

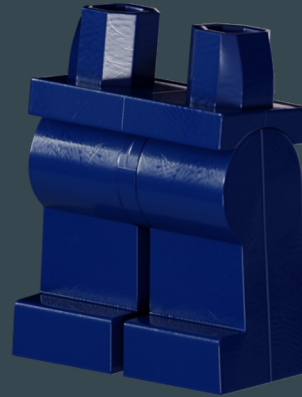
DOET Chapter 4



By Daniel Cohen-Cobos

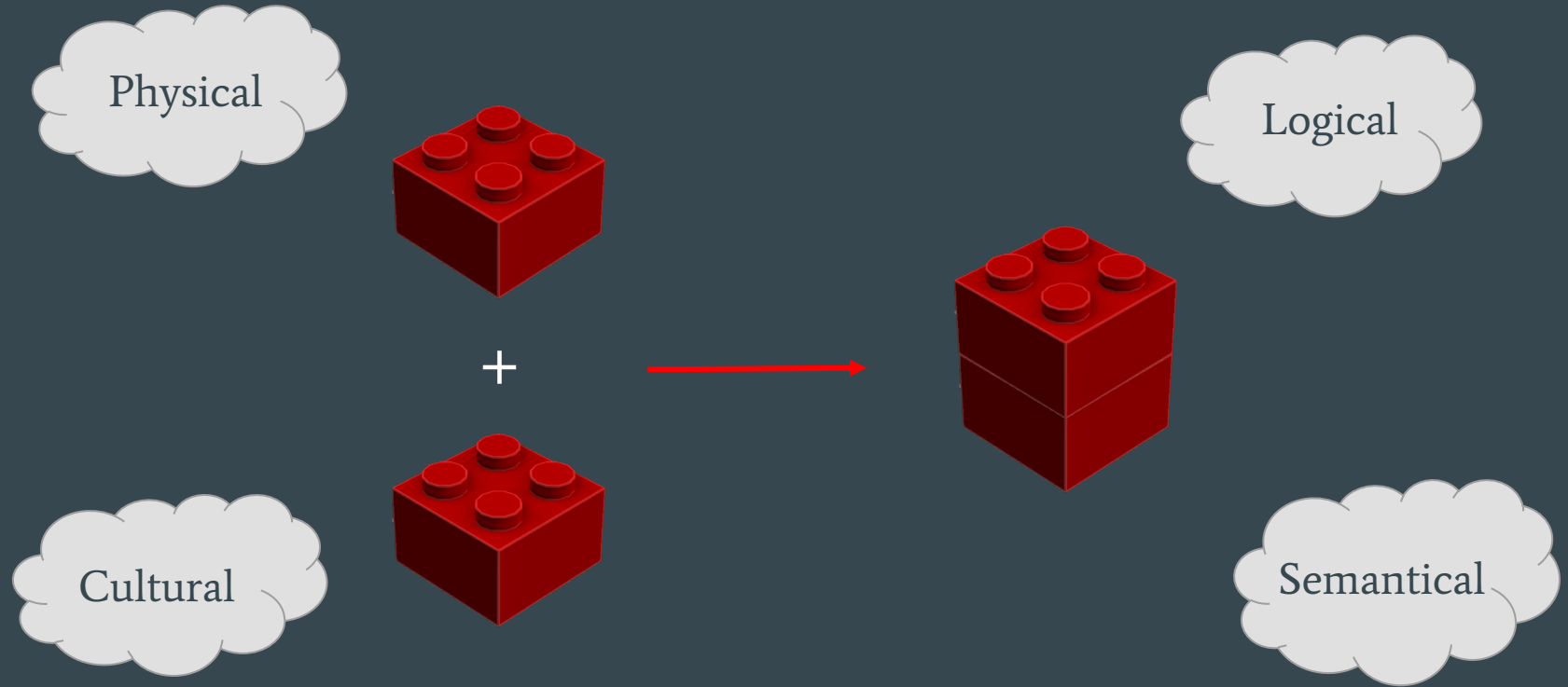
September 7th 2022

Consider a small Lego Set

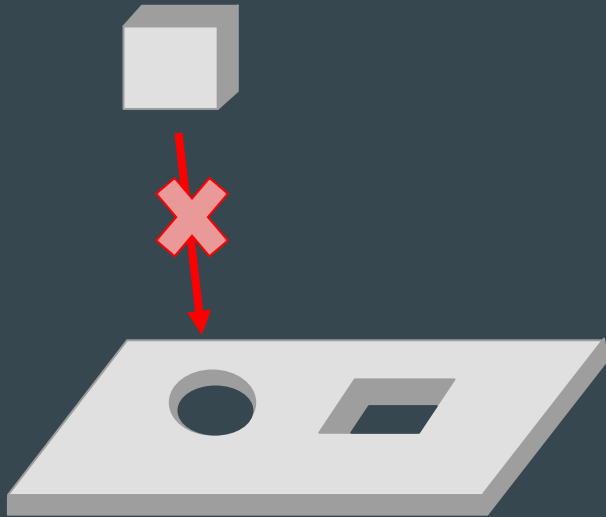


Where does this piece go?

Constraints

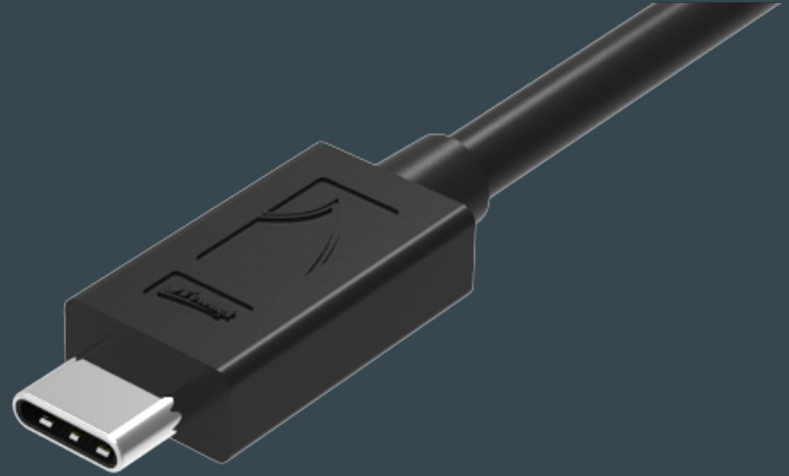


Physical constraints



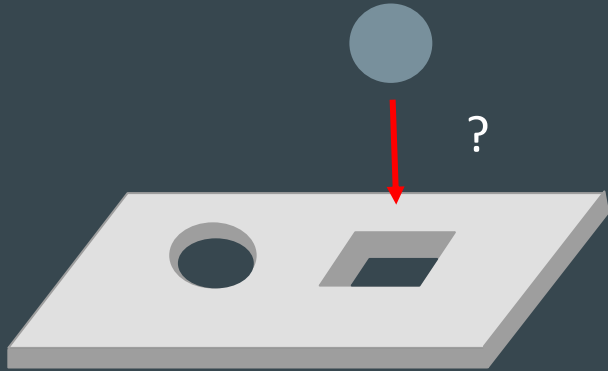
They constraint possible operation

Physical constraints



Physical constraint design alternative?

Cultural constraints



Could you insert the sphere through the square?

Cultural constraints

Is there something wrong
in this picture?

It raises the question: *Why?*



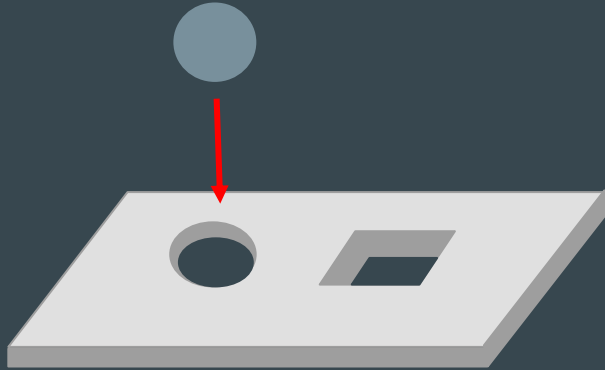
Cultural constraints

A lego piece could be placed almost anywhere, so why place it there?



Semantic constraints

So, *Why there?*



It was designed to be used like that

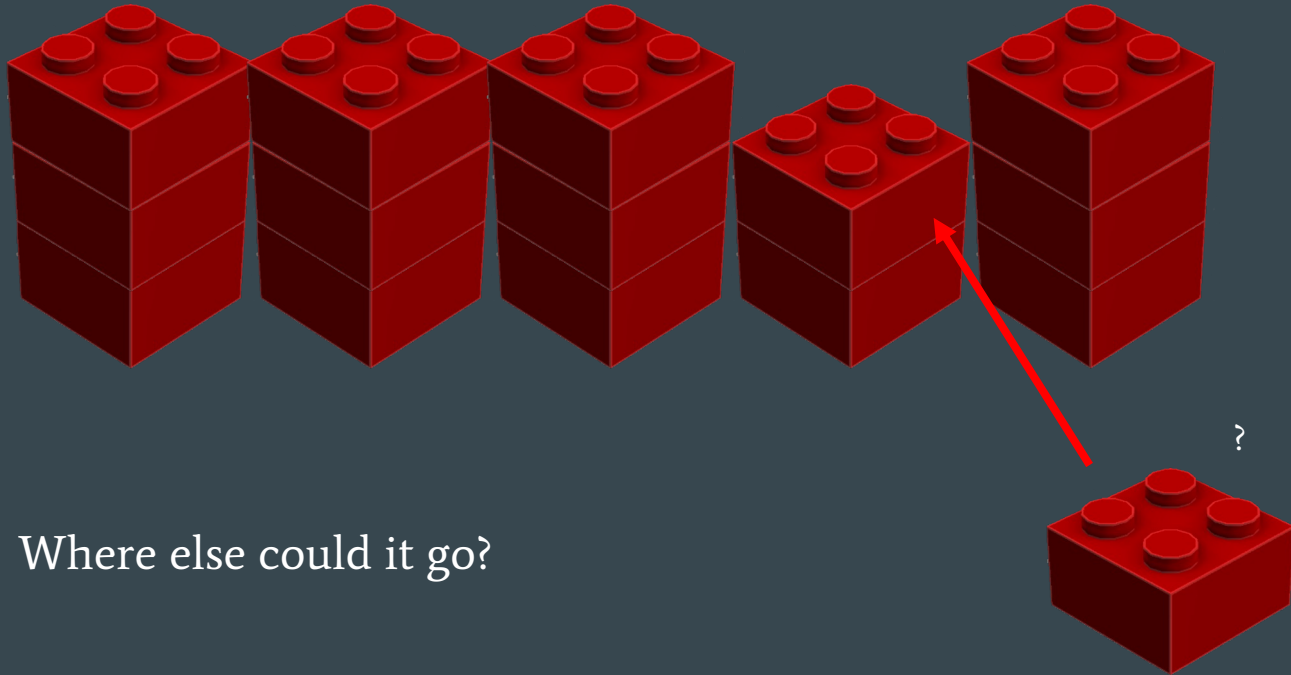
Semantic constraints

Where does the pilot go?

Where does the helmet go?



Logical constraints



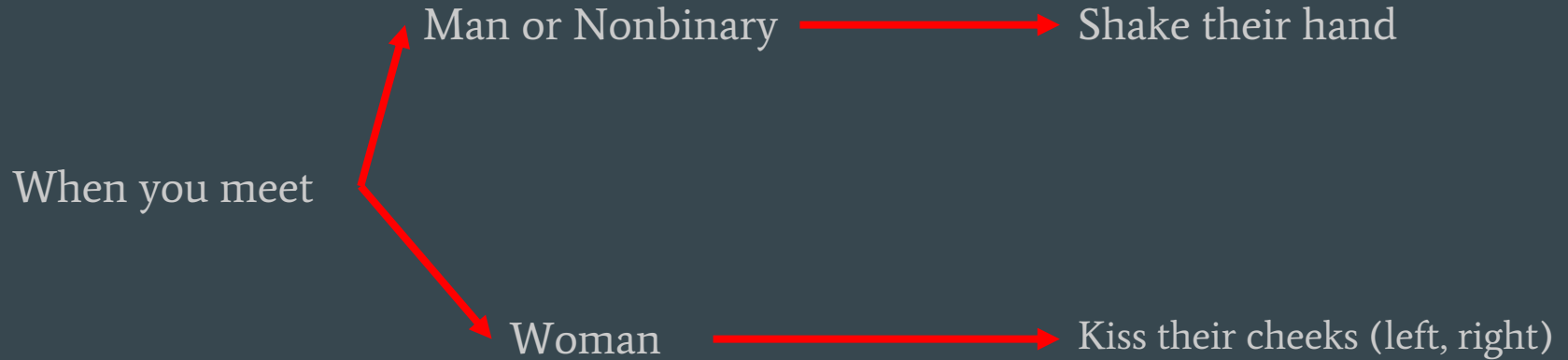
Cultural Norms, Conventions and Standards

Cultural Norms, Conventions and Standards

When you meet someone  Shake their hand



Cultural Norms, Conventions and Standards



Using cultural standards and constraints



Doors



Doors



Switches

What device do they control?

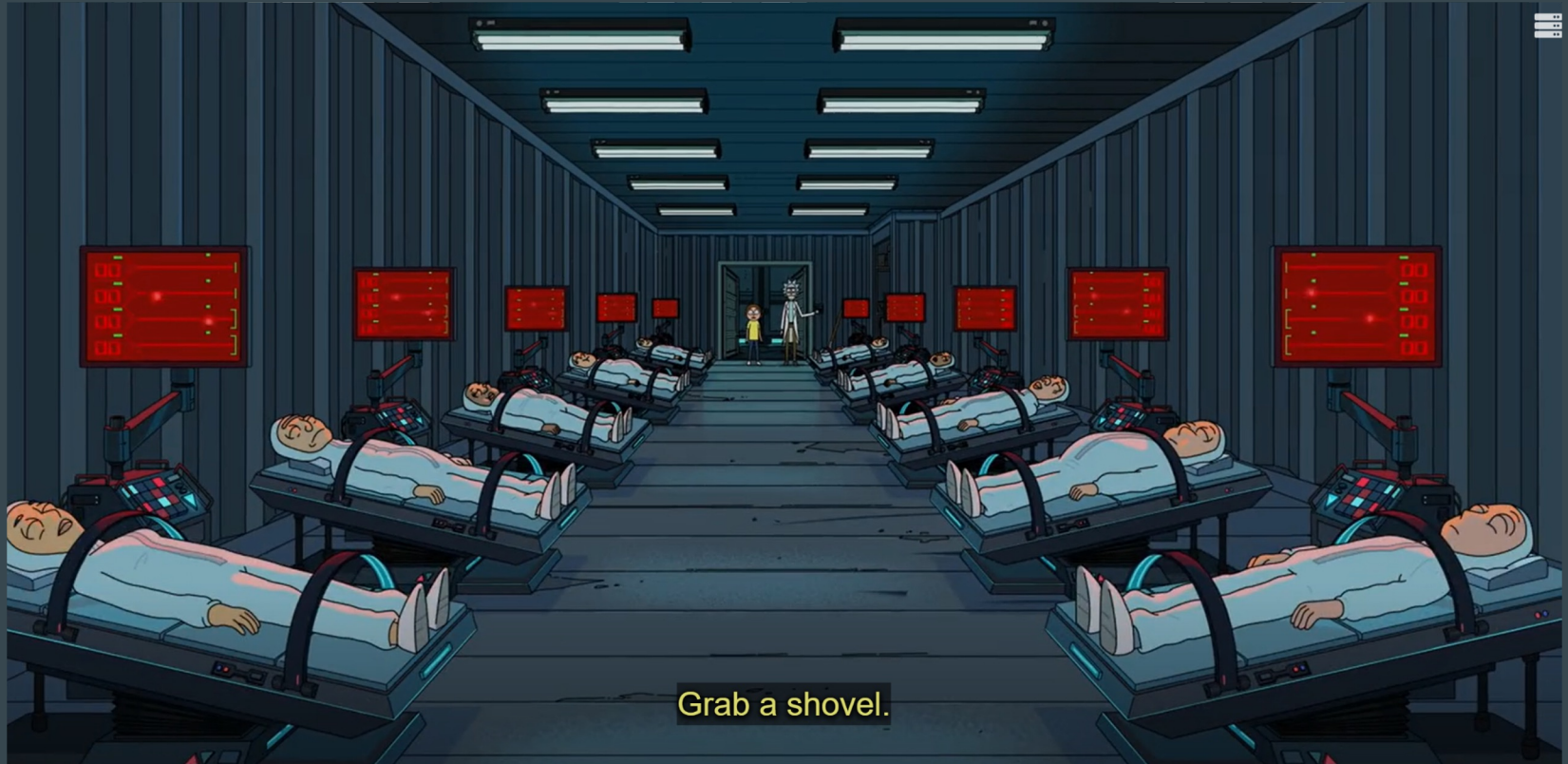
What is the mapping?



Switches



Switches



Grab a shovel.

Switches



“You’ll get used to it”

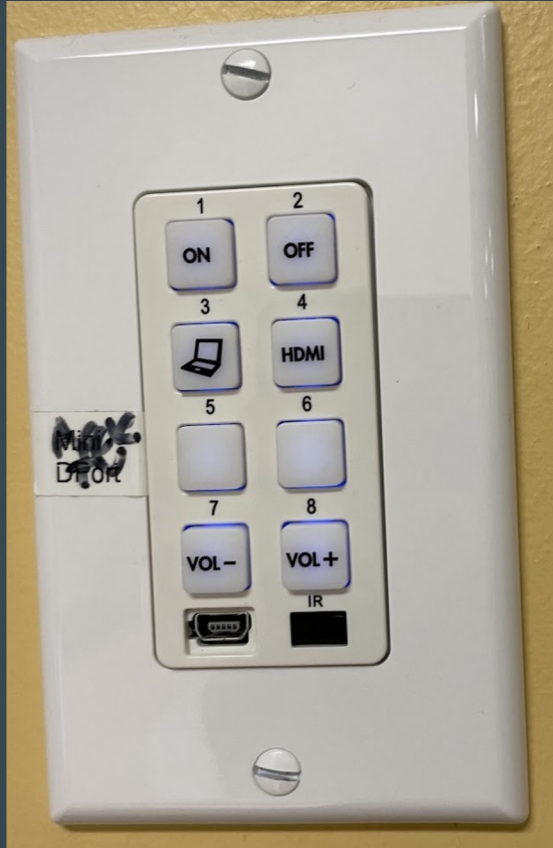


Switches

What does good mapping look like?



Activity centered controls



Constraints that Force the Desired Behavior



Forcing Functions



The device will not unlock until the user's face or his pin password is received

Interlocks

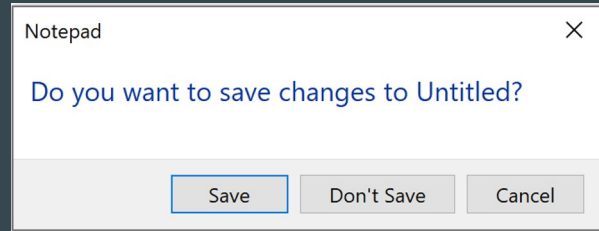
It forces operations to take place in proper order

If the door opens the microwave emitter will shut down



Lock-ins

It keeps an operation active,
preventing someone from
prematurely stopping it



Lockouts

Keeps someone in a space or prevents an action until the operations are done



Importance of conventions



You could turn on a light using a doorknob, but would you?

Importance of conventions



Turn on → Press Button

Turn off → Press and hold Button

People's response to changes in convention



Object and complain

Example: Metric System

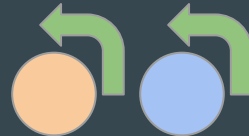
Specific design we get used to



Hot



Cold



Change temperature without
changing water flow



Change water flow without
changing temperature

If all else fails, Standardize

When no other solution appears possible,
simply design everything the same way

If you can't put the knowledge on the
device, then develop a cultural constraint



Using sound as signifiers



Using sound as Signifiers



Beeps when you swipe your COW card



Also beeps when it doesn't read the card correctly



Skeuomorphic designs

It has its benefits as in easing the transition from old to new designs



Thank you for listening!

Questions?