

(Helping Our Users) Knowing What To Do

Lecture 06 of *Researching People-Centred Design* with Tim Maciag



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Faculty of
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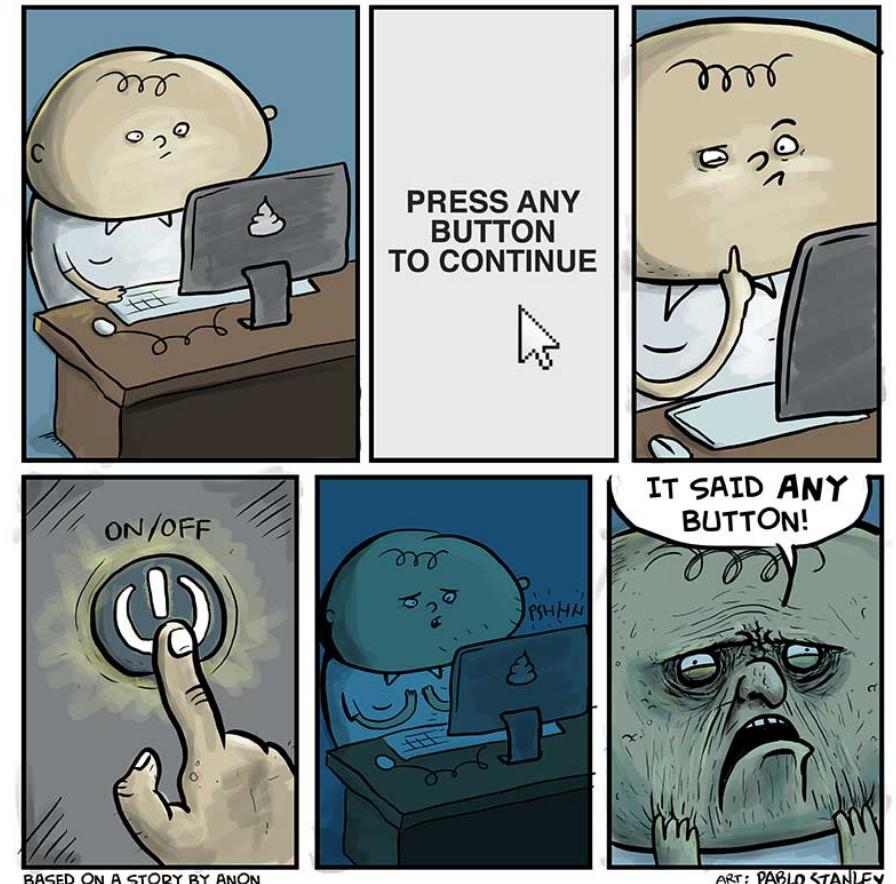
Outline

- Revisiting knowledge in the head & world
- Constraints
- Forcing fucntions

Knowledge in the head

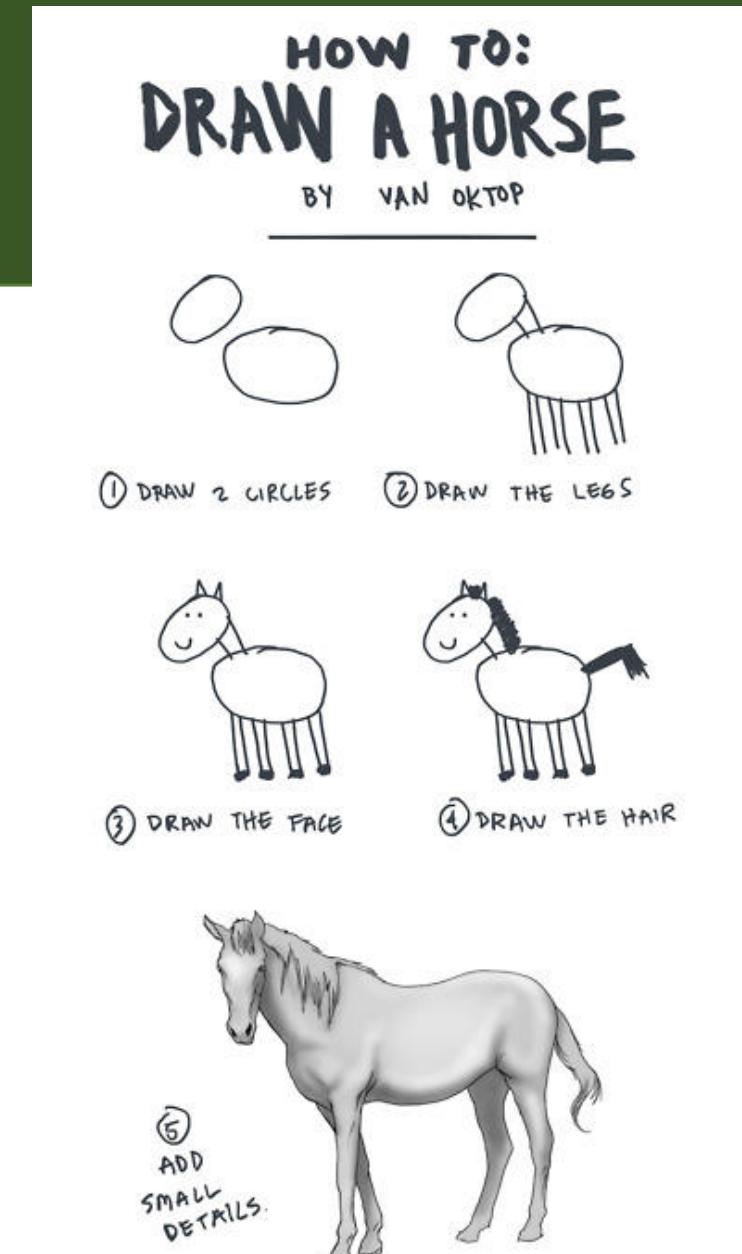
Knowledge in the head

- Guiding our interactions with technology



Knowledge in the head

- Guiding our interactions with technology
- Knowledge in our heads
 - Rationality & bounded rationality
 - Declarative (explicit) & procedural (tacit) knowledge
 - Short/long-term memory
 - Experiences, interactions, & habits
 - Mappings, metaphors, skeomorphs
- Activity time
 - A great practice activity is drafting / drawing icons for apps using metaphors



And knowledge in the world

And knowledge in the world

- Really all about constraints
 - Again, guides interaction with technology



And knowledge in the world

- Really all about constraints
 - Again, guides interaction with technology
- 4 kinds
 - Physical
 - Cultural
 - Semantic
 - Logical



Physical constraints

Physical constraints

- Making the limits of possible operation(s) visible



Physical constraints

- Making the limits of possible operation(s) visible
- No special training is required



Physical constraints

- Making the limits of possible operation(s) visible
- No special training is required
- Ease of interpretation



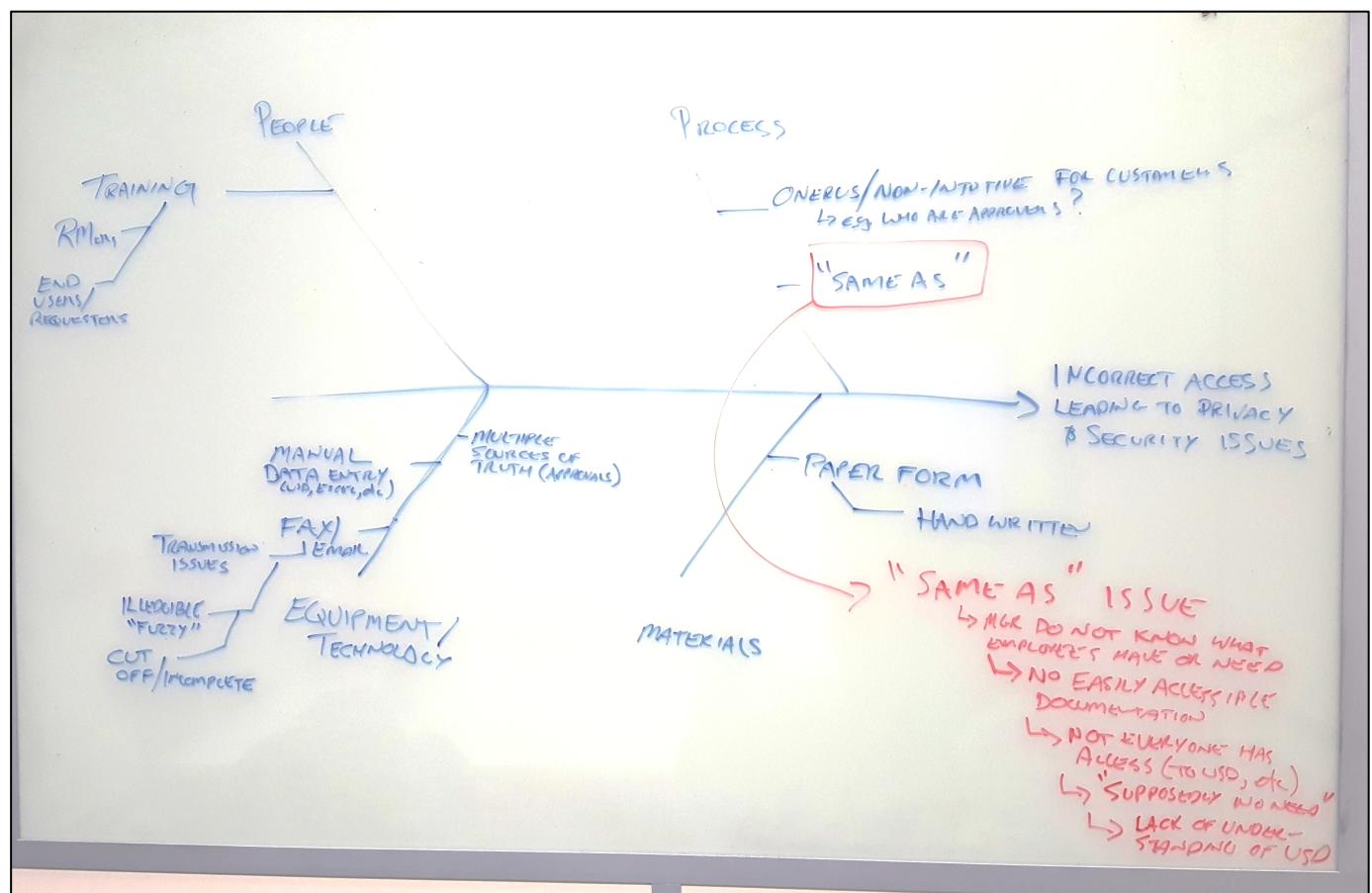
Physical constraints

- Making the limits of possible operation(s) visible
- No special training is required
- Ease of interpretation
- Legacy problem
 - Oh the dreaded legacy
 - Superior solution



Physical constraints

- Making the limits of possible operation(s) visible
- No special training is required
- Ease of interpretation
- Legacy problem
 - Oh the dreaded legacy
 - Superior solution
- Design questions
 - E.g. (AR): Adobe Areo: <https://youtu.be/1F83n8W2JUg>
 - Adobe Pronto: <https://youtu.be/5QsvjrbKeI4>



Cultural constraints

Cultural constraints

- Sets of allowable actions for (social) situations



Cultural constraints

- Sets of allowable actions for (social) situations
- Schemas in the mind

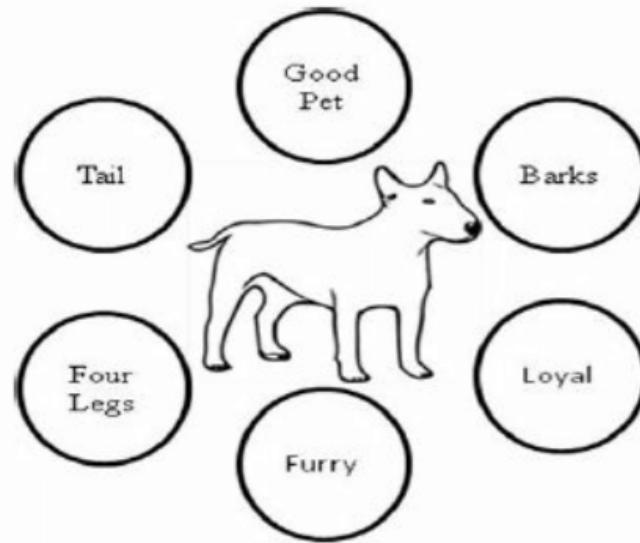


Figure 1. Simple Schema of a Dog

a schema is a theoretical representation of an outline or model.

Cultural constraints

- Sets of allowable actions for (social) situations
- Schemas in the mind
- Norms, conventions, & standards



Cultural constraints

- Sets of allowable actions for (social) situations
- Schemas in the mind
- Norms, conventions, & standards
- Designer's "curse"



Cultural constraints

- Sets of allowable actions for (social) situations
- Schemas in the mind
- Norms, conventions, & standards
- Designer's "curse"
- Change over time



Semantic constraints

- J. Raskin. *The Humane Interface*. Addison-Wesley. 2000.

Semantic constraints

- What are semantics?
 - Locus of attention



- J. Raskin. The Humane Interface. Addison-Wesley. 2000.

Semantic constraints

- What are semantics?
 - Locus of attention
- Situation knowledge helps



- J. Raskin. The Humane Interface. Addison-Wesley, 2000.

Semantic constraints

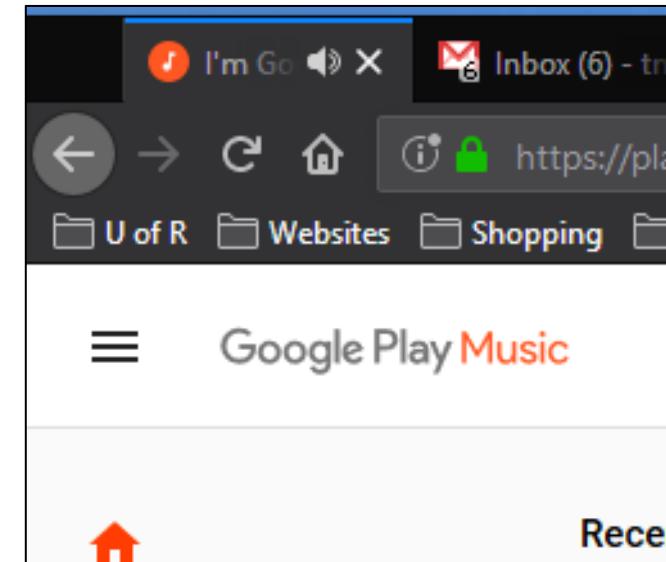
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Semantic constraints

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Semantic constraints

- What are semantics?
 - Locus of attention
- Situation knowledge helps
- Again, changes over time

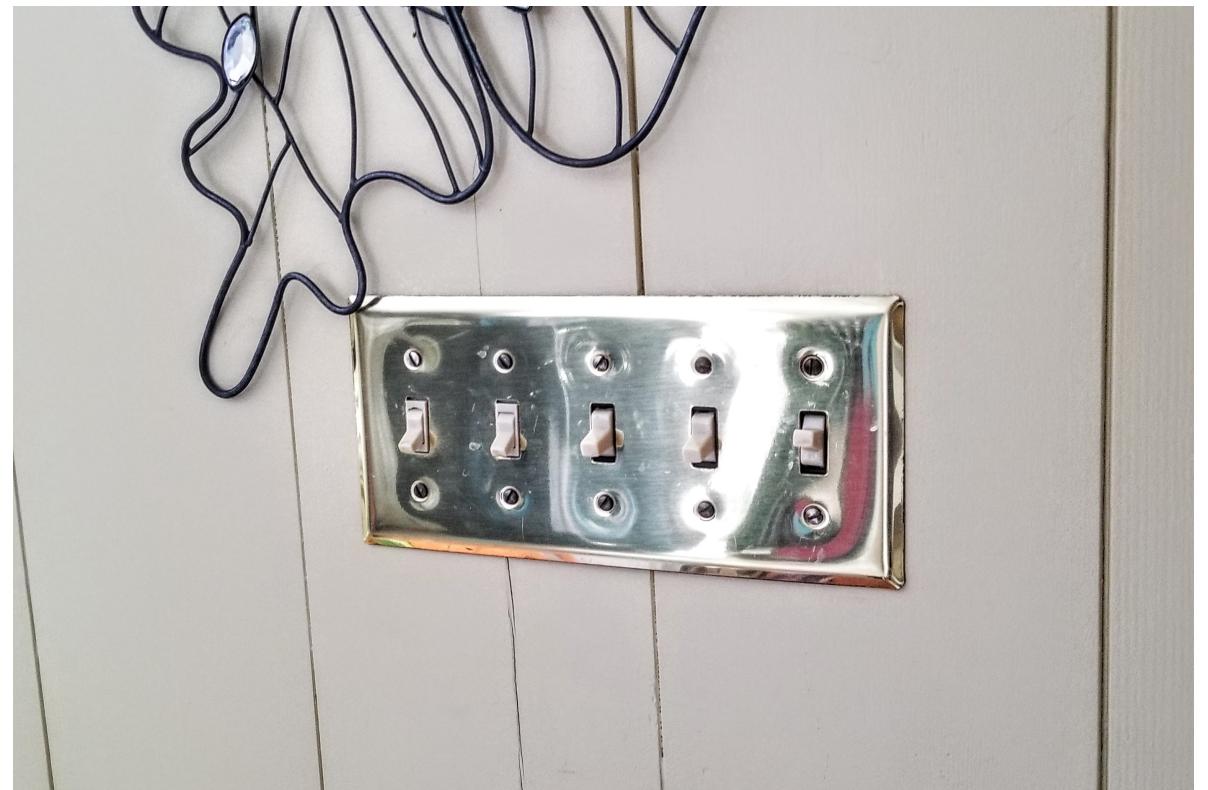


- J. Raskin. *The Humane Interface*. Addison-Wesley, 2000.

Logical constraints

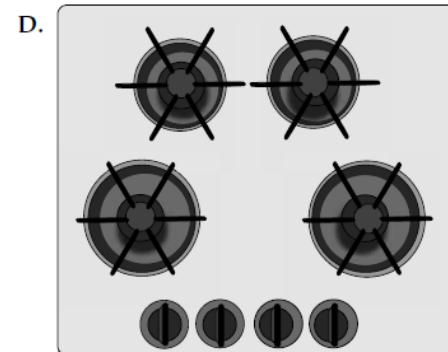
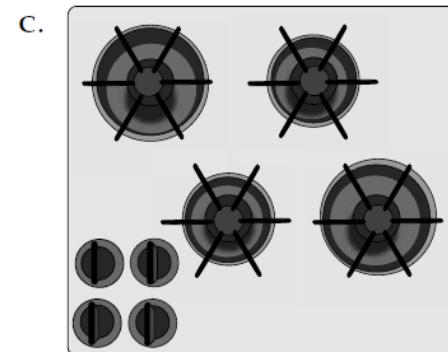
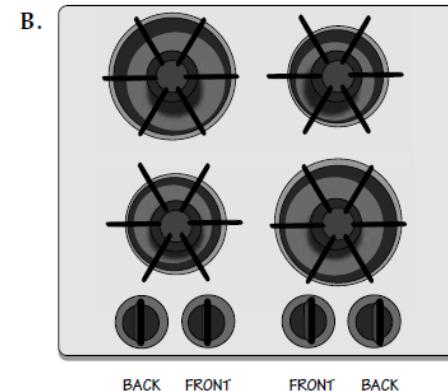
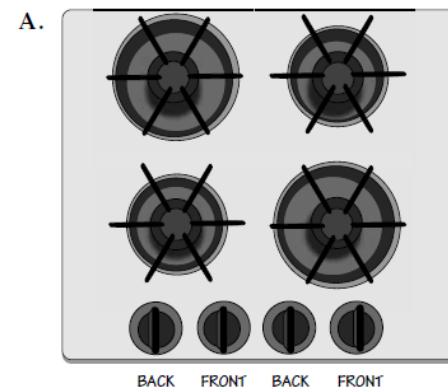
Logical constraints

- Spatial & functional layout



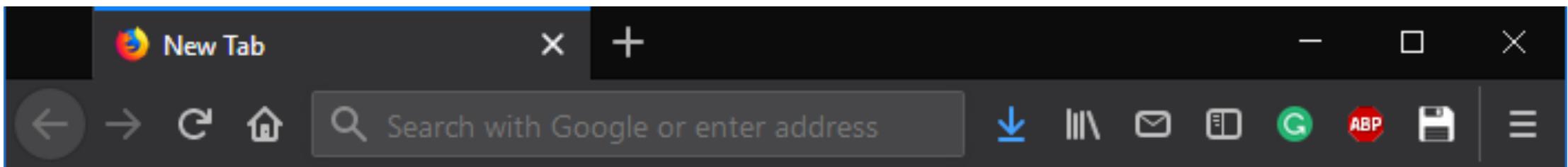
Logical constraints

- Spatial & functional layout
- Importance of natural mappings



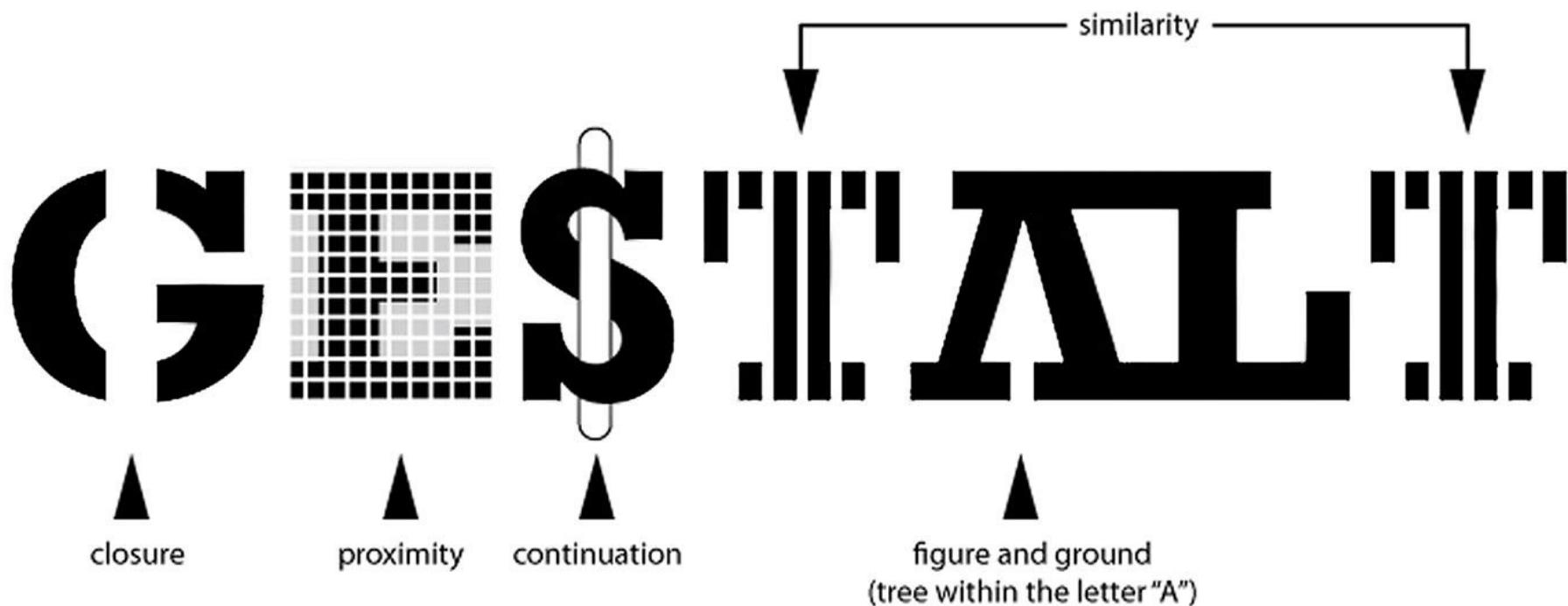
Logical constraints

- Spatial & functional layout
- Importance of natural mappings



Logical constraints

- Spatial & functional layout
- Importance of natural mappings



Constraints & forcing behavior

Constraints & forcing behavior

- Forcing functions



Constraints & forcing behavior

- Forcing functions
- Three types of forcing functions
(Safety Engineering)
 - Interlocks
 - Lock-ins
 - Lock-outs



Constraints & forcing behavior

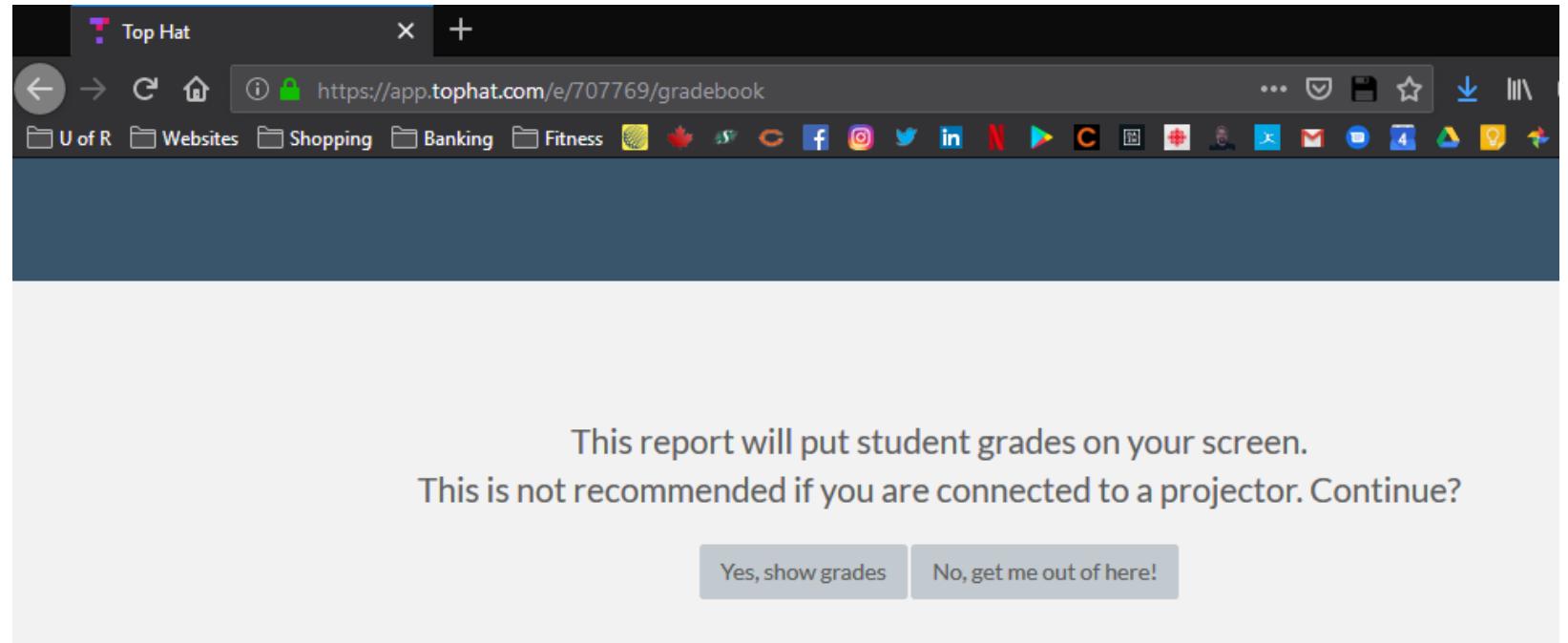
- Forcing functions
- Three types of forcing functions
(Safety Engineering)
 - Interlocks
 - Lock-ins
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FIGURE 4.6 A Lock-In Forcing Function. This lock-in makes it difficult to exit a program without either saving the work or consciously saying no to. Notice that it is politely configured so that the desired operation can be taken right from the message.

Constraints & forcing behavior

- Forcing functions
- Three types of forcing functions
(Safety Engineering)
 - Interlocks
 - Lock-ins
 - Lock-outs



Questions/Discussion

- Constraints (general)
- Constraints (focused)
- Forcing functions

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