

# KNOWING WHAT TO DO: CONSTRAINTS, DISCOVERABILITY AND FEEDBACK

DESIGN OF EVERYDAY THINGS-  
(DON NORMAN) CHAPTER 4

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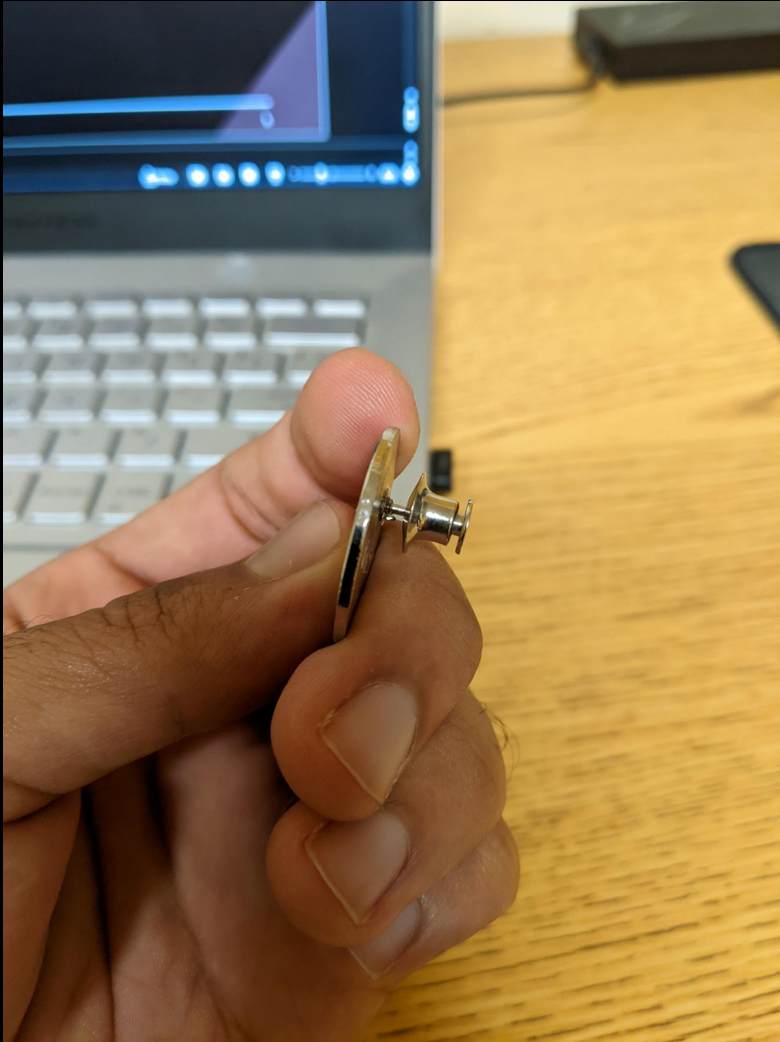


**B.**

# HOW DO WE DETERMINE HOW TO USE SOMETHING WE HAVE NEVER SEEN BEFORE?

Combine the Knowledge in the world with the knowledge  
in the head .

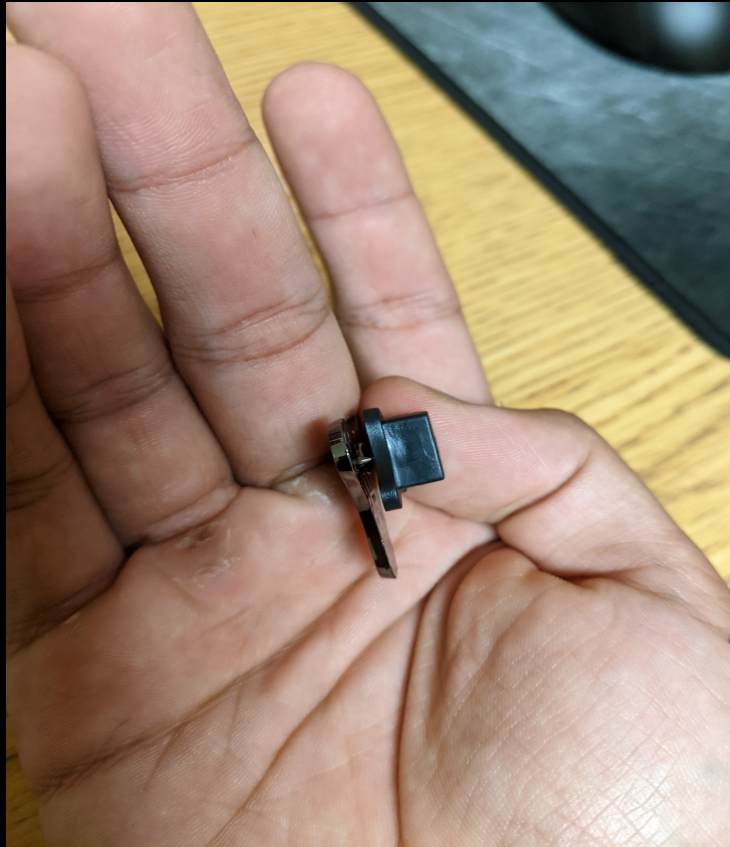




# Cinestill Enamel Pin Example

- What helped?
- Visual identifiers
- Physical constraints

A similar pin that follows a better design.



# What are Constraints?

- Constraints are powerful clues, limiting the set of possible actions.
- Good use of constraints = Easy to understand what affordances are possible.
- Limit unnecessary elements from our design.
- Goal to direct the user towards understanding the way to operate the device.

# 4 Kinds of Constraint

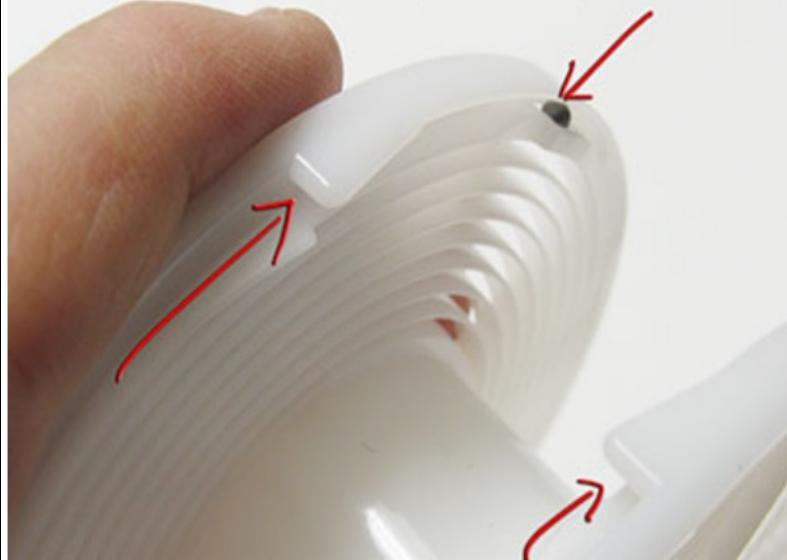
Physical

Cultural

Semantic

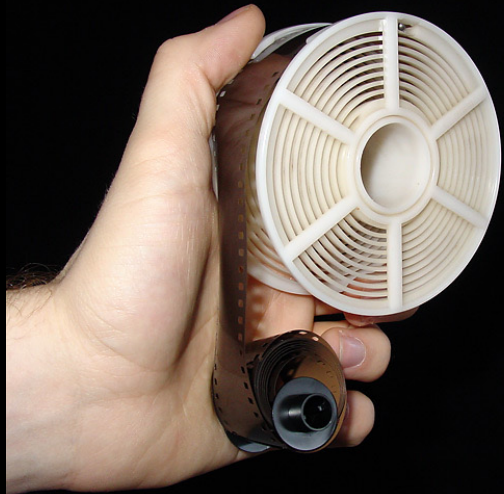
Logical

A film reel showing the "gate" where the film is inserted, and the ball which keeps the film in place.



# Physical Constraints

- A physical constraint is a physical limitation that constrains possible operations.
- Film loading spool
- Film is loaded in complete darkness.
- Physical constraints are a must for easy loading.





- Cultural Constraints are certain actions that are allowed by some cultures and some that are not.
- They vary by the culture.

# Cultural Constraints



# Another Example of Cultural constraints: Driver seat in Asia vs Driver seat in the North America



# Logical constraints

- Logical relationship between the spatial or functional layout of components and the things that they affect or are affected by.
- Things that make sense logically.
- Like in the stove example from the previous chapter where mapping also plays a role.



# Semantic Constraints

- Semantic constraints are those that rely upon the meaning of the situation to control the set of possible actions.
- Semantic constraints rely upon our knowledge of the situation and of the world.
- Semantic constraints can change with time just like cultural semantics.



# Constraints that force Desired behavior

- Interlocks
- Lock Ins
- Lockouts

# Inter Locks

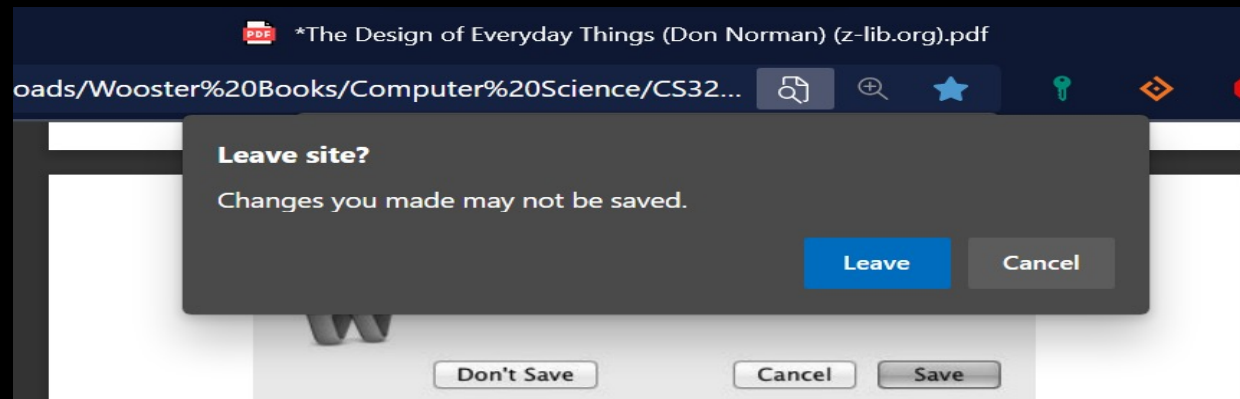
- An interlock forces operations to take place in proper sequence. Examples include Microwaves forcing functions to prevent people from opening the door by cutting off power.



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# Lock Ins

- A lock-in keeps an operation active, preventing someone from prematurely stopping examples include Microsoft office applications asking whether we want to quit without saving our work. Console platforms making games and features exclusive to them.





# Lockouts

- A lockout prevents someone from entering a space that is dangerous or prevents an event from occurring.
- Example: Some film cameras will not allow the user to fire the shutter until the film is advanced to prevent double exposure.

# Conventions, Constraints and Affordances



**CHANGE  
AHEAD**

- Conventions are a special kind of cultural constraint. For example, the means by which people eat is subject to strong cultural constraints and conventions.
- Affordances are the potential actions that are possible.
  - Conventions can clash with change.
  - Change is not always received well.



# Standardization

- If all else fails Standardize!
- Simplify everything by remaining consistent.



THANK YOU

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