - gaming.

Do a search for the use of A/B testing in videogames.

- What kinds of games use this method?
- How is this data used?
- What aspects of a videogame might be A/B tested?
- How does this make you feel - that you might be being experimented on (in some degree), continually?

Explain what an independent variable and a dependant variable are.

How are they connected in the design of an experiment?