Learning from Experience and Performing Learned Actions are Easy; Novel Actions, Problem Solving, and Calculation are Hard

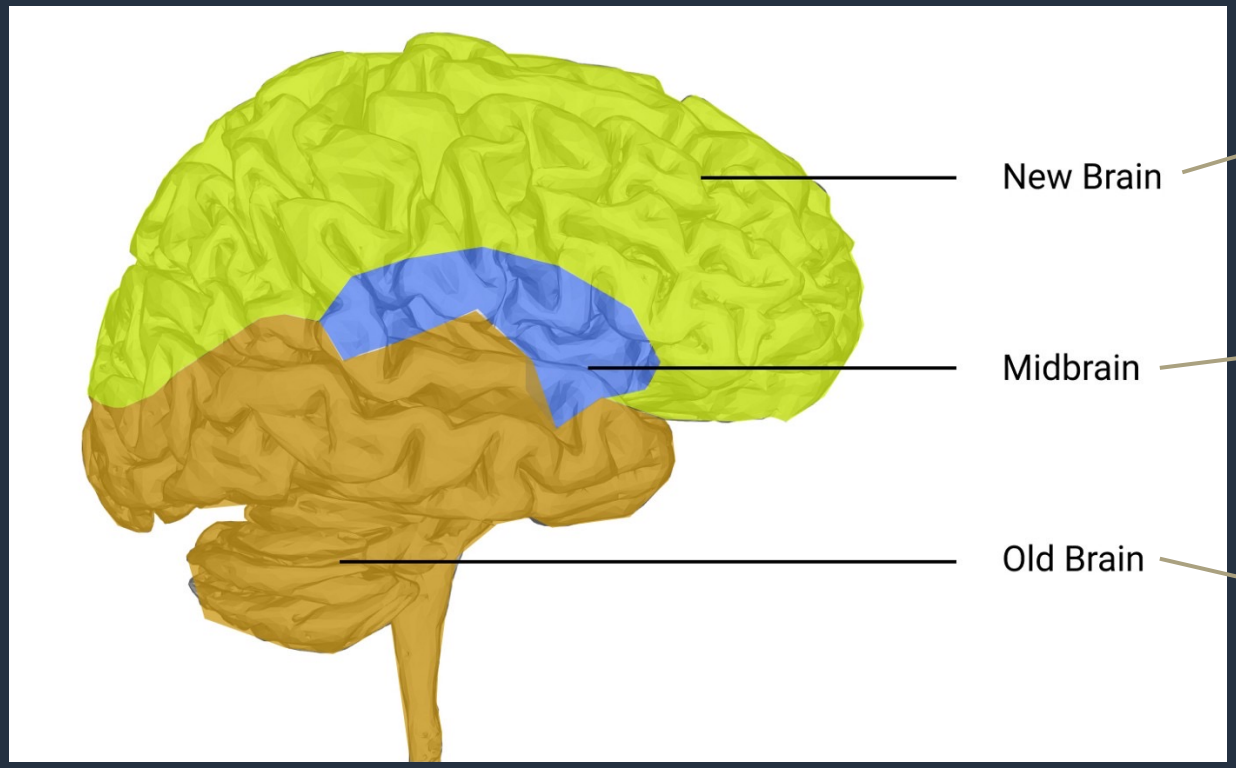
Designing with the mind in mind, Jeff Johnson, Chapter 10

Turbat Enkhtur

Summary

- We have Three Brains
- We have Two Minds
- Learning from Experience is Easy
- Performing Learned Actions is Easy
- Performing Novel Actions is Hard
- Implication for UI Design

We have Three Brains

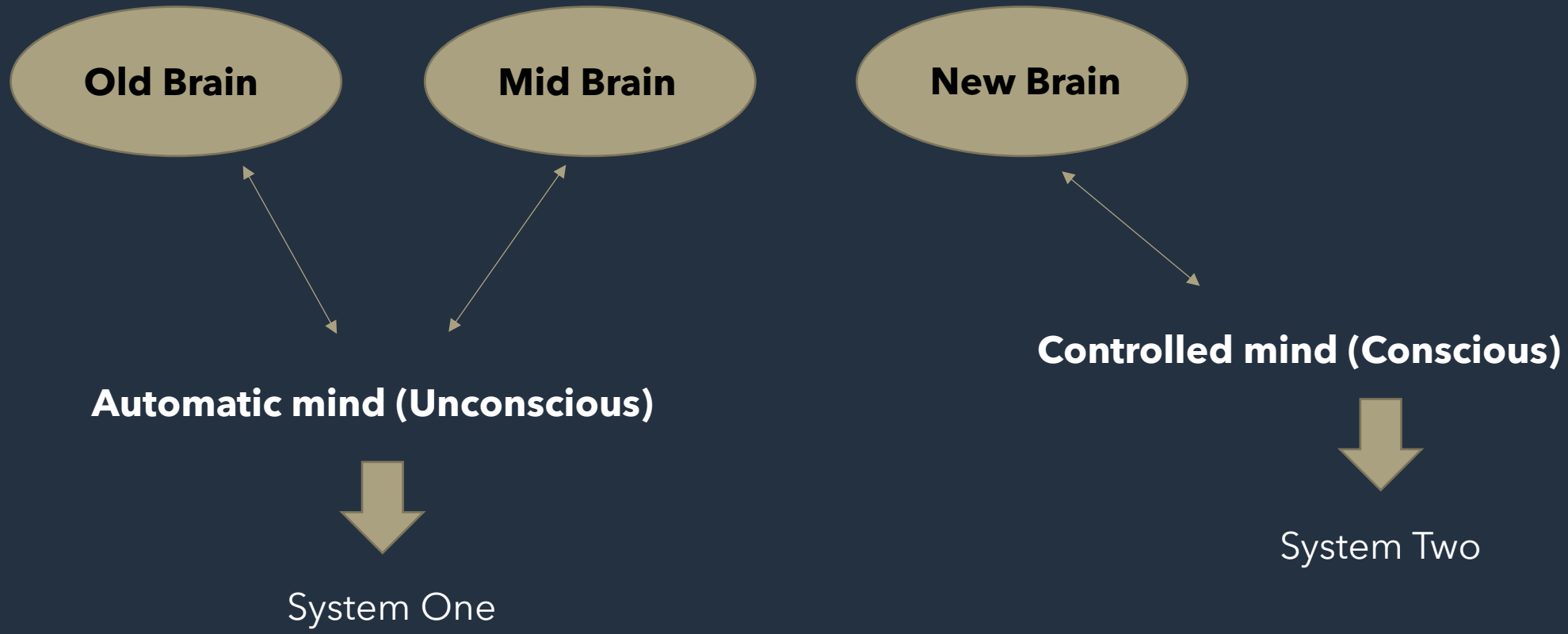


It controls intentional, purposeful, conscious activity, including planning

controls emotions; it reacts to things with joy, sadness, fear, aggressiveness, apprehensiveness, anger

regulates the body's automatic functions such as digestion, breathing, and reflexive movement

We have Two Minds



Let's test your brain!

A baseball and a bat together cost $110. The bat costs $100 more than the ball. How much does the ball cost?

Cost of the ball is $5

What is system one and two?

System 1

Quick: It is like guesses, and shortcuts, which makes everything it does an approximation.

System 2

Slow: it accepts the quick estimates and judgments of system one even though they are often inaccurate.

So why do we have a system two?

If we don't have a system two our brain is completely automatic.

Learning from Experience is Easy

- **Don’t eat bad-smelling food.**
- **Ice cream tastes good, but it melts quickly in hot weather.**
- **Don’t open attachments from unfamiliar senders**

System one can do it alone, without system two’s involvement

Limitations

- Situations that are complex and constantly changing
- Making a mistake does not necessarily mean you've learned your lesson
- People prioritize their own experiences over actual facts
- Make generalizations based on incomplete data

Performing learned actions is easy

Riding a snowboard after many years of practice.

Backing out of your driveway and driving to work.

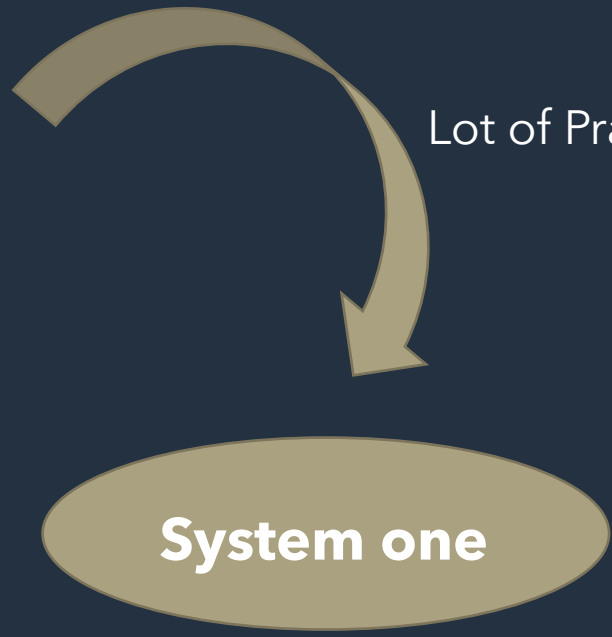
Brushing your teeth.

Playing a piano piece that you have played hundreds of times

System one!

Performing Novel Actions is Hard

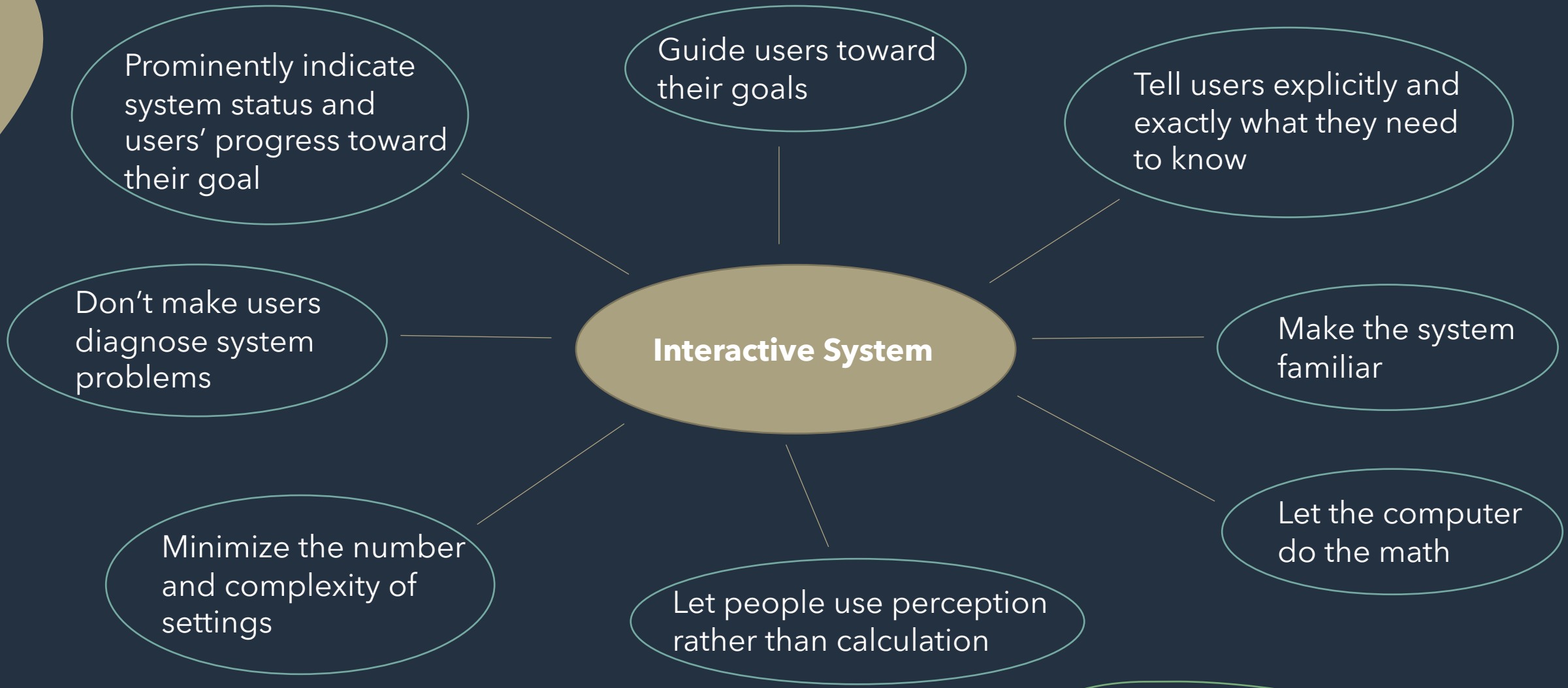
- **Switching from an iPhone to Android**
- **Learn a new piano piece**
- **Learn a new programming language**



Implications for User-Interface Design

Interactive systems should respect that and not distract users by imposing technical problems and goals that users don’t want.

Design Rules



Questions?