HCI: LAWS

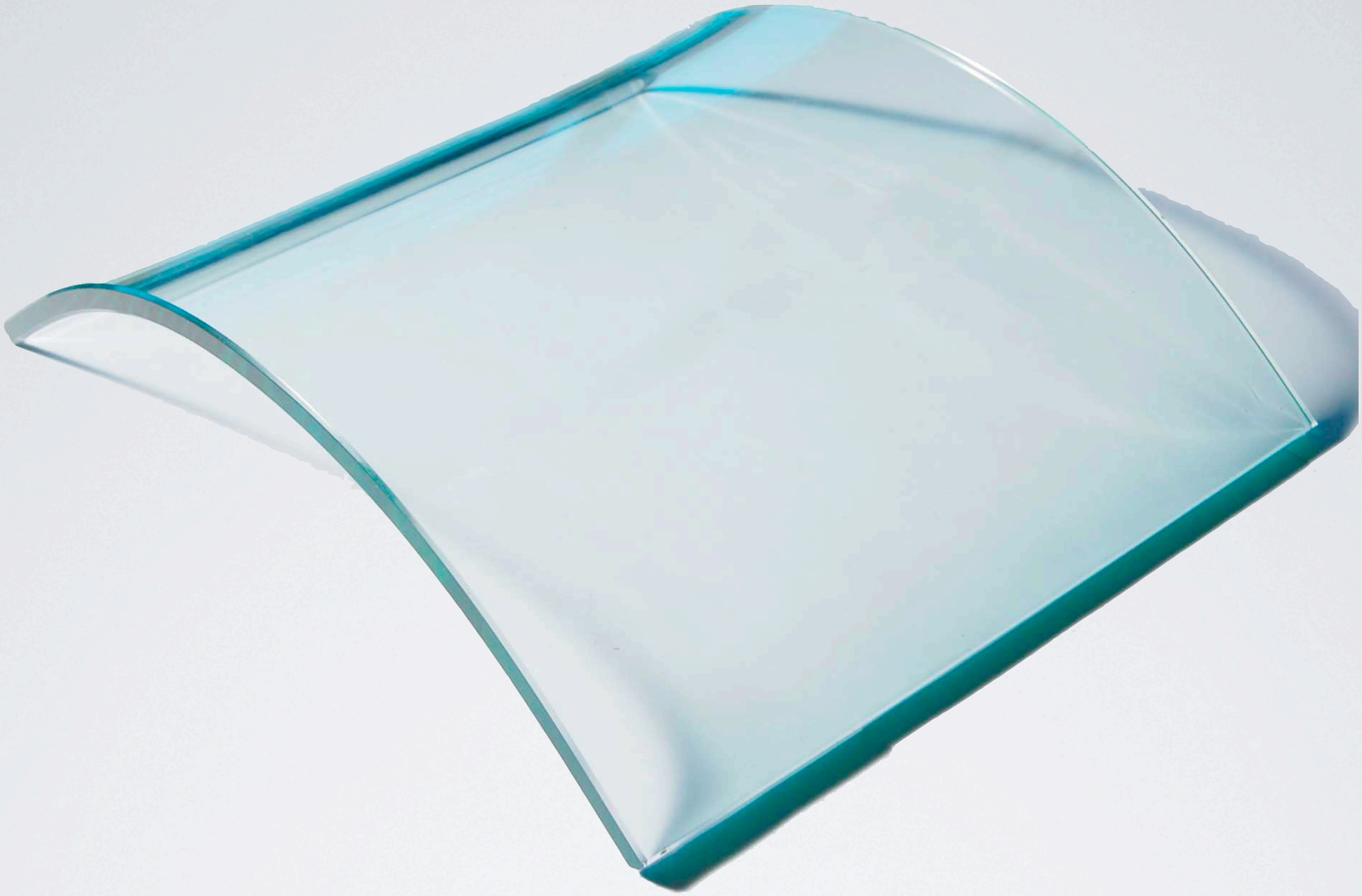
HCI COMP341

REVIEW

- Bootstrap Introduction
- Why use Bootstrap
- Bootstrap Components
- Example codes
- Bootstrap Enhancement
- Examples and resources

OVERVIEW

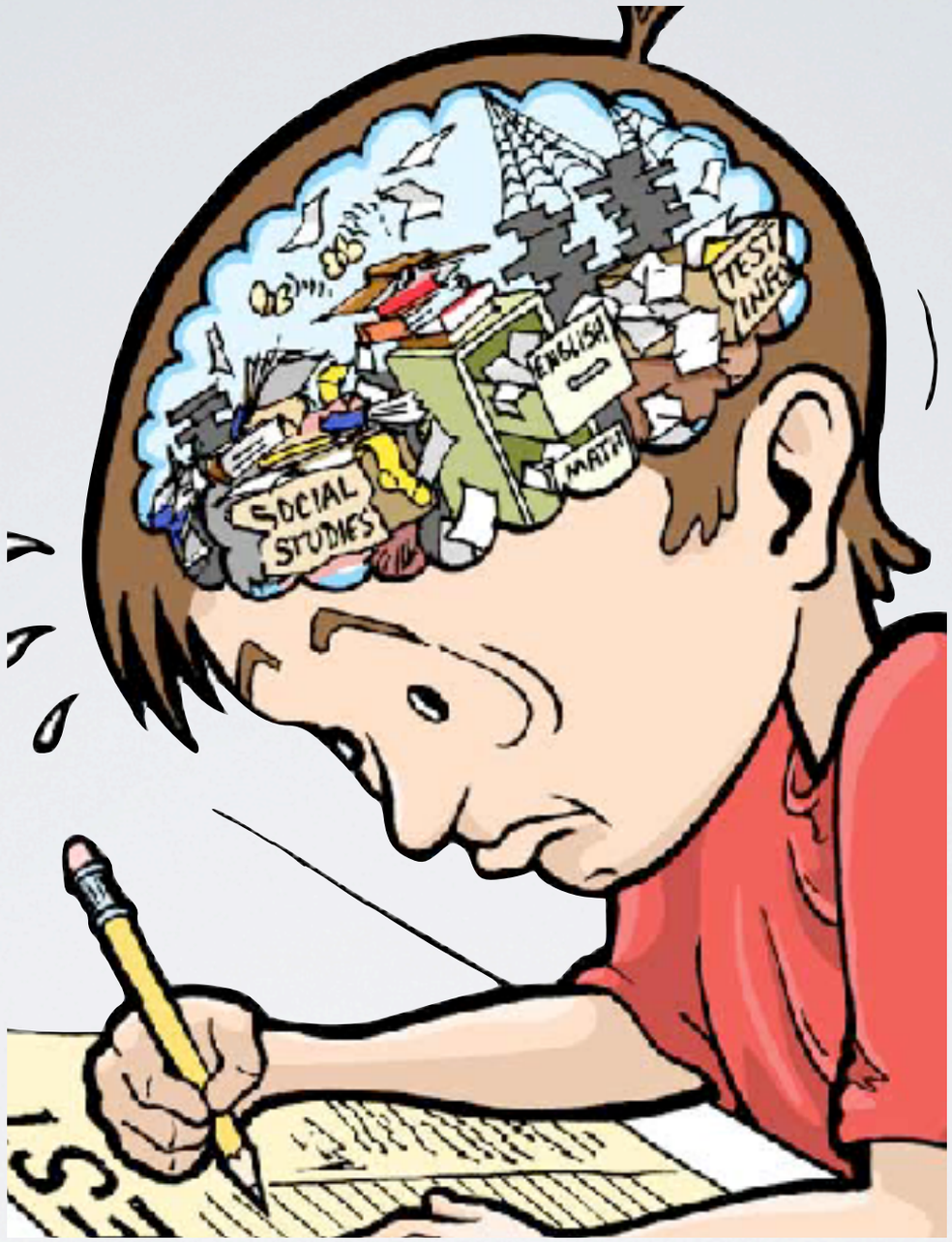
- Power law of practice
- Hick's law
- Fitt's law
- Steering Law
- Weber's Law
- Alternative interaction paradigm



GLASS

what can you see from a decade ago?

LAWS



FORGETTING

A delicate process by which memory is optimized by, well ... removing them

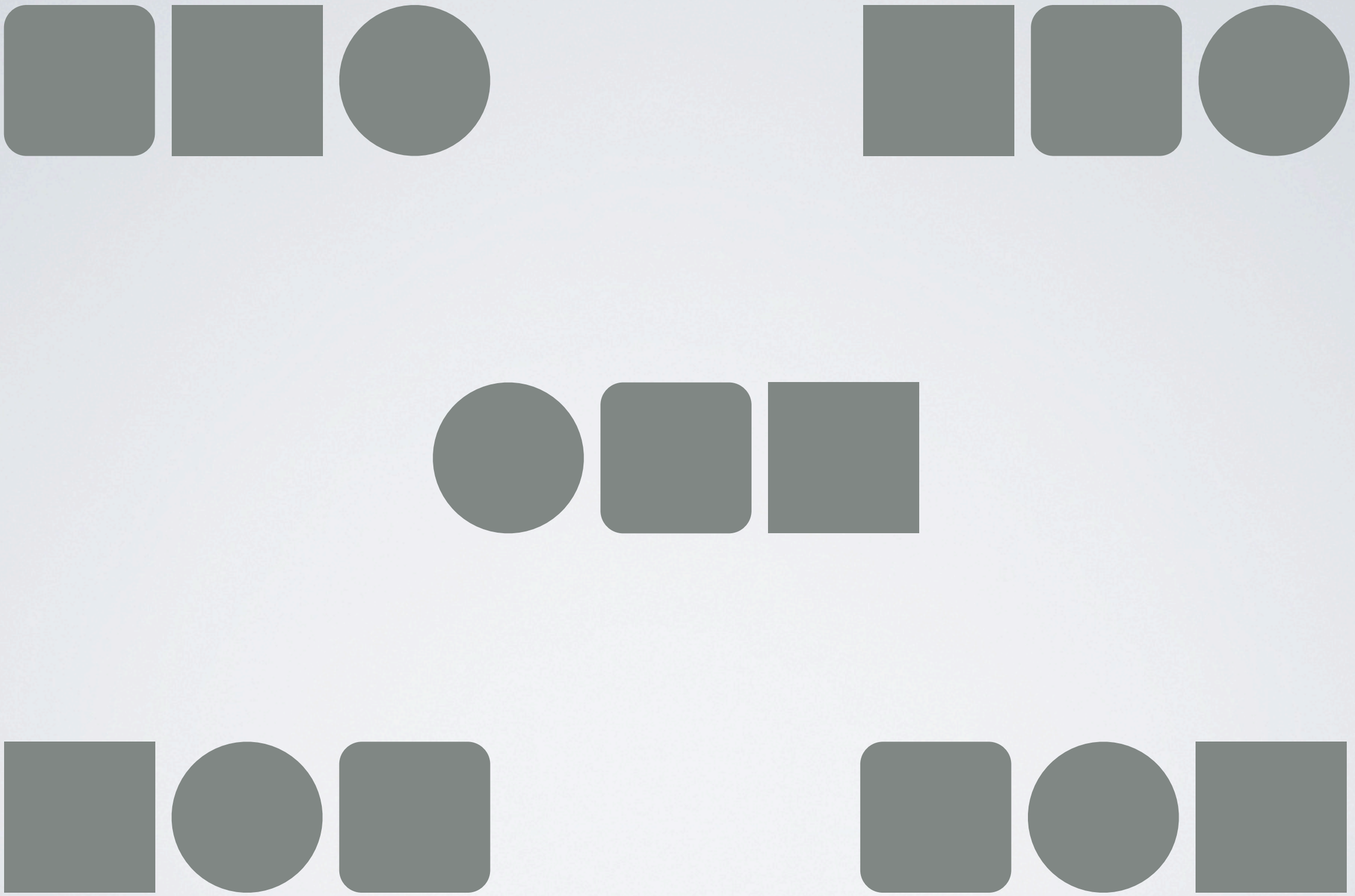
A TEST

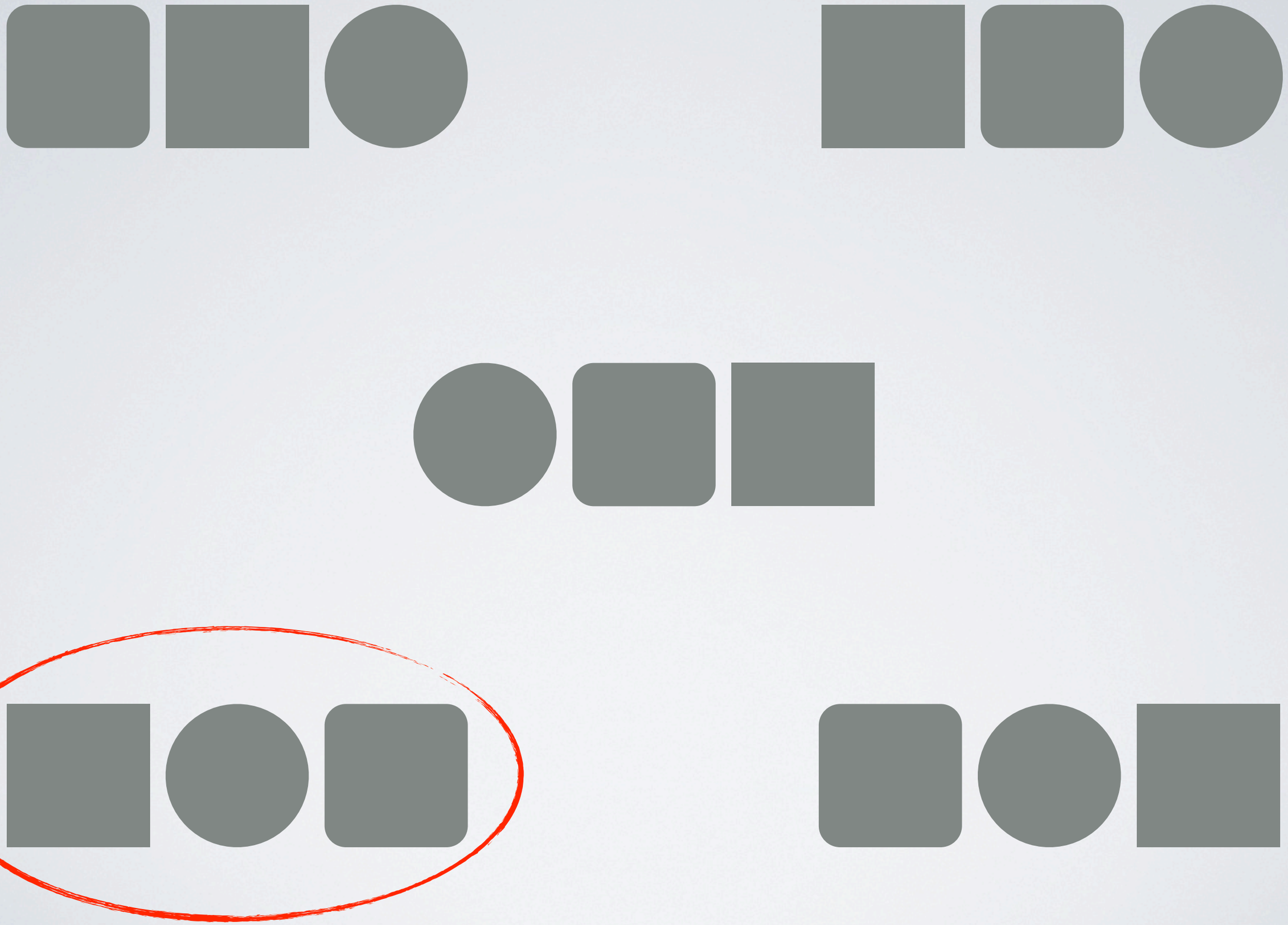
1, 9, 13, 4, 5, 7, 3, 8, 12, 14, 6, 12,
2, 10, 15, 16, 11, 20, 17, 19, 18

NOW WRITE THEM IN ORDER

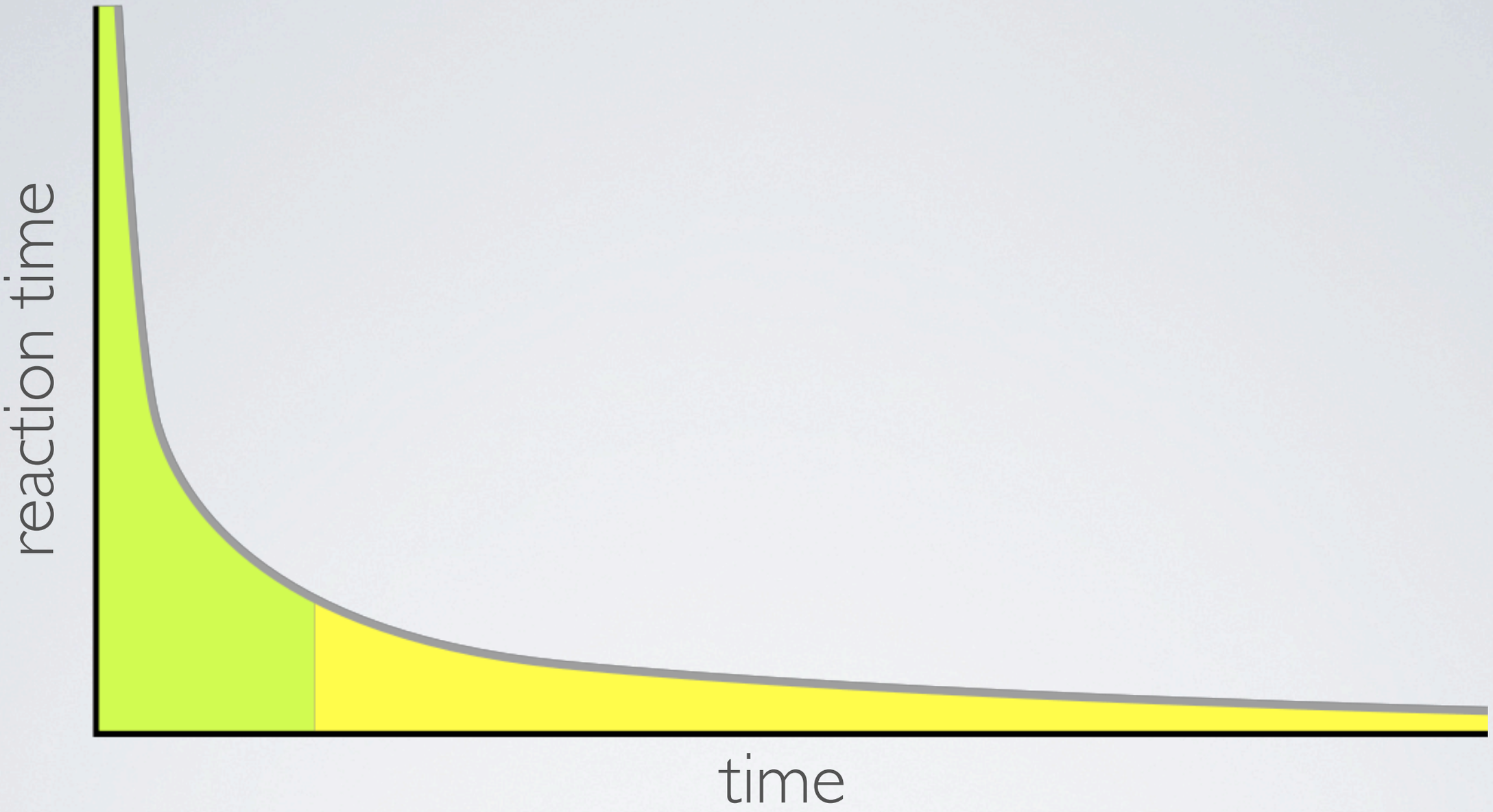
1, 9, 13, 4, 5, 7, 3, 8, 12, 14, 6, 12,
2, 10, 15, 16, 11, 20, 17, 19, 18

ANOTHER TEST





POWER LAW

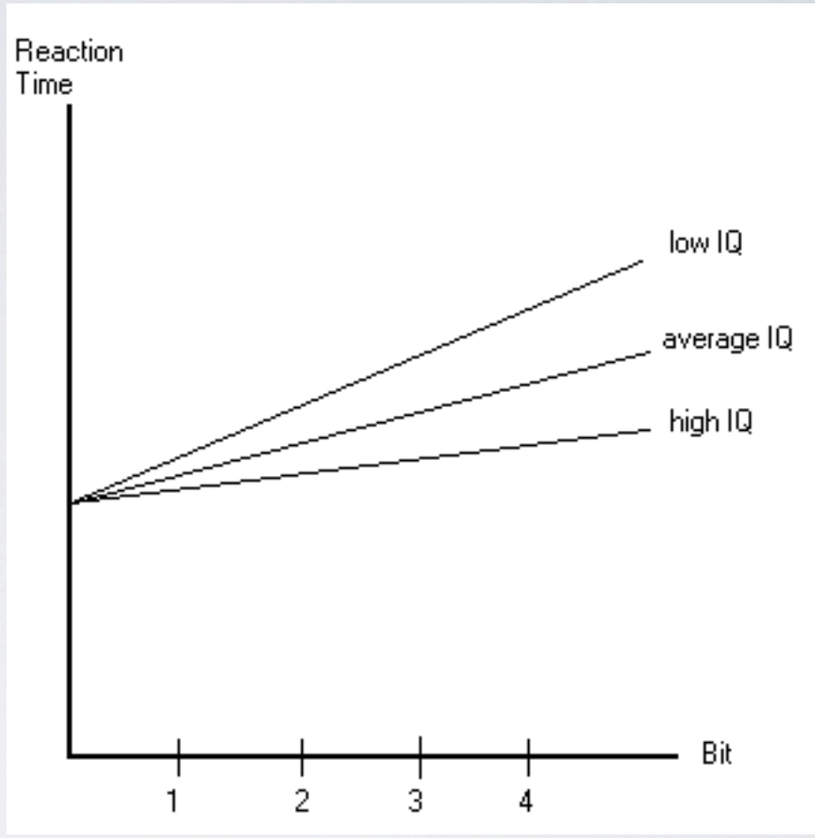


Power Law of Practice states that the logarithm of the reaction time for a particular task decreases linearly with the logarithm of the number of practice trials taken.

If you know absolutely nothing about a topic, you can learn 50% of the information quickly, but when you have 50% less to learn, it takes more time to learn that final 50%

HICK'S LAW

Given **n** equally probable choices the average reaction time **T** required to choose among them is approximately



$$T = b \cdot \log_2(n+1)$$

Hick's law describes the time it takes for a person to make a decision as a result of the possible choices he or she has

BENEFIT

- The time required to make a choice from a menu of n items rises with the log to the base two of n
- one large menu is more time-efficient than several small submenus supporting the same choices (even ignoring extra time to navigate submenus)

FITT'S LAW

- **T** is the average time taken to complete the movement.
- **a** represents the start/stop time of the device
- **b** stands for the inherent speed of the device
- **D** is the distance from the starting point to the center of the target.
- **W** is the width of the target measured along the axis of motion.

$$T = a + b \log_2 \left(1 + \frac{D}{W} \right)$$

Fitt's law predicts that the time required to rapidly move to a target area is a function of the distance to the target and the size of the target.

USAGES

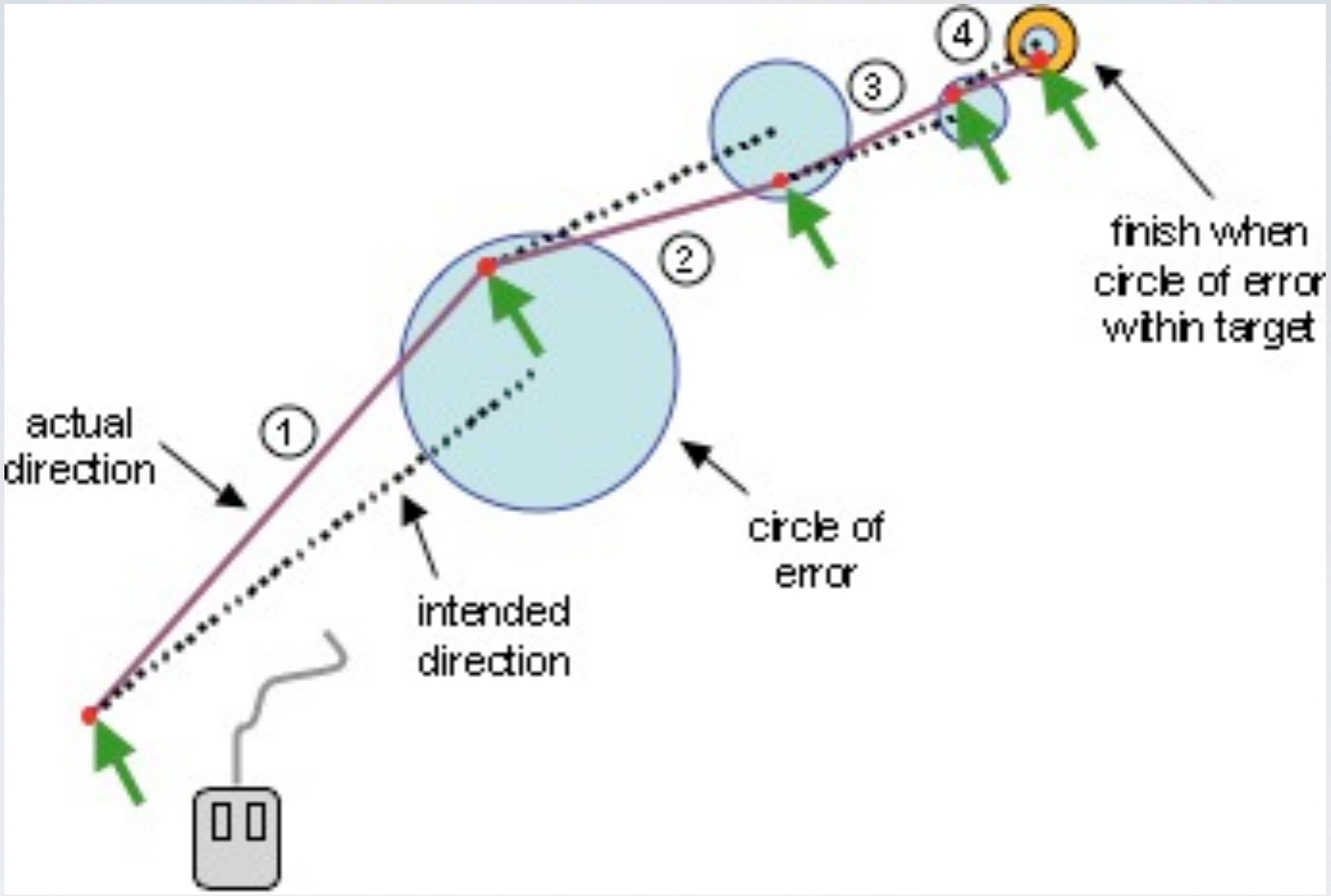
- Buttons and other GUI controls should be a reasonable size; it is relatively difficult to click on small ones.
- Edges and corners of the computer monitor (e.g., the location of the Start button and Taskbar in Microsoft Windows, and the menus and Dock of Mac OS X) are particularly easy to acquire with a mouse, touchpad or trackball because the pointer remains at the screen edge regardless of how much further the mouse is moved, thus can be considered as having infinite width. This doesn't apply to touchscreens, though.

USAGES

- Similarly, top-of-screen menus are sometimes easier to acquire than top-of-window menus

- Pop-up menus can usually be opened faster than pull-down menus, since the user avoids travel: the pop-up appears at the current cursor position.

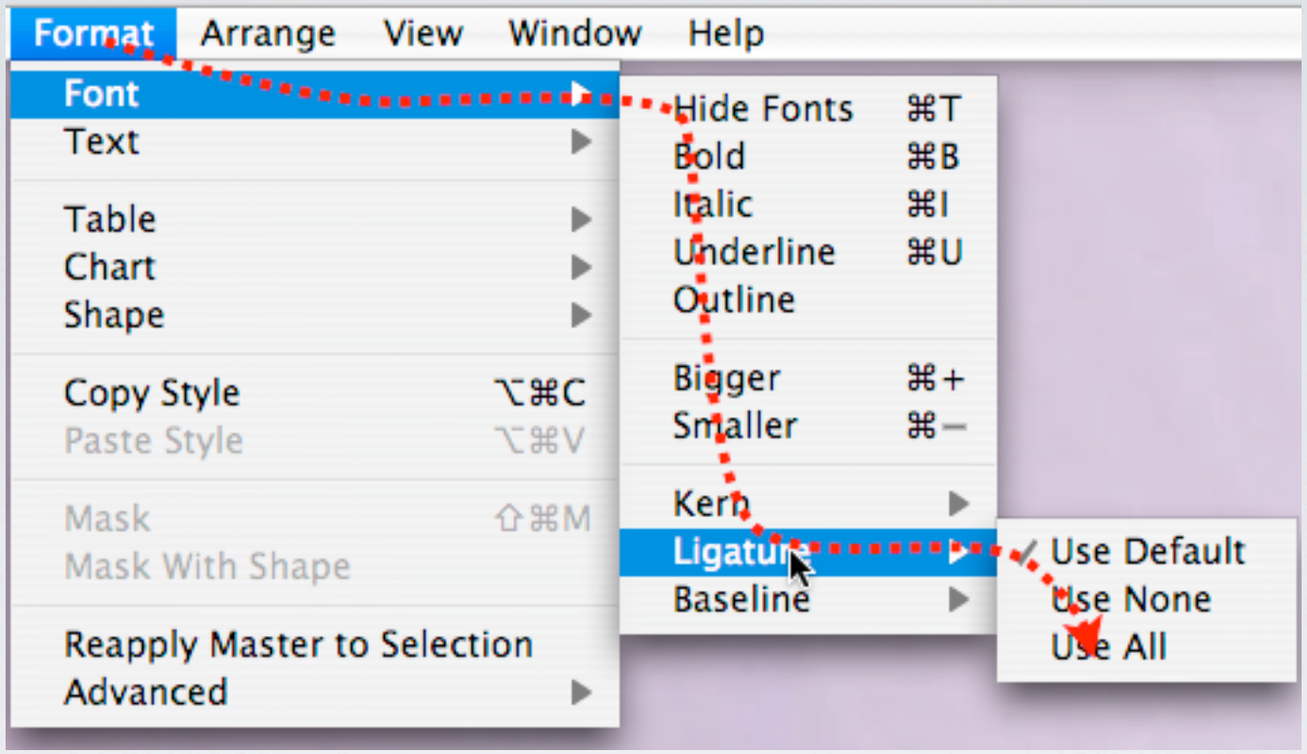
- Pie menu items typically are selected faster and have a lower error rate than linear menu items, for two reasons: because pie menu items are all the same, small distance from the centre of the menu; and because their wedge-shaped target areas are very large.

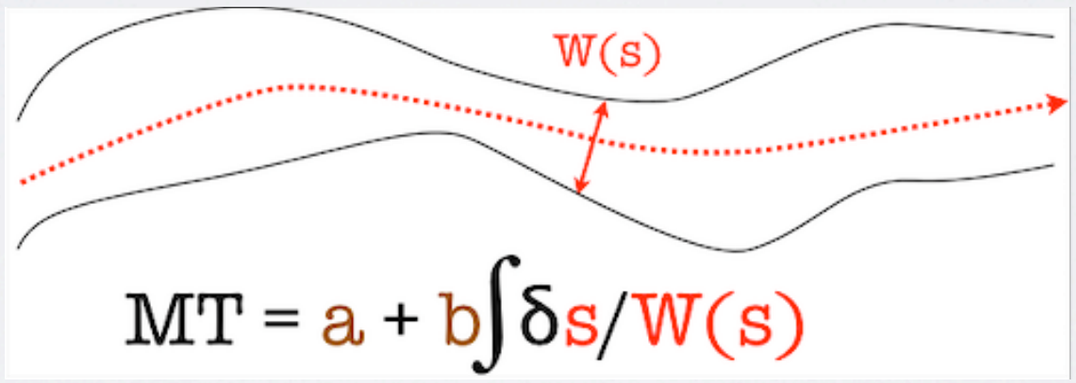


EXAMPLE

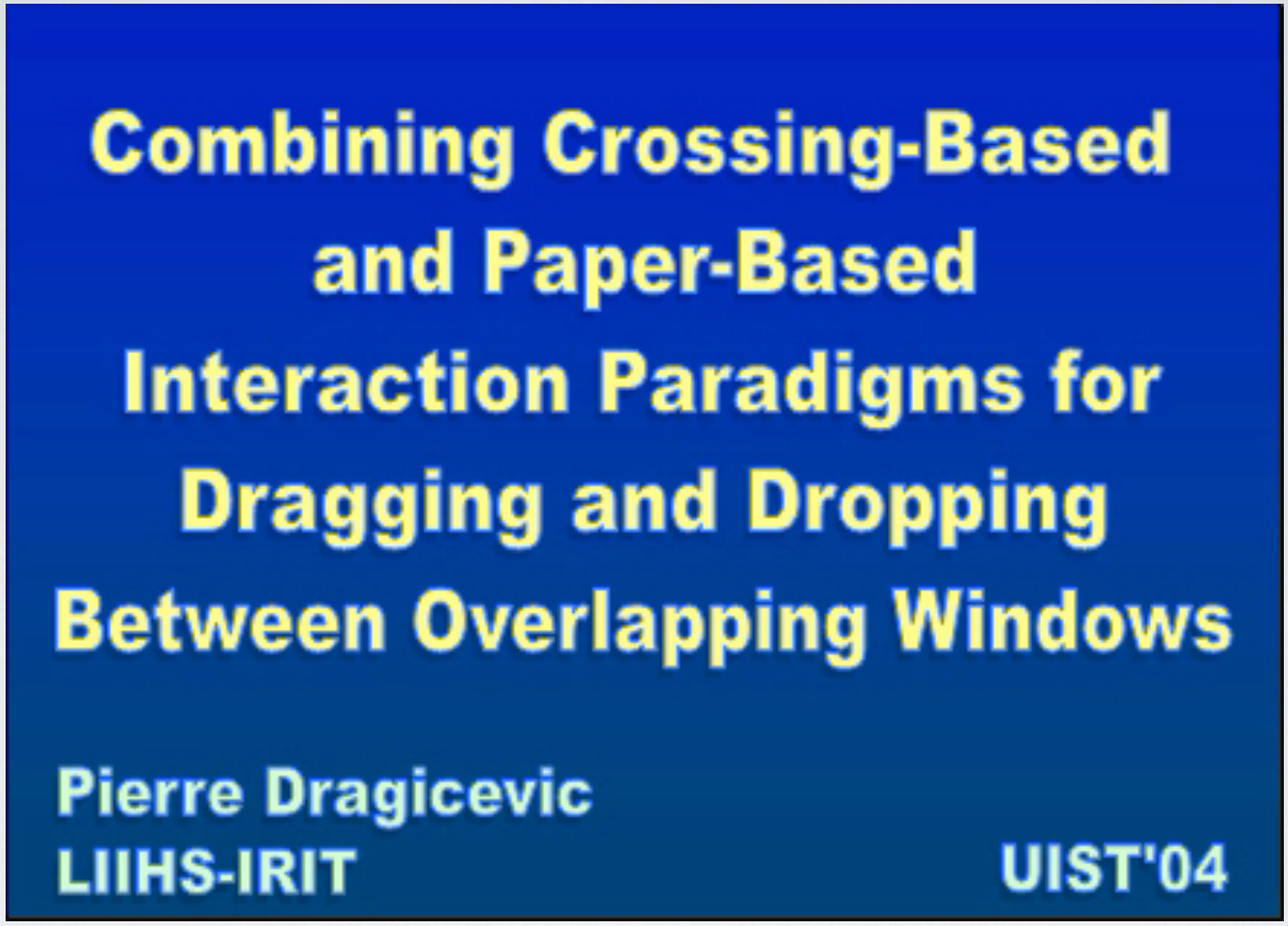
bigger circle are easier to target

STEERING LAW
OR
ACCOT'S LAW





Steering law is a predictive model of human movement that describes the time required to navigate, or steer, through a 2-dimensional tunnel/path.

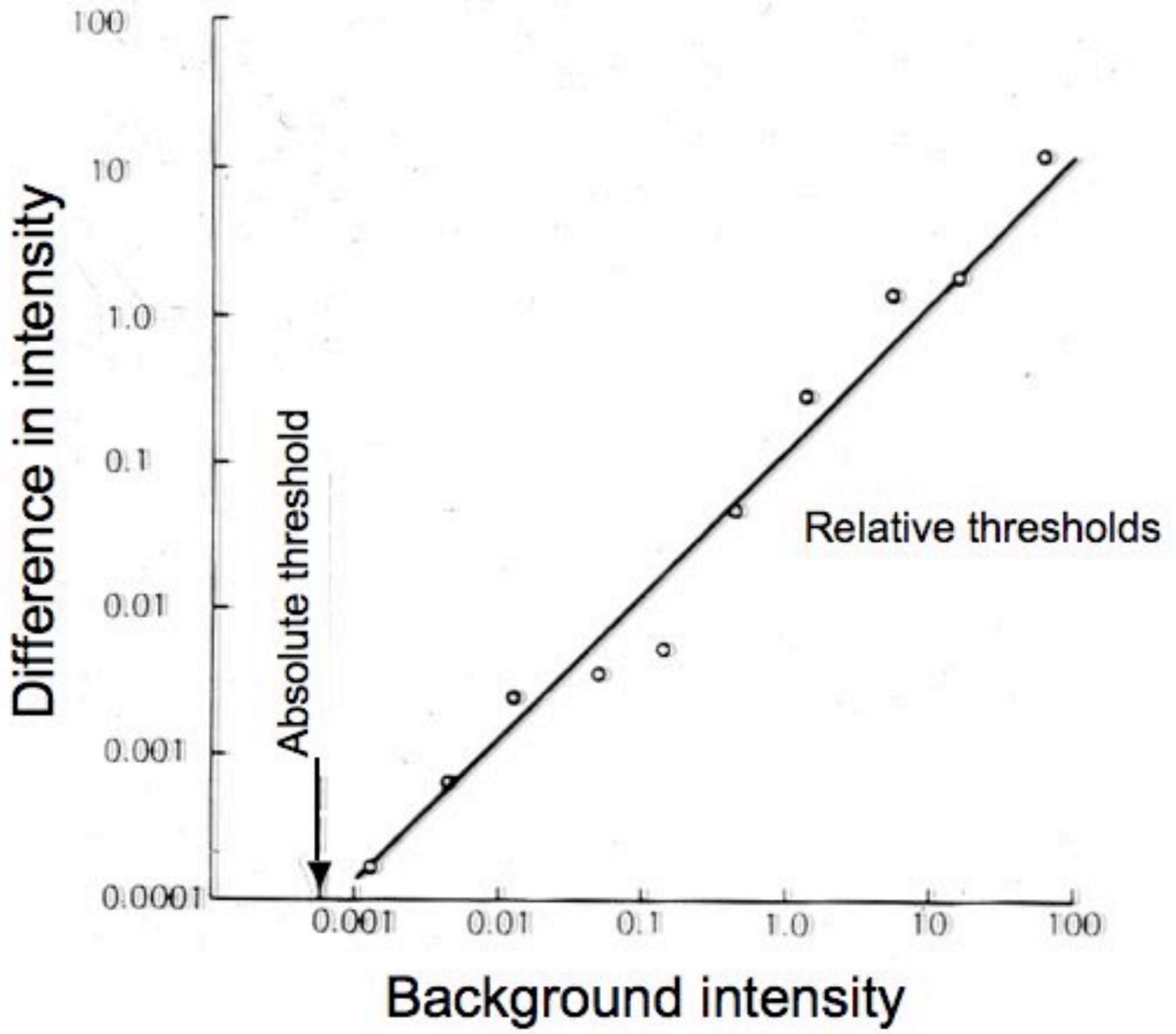


CROSSING

Crossing based interaction as derived from the steering law.

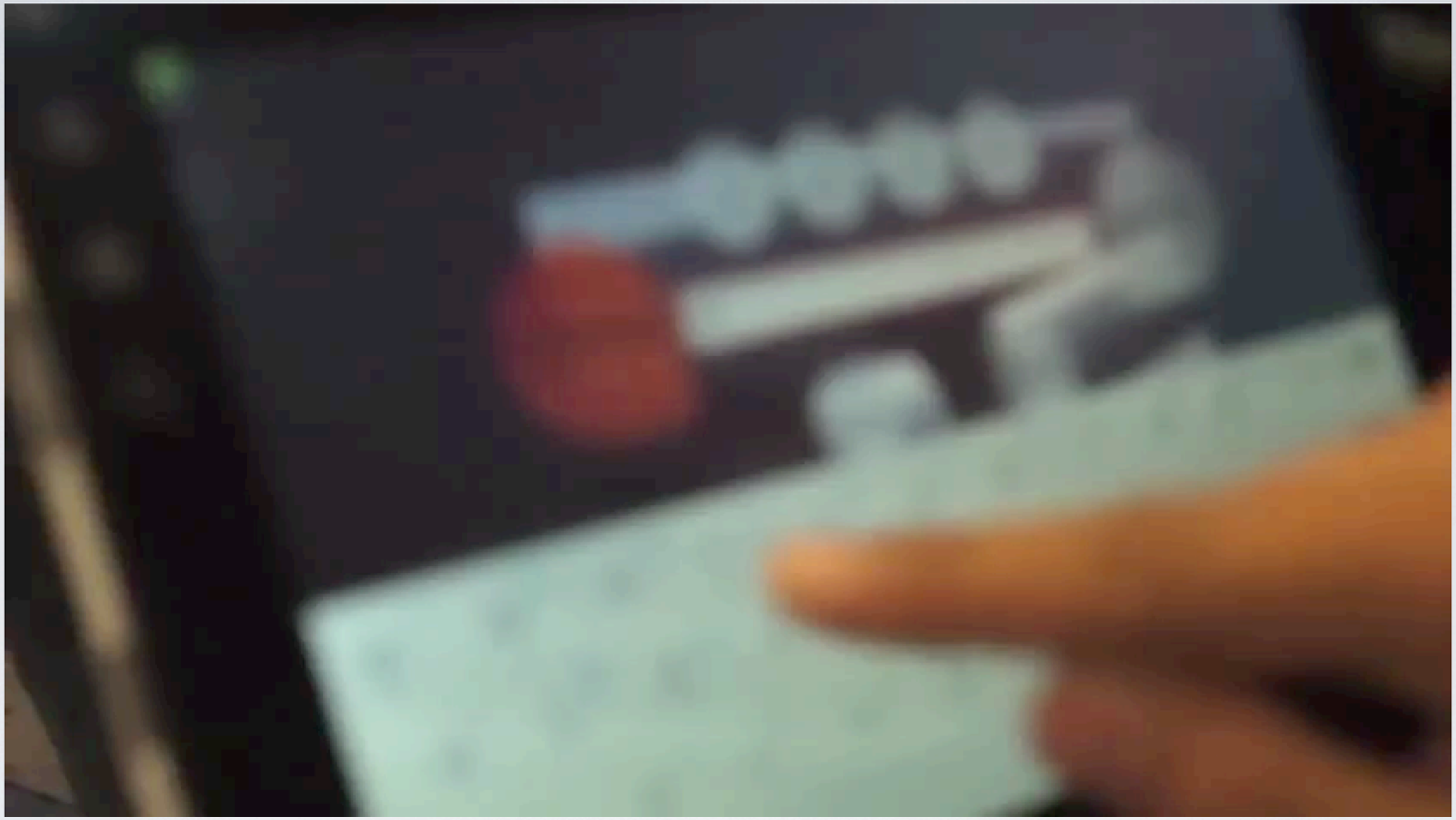
WEBER'S LAW

Weber's law



Weber's law states that the just-noticeable difference between two stimuli is proportional to the magnitude of the stimuli

HUMANIZED ENSO



NOTION INK

DONTCLICK DEMO

PROJECT LOOKING GLASS

sun microsystem.

MANY THANKS