Which is the real penny?
User Knowledge

Users can take the correct action with imprecise knowledge.

We do better recognizing with prompts than recalling precise information.

Users don’t have to remember every detail, if the UI provides cues to direct them.

Constraints can be one type of cue.
Physical Constraints

The physical design constrains the possible actions.

Example from last time: Scissors.
Constraints

*Forcing Functions* – actions are constrained to force a correct action before the *next* action can be taken.

Example: You must have a key inserted to start a car.
Constraints

*Interlocks* - constraining actions to take a proper sequence.

Example: safety switches (lawn mower, chainsaw, etc.)
Constraints

*Lockouts* – prevents someone from taking an undesirable action.

Example: Baby locks on cabinet doors.
Constraints

*Lock In* – keeps an operation active, preventing a user from prematurely stopping.

Example: Washing machine that locks the lid in spin cycle.
Cultural Constraints

Conventions that are *learned* and shared can become *standards*.

Examples:
Left = Hot Water and Right = Cold Water

Which way to tighten a screw?
Do Standards Ever Change?

My first car had two keys.

Why?
Standards

It is *difficult* to abandon long accepted *standards*, but new technology can make some obsolete.

Any examples?
Putting it together

Users are able to combine *knowledge* in their head with *information* they see in the world.

*Mapping* is an approach to facilitate this.
Stove Burners
Mappings can be cultural

Mapping on a timeline?
Left to Right or Right to Left

“Because iocane comes from Australia, as everyone knows, and Australia is entirely peopled with criminals, and criminals are used to having people not trust them, as you are not trusted by me, so I can clearly not choose the wine in front of you.”
Urinal?

THIS IS A MOP SINK
Brake Release and Trunk Release
Computer