UX Design

MIS3506 * Lavin * Fall 2020

What are the Gulfs?

The distance between the mental representations (conceptual model) of the user and the physical components and states of the environment.

Gulf of execution is the difference between the intentions of the users and what the system allows them to do or how well the system supports those actions (Norman)

Gulf of evaluation is the degree to which the system/artifact provide representations that can be directly perceived and interpreted in terms of the expectations and intentions of the user (Norman)

Gulf of Execution

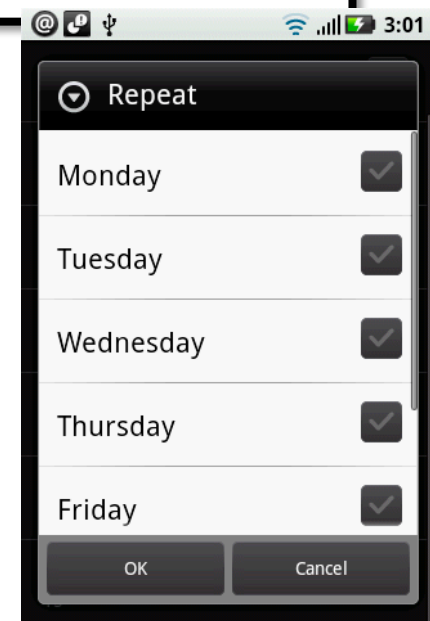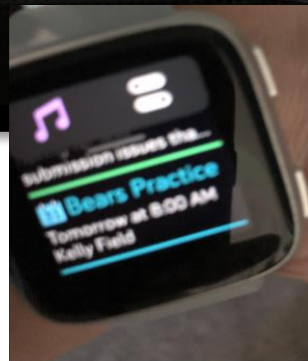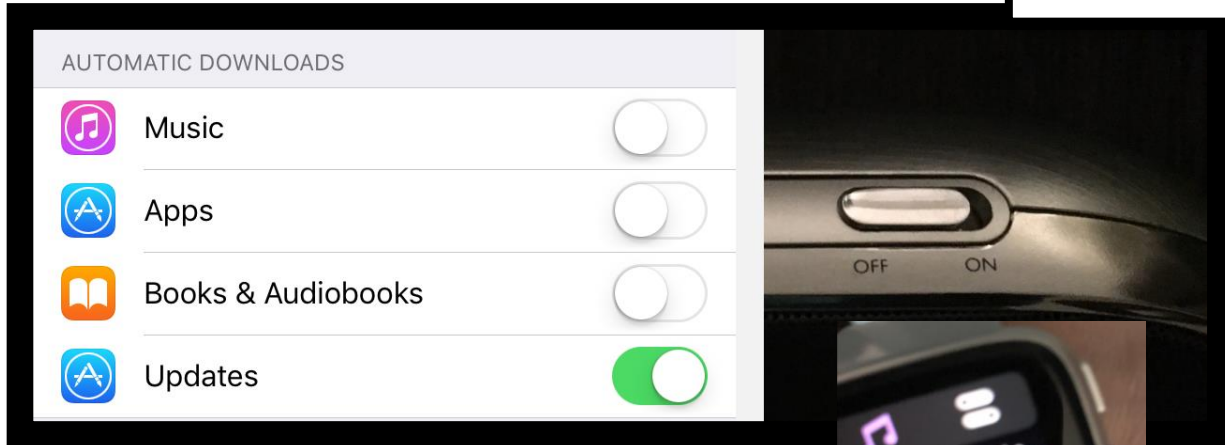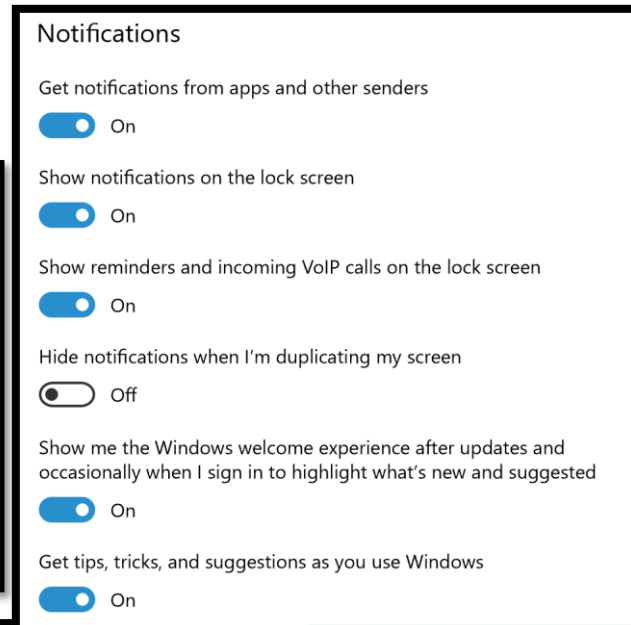Trying to figure out how something operates

Gulf of Evaluation

Trying to figure out what happened

Designer's Role…

Be the bridge

Bluetooth & other devices

Add Bluetooth or other device

Bluetooth

Off

Mouse, keyboard, & pen

Dell KB216 Wired Keyboard

Bluetooth & other devices

Add Bluetooth or other device

Bluetooth

On

Now discoverable as "DESKTOP-ISFRCAL"

Mouse, keyboard, & pen

Dell KB216 Wired Keyboard

Notifications

Get notifications from apps and other senders

On

Show notifications on the lock screen

On

Show reminders and incoming VoIP calls on the lock screen

On

Hide notifications when I'm duplicating my screen

Off

Show me the Windows welcome experience after updates and occasionally when I sign in to highlight what's new and suggested

On

Get tips, tricks, and suggestions as you use Windows

On

AUTOMATIC DOWNLOADS

Music

Apps

Books & Audiobooks

Updates

OFF   ON

Bears Practice
Tomorrow at 8:00 AM
Kelly Field

@ 🔒 ⚡ 🔋 3:01

Repeat

Monday

Tuesday

Wednesday

Thursday

Friday

OK   Cancel

avoid the gulfs!

GOAL

GULF OF EXECUTION

How do I work this?

What can I do?

GULF OF EVALUATION

What happened?
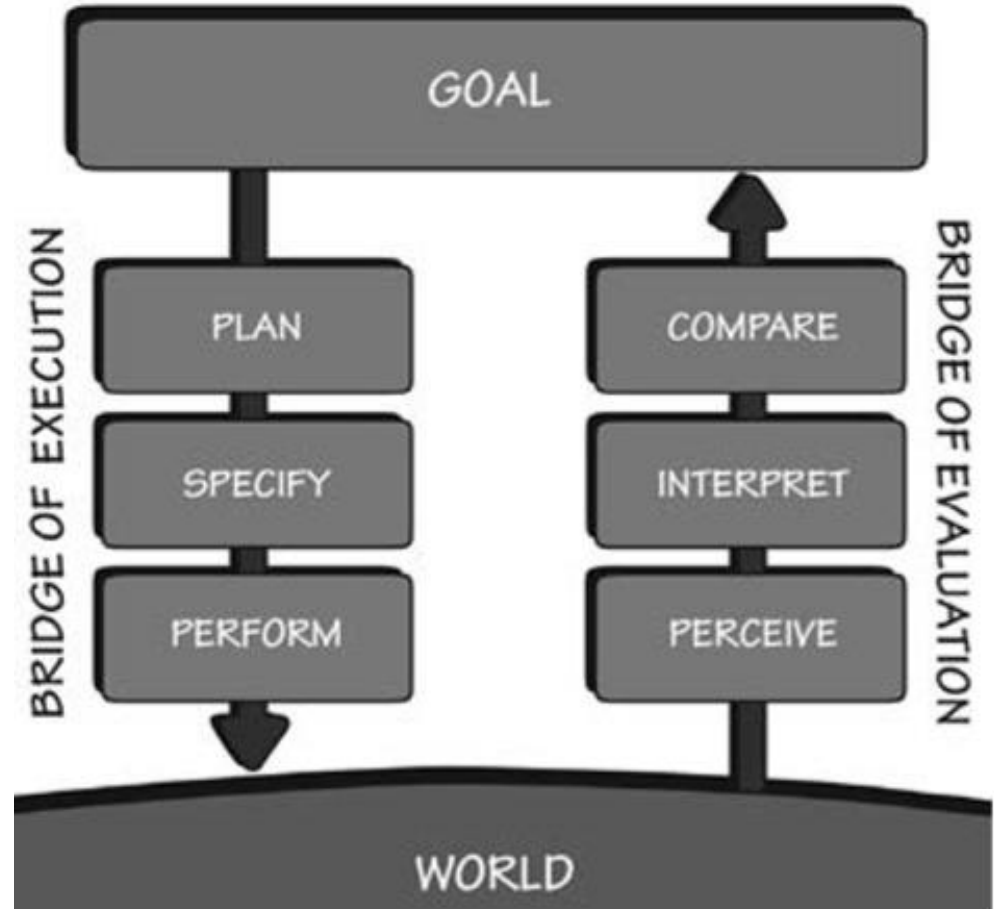
Is this what I wanted?

WORLD

7 Stages – Deleting an Email

Think through the steps you take to delete an email.

Now – let's think through it with the lens of Norman –
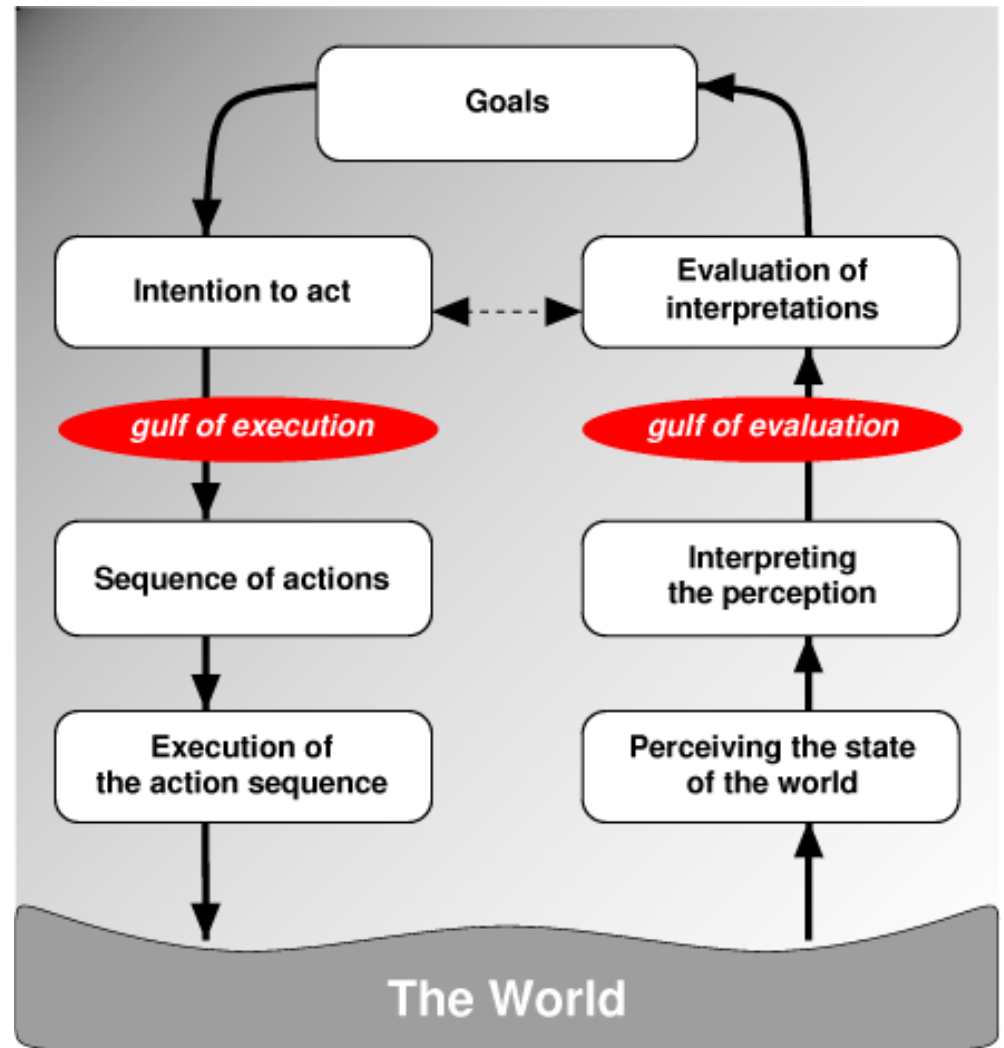
Seven stages of action

7 Stages - Deleting an Email

Goal	Goal – form the goal
Plan	Plan (the action)
Specify	Specify – an action sequence
Perform	Perform – the action sequence
Perceive	Perceive – the state of the world
Interpret	Interpret – the perception
Compare	Compare – the outcome with the goal

Putting it together

avoid the gulfs!

Advice to the Designer

1. Provide Visibility of System Status

2. Meet the Conceptual Model of the User

3. Consistency in presentation of operations and results through signifiers

4. Provide good Mapping

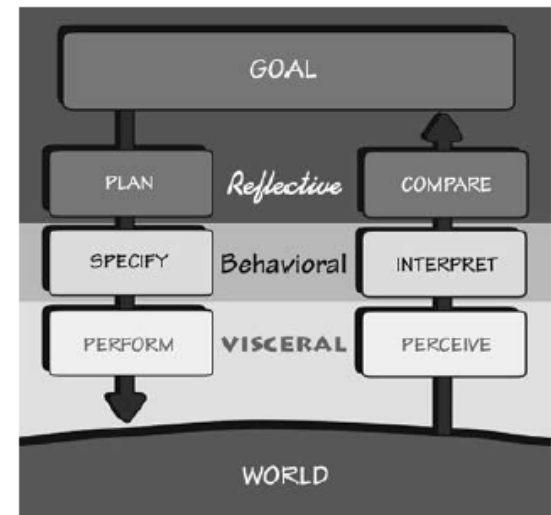5. Provide full and continuous feedback

Why is this so hard?

Human thought

- Subconscious: fast, automatic, daily skilled behavior
- Conscious: slow, controlled, limited, infrequent

Processing

- Reflective - thinking
- Behavioral - actions
- Visceral- 'lizard brain'

GOAL

PLAN   *Reflective*   COMPARE

SPECIFY   *Behavioral*   INTERPRET

PERFORM   **VISCERAL**   PERCEIVE
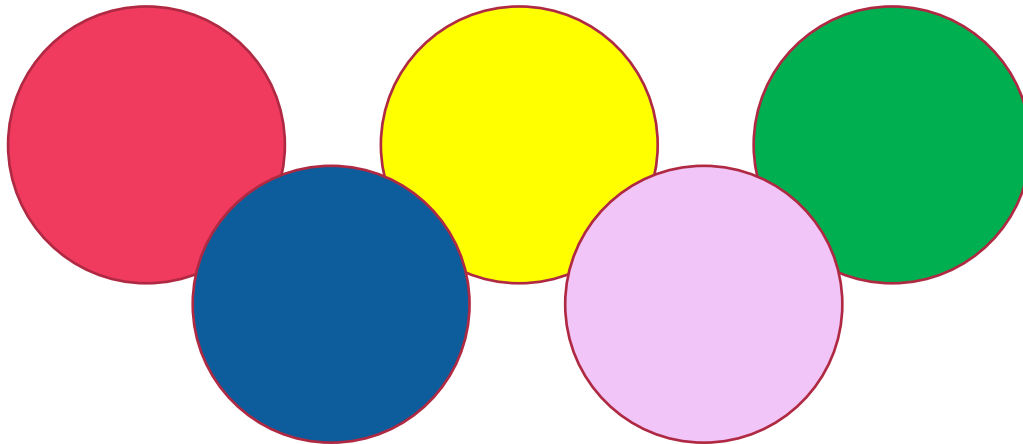
WORLD

Three Levels of Processing

REFLECTIVE

BEHAVIORAL

VISCERAL

Three Levels of Processing

❑Most basic level of processing

❑Quick judgements about the environment

❑Respond quickly and subconsciously – without awareness or control

VISCERAL

Three Levels of Processing

❑Home of learned skills and triggered by situations that match appropriate patterns

❑Every action is associated with an expectation

BEHAVIORAL

Effective
design
satisfies
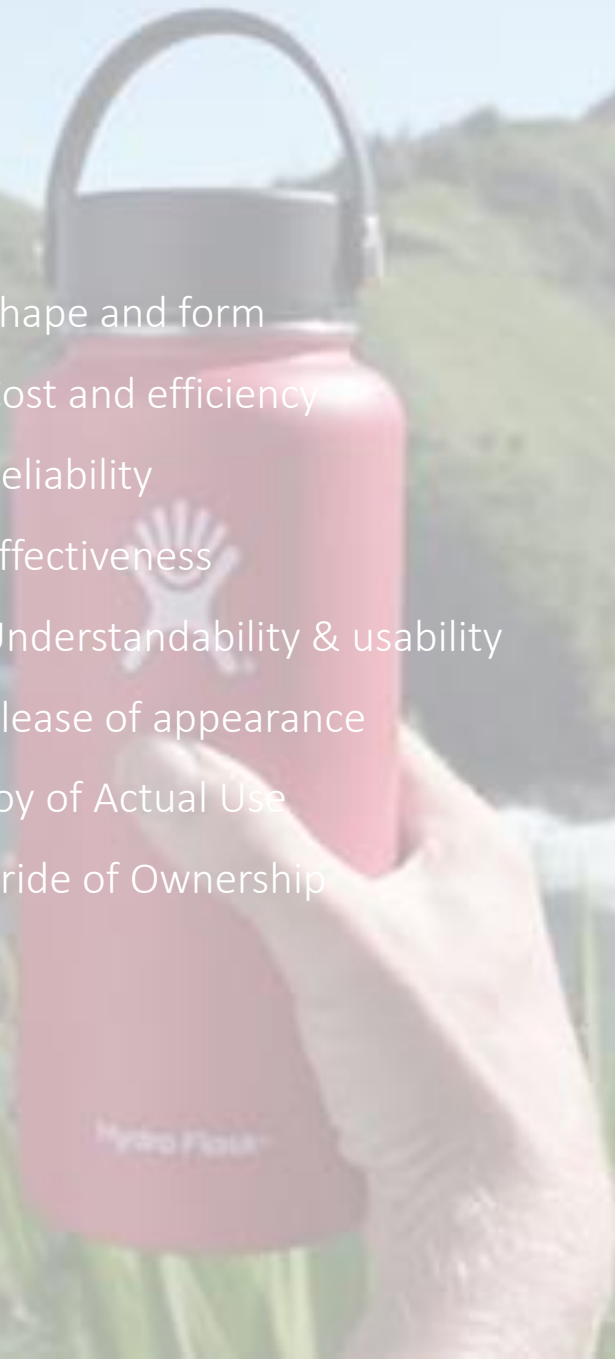
Shape and form

Cost and efficiency

Reliability

Effectiveness

Understandability & usability

Please of appearance

Joy of Actual Use

Pride of Ownership
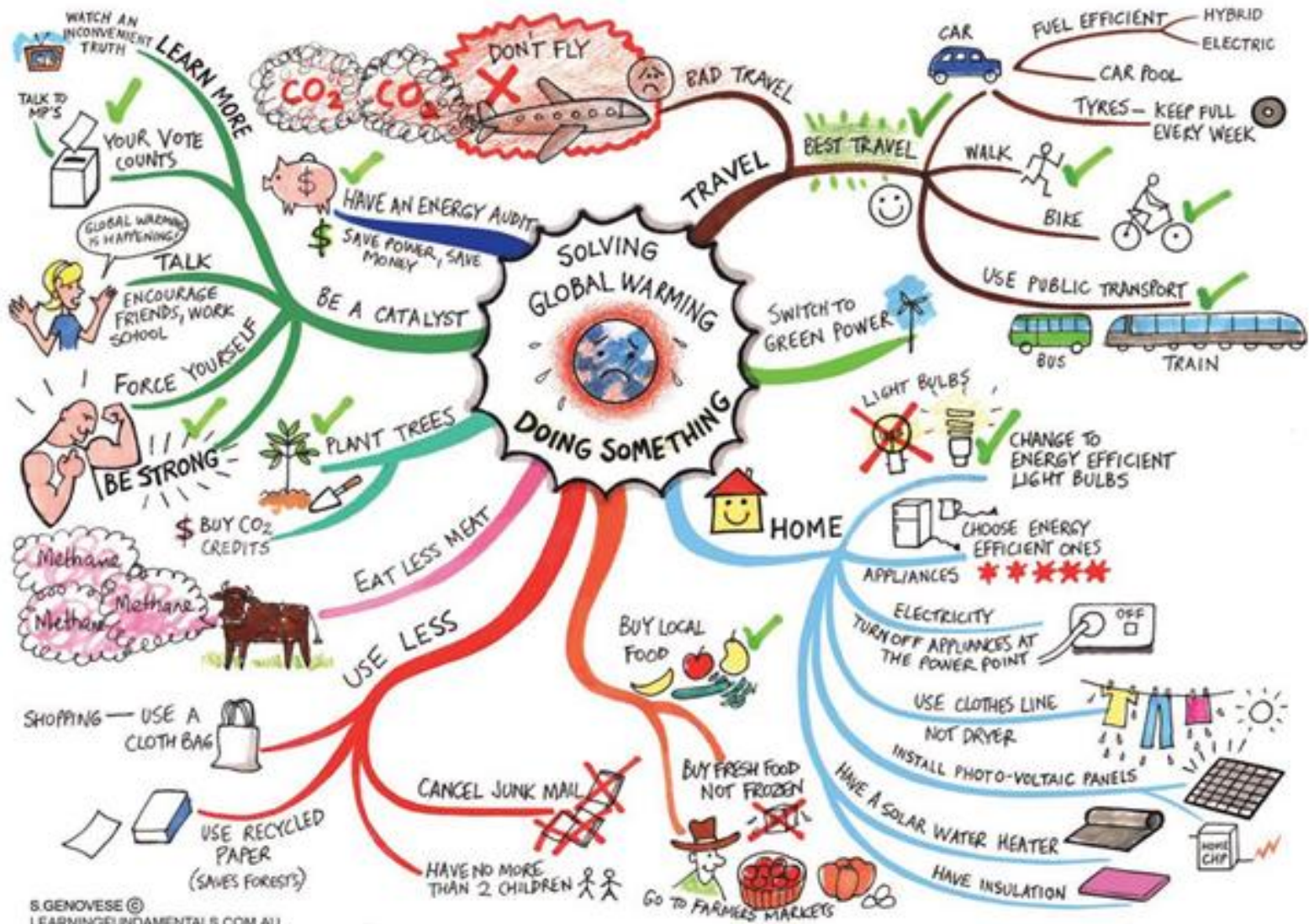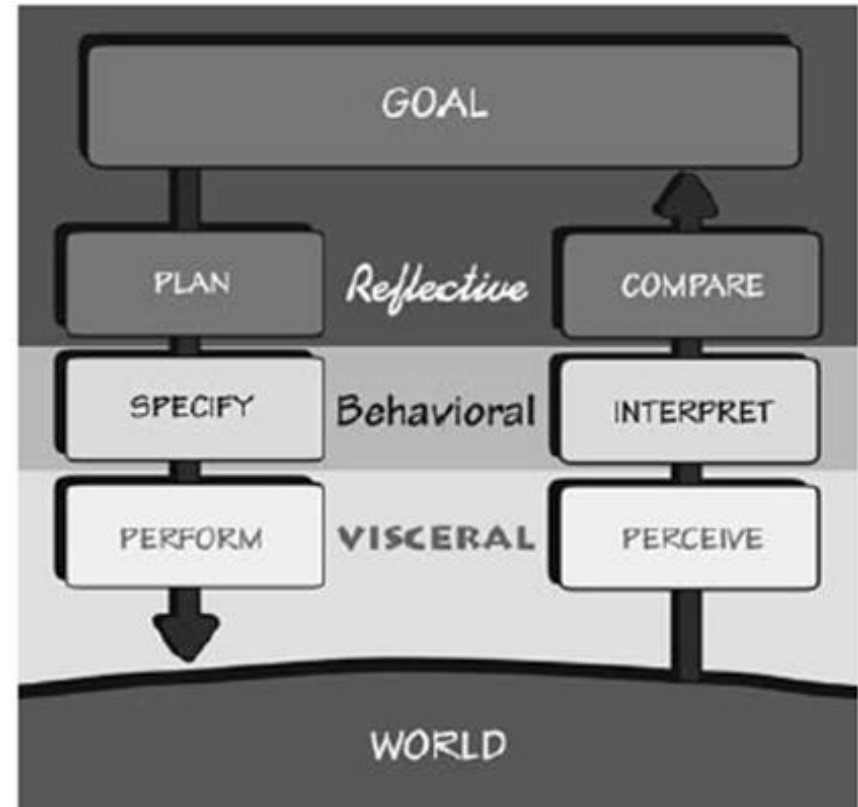
Three Levels of Processing

❑ Conscious cognition
❑ Deep understanding
❑ Reasoning and conscious decision making
❑ Evaluation of the circumstances, assessing blame or responsibility
❑ Highest levels of emotions

REFLECTIVE

Solving Global Warming — Doing Something

LEARN MORE
- WATCH AN INCONVENIENT TRUTH
- TALK TO MP'S
- YOUR VOTE COUNTS

TALK
- GLOBAL WARMING IS HAPPENING!
- ENCOURAGE FRIENDS, WORK, SCHOOL

BE A CATALYST
- HAVE AN ENERGY AUDIT
- SAVE POWER, SAVE MONEY

FORCE YOURSELF
BE STRONG
- $ BUY CO_2 CREDITS
- PLANT TREES

USE LESS
- Methane
- EAT LESS MEAT
- SHOPPING — USE A CLOTH BAG
- USE RECYCLED PAPER (SAVES FORESTS)
- CANCEL JUNK MAIL
- HAVE NO MORE THAN 2 CHILDREN
- BUY LOCAL FOOD
- BUY FRESH FOOD NOT FROZEN
- GO TO FARMERS MARKETS

BAD TRAVEL
- DON'T FLY
- CO_2 CO_2

TRAVEL
BEST TRAVEL
- CAR
  - FUEL EFFICIENT — HYBRID, ELECTRIC
  - CAR POOL
  - TYRES — KEEP FULL EVERY WEEK
- WALK
- BIKE
- USE PUBLIC TRANSPORT — BUS, TRAIN

SWITCH TO GREEN POWER

HOME
- LIGHT BULBS — CHANGE TO ENERGY EFFICIENT LIGHT BULBS
- APPLIANCES — CHOOSE ENERGY EFFICIENT ONES ★★★★★
- ELECTRICITY — TURN OFF APPLIANCES AT THE POWER POINT
- USE CLOTHES LINE NOT DRYER
- INSTALL PHOTO-VOLTAIC PANELS
- HAVE A SOLAR WATER HEATER
- HAVE INSULATION

Levels of Processing & Stages of Action Cycle

Putting it to practice

Breakout

Each group will pick a computer powered device (e.g., Alexa, Fitbit, Kindle, VR glasses, smart badges, smart remotes, smart appliances)

Apply Norman's seven stages model to answer: 1. At which stage does the device fail? 2. Which design principles are deficient and why?

One person reports back to the class

Describe the process of submitting an assignment to OWLbox in terms of our discussion of feedback cycles. Specifically, discuss how the six specific stages of bridging the gulfs of execution and evaluation apply to submitting an assignment via OWLbox.

An ideal answer to this question will name the stages explicitly, and provide a concise explanation for either (a) how the interface successfully brings the user across that part of the gulf (e.g. how the interface helps user identify their goal in the context of the interface), or (b) why the interface fails to bring the user across that part of the gulf (e.g. how the interface fails to show evidence of how the model has changed).

Select an activity from your regular life that struggles with a large gulf of execution or gulf of evaluation, especially due to a weakness of the interface involved in the activity. First, describe what makes that gulf wide. What are the failures of the current interface to bridge the gulf?

Then, select a similar activity from your regular life that does a better job bridging its gulf of execution or gulf of evaluation. Briefly describe that activity and what gives it a narrower gulf, then describe what lessons could be borrowed from the second activity to resolve the wide gulf in the first activity.

I am only human (after all)

Blame yourself

Blame the wrong thing

Look for cause & effect

Learned helplessness

Positive psychology (not!)