

CS 696 Mobile Phone Application Development
Fall Semester, 2010
Doc 17 Design 1
Oct 28, 2010

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References

The Design of Everyday Things, Norman, Basic Books, 2002

Declarative Knowledge

fact & rules

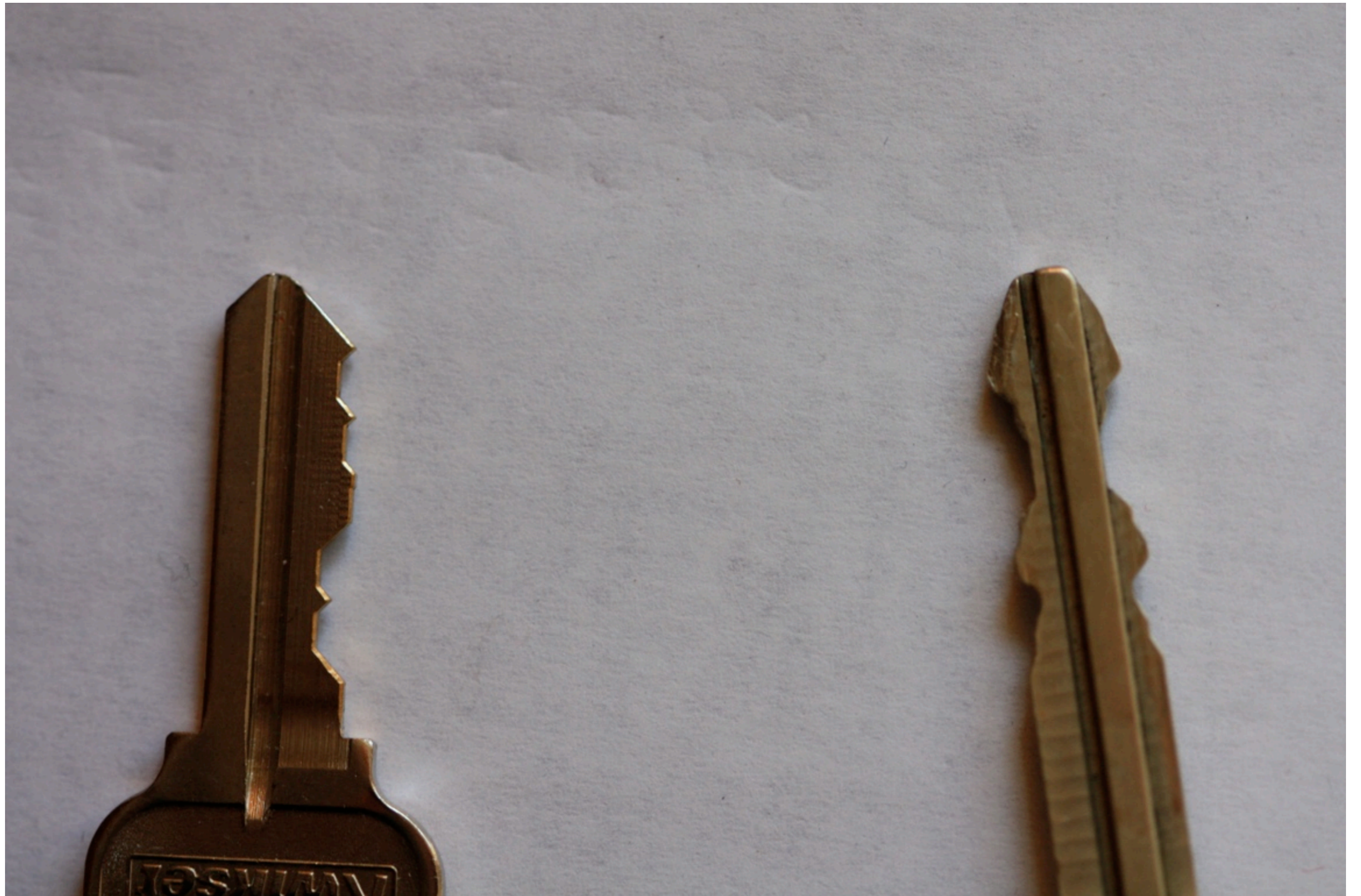
Procedural Knowledge

how to

Car Ignition switch



Keys



Keyless Ignition

"Push-button keyless start couldn't be simpler"



Improved Version



Psychopathology of Things

Affordance

Conceptual Model

Make Things Visible

Mapping

Feedback

Affordance



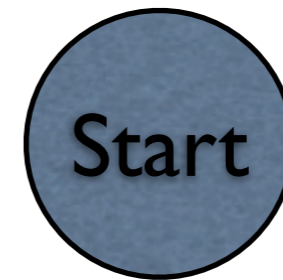
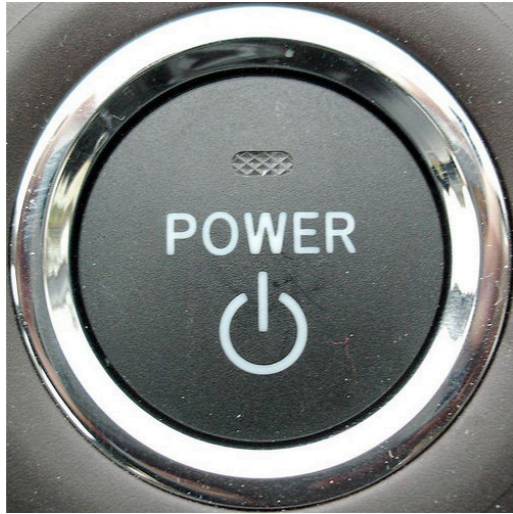
Affordance



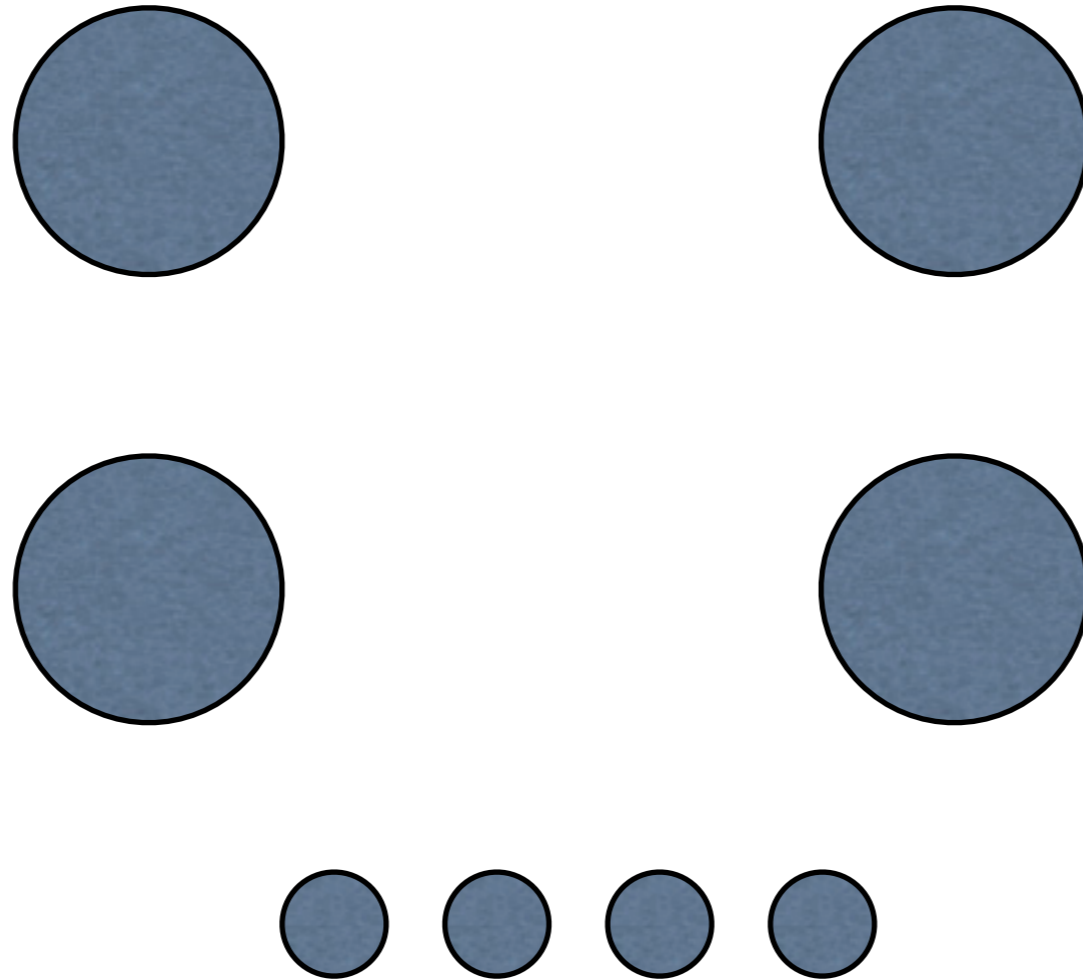
Conceptual Model



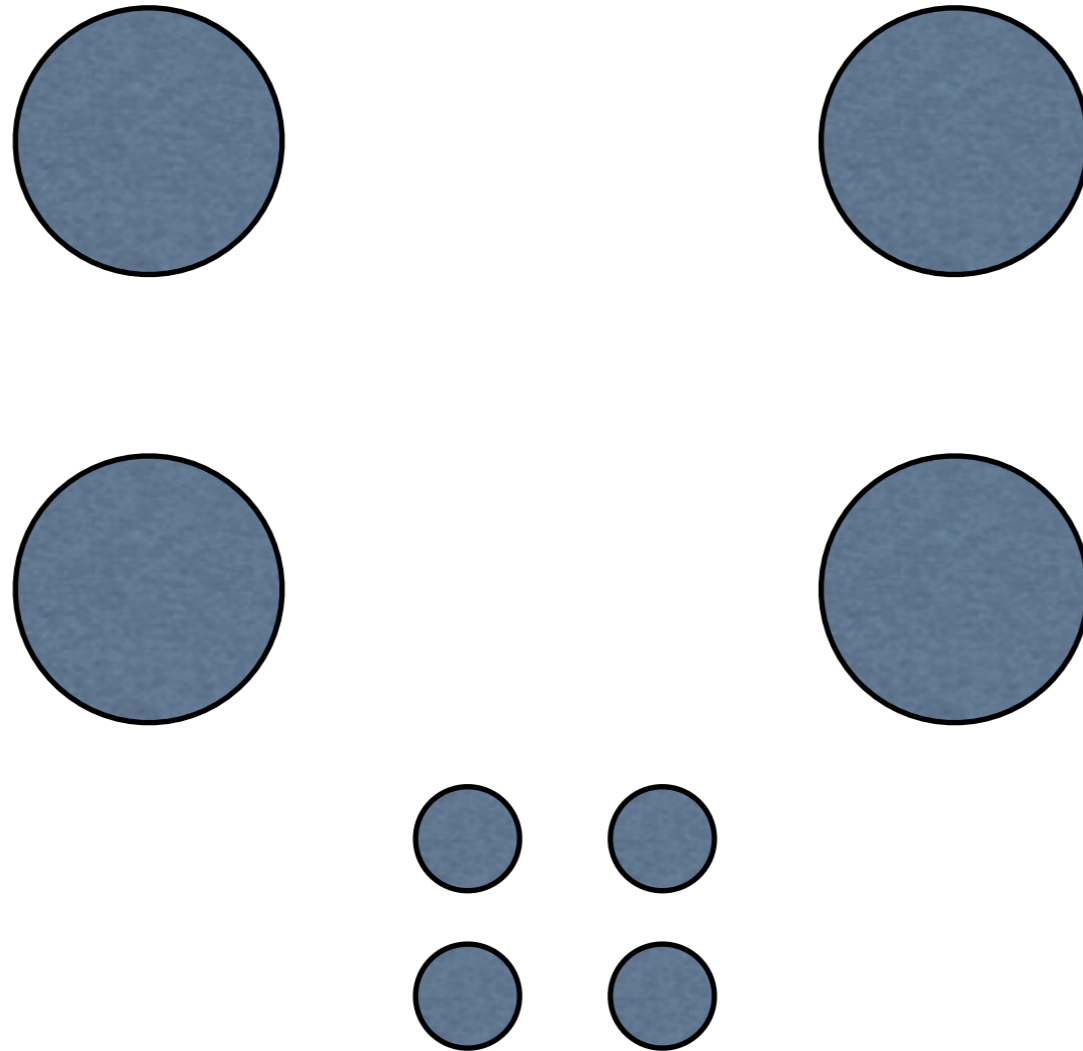
Make things Visible



Mapping



Mapping



Feedback

0.1 seconds

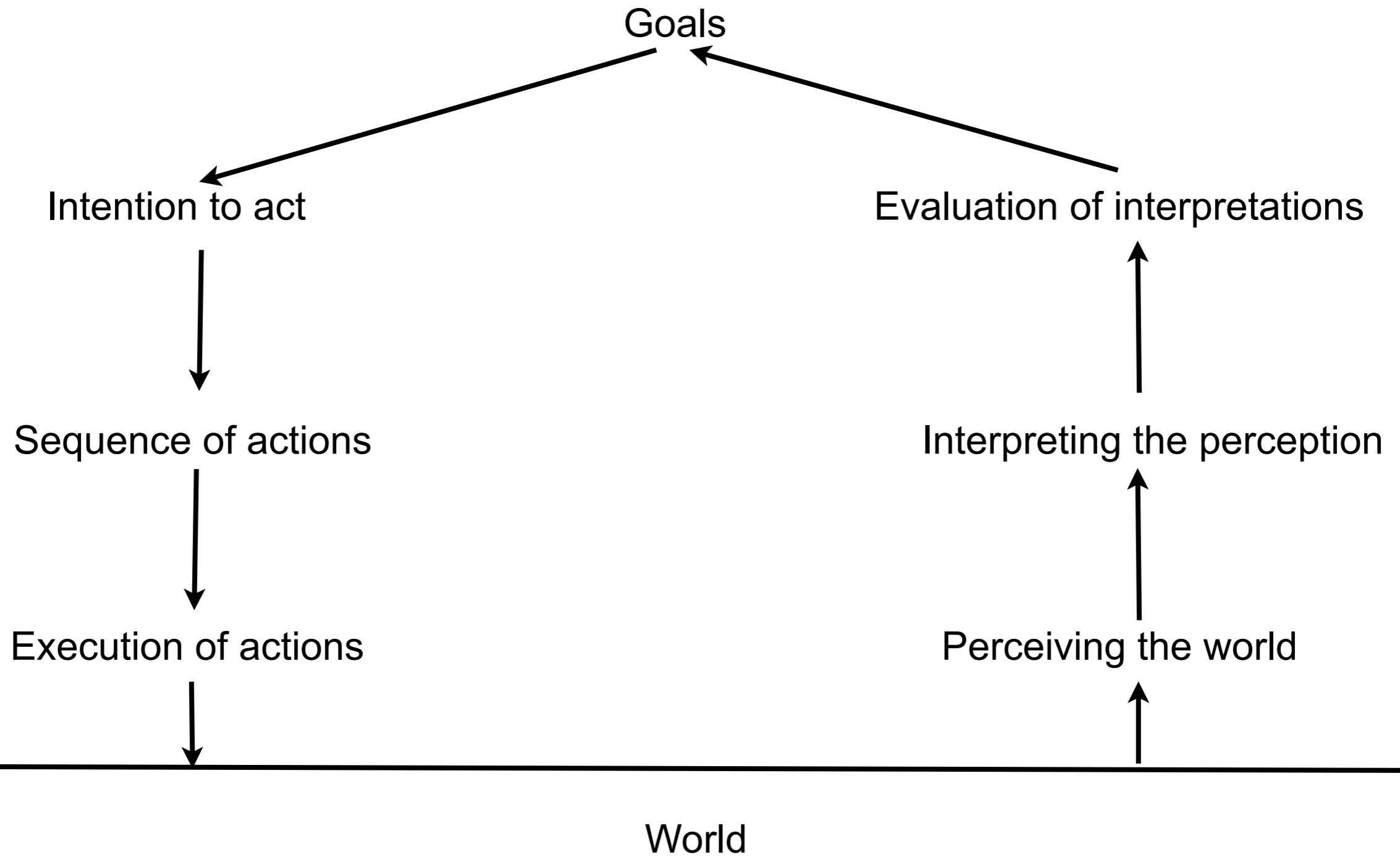
0.1 to 1 seconds

More than one second

Psychology of Everyday Things

oops I make a mistake

Seven Stages of Action



How Easily Can One

Determine the Function of the device

Tell what actions are possible

Tell if System in in the desired state

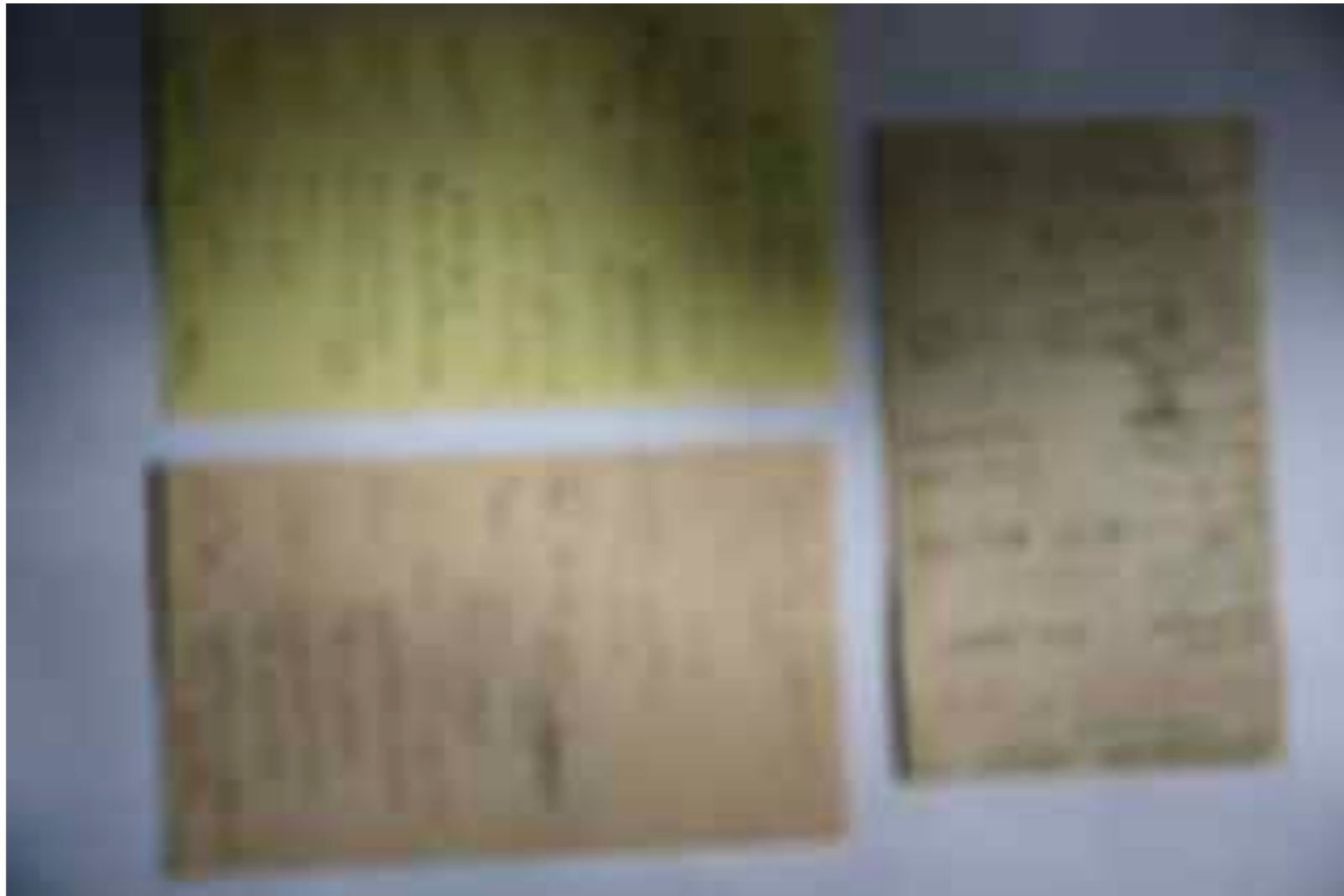
Determine mapping from
intention to physical movement

Determine the mapping from the system
state to interpretation

Perform the action

Tell what state the system is in

Memory for arbitrary things



Memory for meaningful relationships

My Freshman humanities course

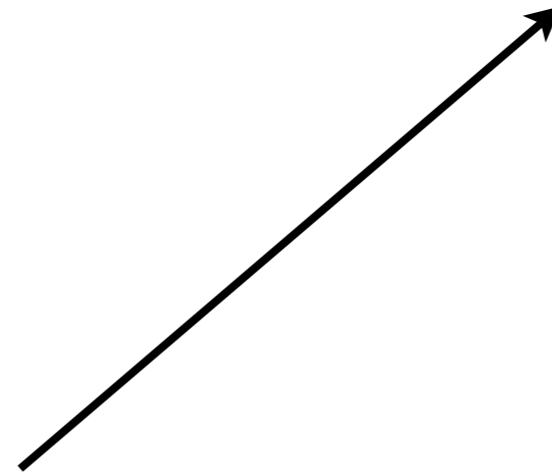
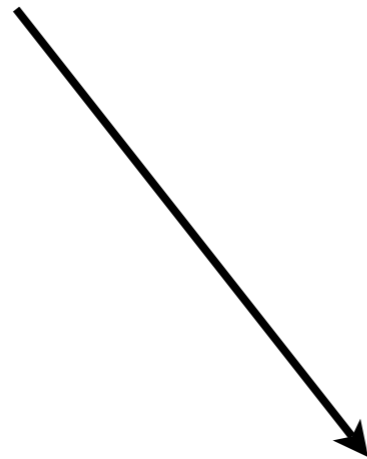
Memory through explanation

Xerox repair people

Three Conceptual Models

Designer's Model

User's Model



How the system appears to operate

Information in the World



3.1 Which Is the U. S. One Cent Coin—The Penny? Fewer than half of the American college students who were given this set of drawings and asked to select

Power of Constraints

How does someone remember a 50,000 line story

Types of Constraints

Physical constraints

Semantic constraints

Cultural constraints

Logical constraints

Forcing Functions

Make sure it is done right

Reminding



Over Reminding

Constraints and Forcing Functions



The lost Soviet Space probe

A technician uploaded the wrong instruction

Evolutionary Design



Why designers go Astray

Aesthetics

Why designers go Astray

Designers are not typical users

Why designers go Astray

Clients may not be the users

Why designers go Astray

Creeping Featurism

Microsoft Word

User Centered Design

7 Principles

Use knowledge in the world & knowledge in the head

Simplify structure of tasks

Make things visible

Get mappings right

Use constraints

Design for error

When all else fails, standardize

Paper Prototype