

Review

Question 1

The following interface is used to adjust the setting of a car seat. Explain why this interface is likely to be readily understood by users.

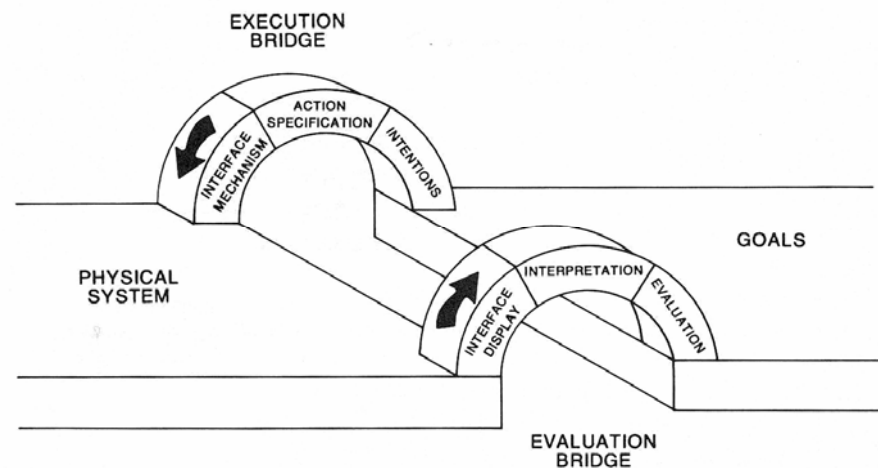


- Good mapping
 - Easy to recognize/remember
 - Action on the device similar to action on the seat

Question 2

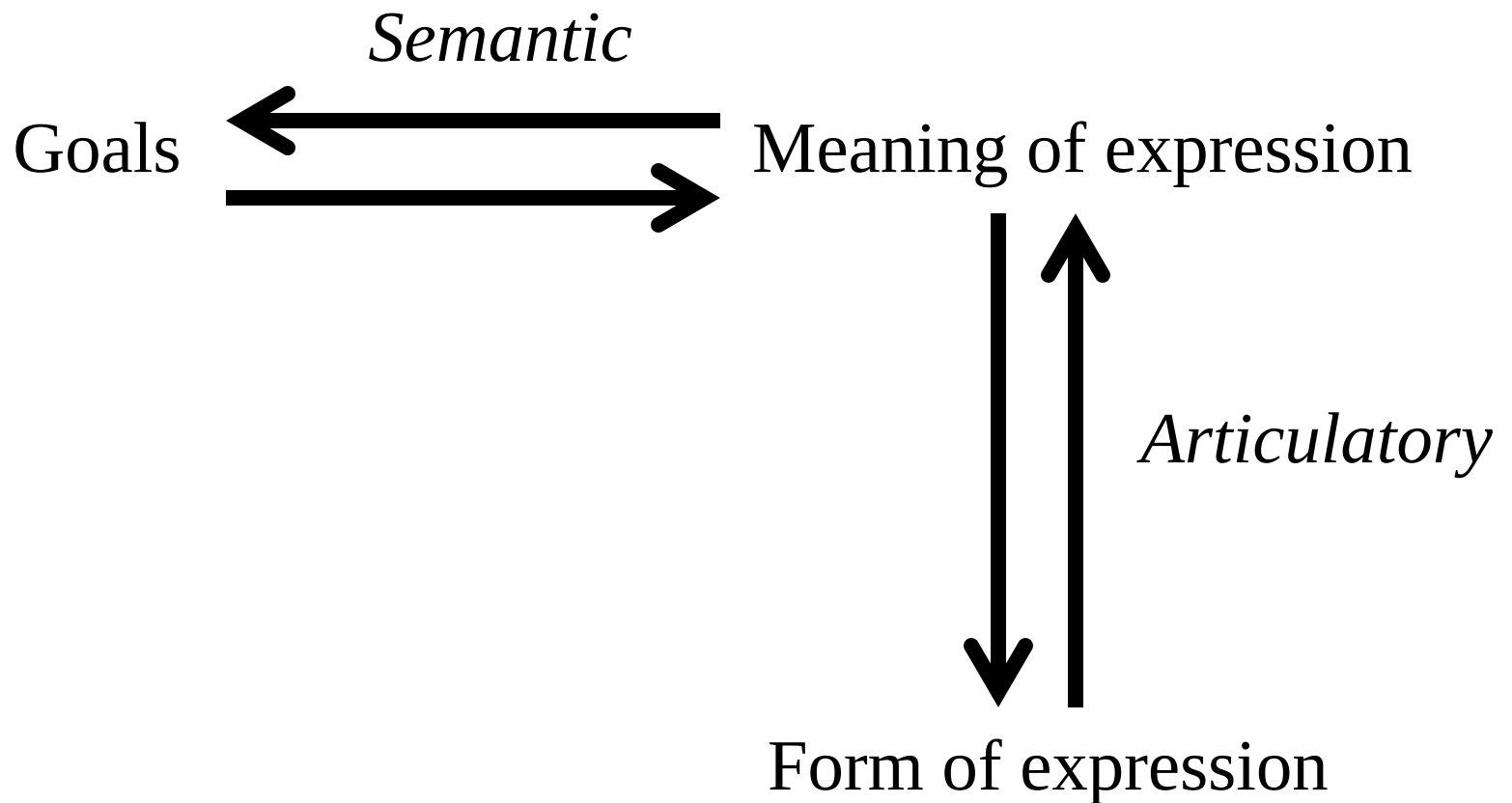
What are the gulfs of execution and of evaluation? How these concepts can be used to describe user activity? For each gulf, what are the semantic and the articulatory distance? Explain all your answers.

- Gulf of execution
 - Complexity of the translation from goals to actions
- Gulf of evaluation
 - Complexity of the translation from percepts to goals



Question 2 (cont'd)

- Used to understand the observe - think - execute cycle



Direct manipulation interfaces

Describe the key characteristics of a direct manipulation interface. Why is inter-referential input/output so important to direct manipulation interfaces? Provide one example of a task for which direct manipulation interface will be very useful, and one example of a task for which a direct manipulation interface will be difficult (or tedious) to use. Explain all your answers.

- **Key characteristics**
 - **Continuous** and **visual** representation of the world
 - **Physical action** instead of complex command syntax
 - **Rapid incremental reversible** operation

Direct manipulation interfaces (cont'd)

- Inter-referential input/output
 - Users should be able to use the result of command as input for the next command
- Pros
 - What You See Is What You Get
 - Copy a file from a folder to another by the drag-and-drop
 - Delete a file using a trash can icon.
 - Easy to remember
- Cons
 - Repetitive operations (script or macro),
 - Handling variables/wildcard,
 - Distinguishing individual elements from a class of elements,
 - What You See Is All You Get

Design cycle

What are the 7 phases of the design cycle we are studying in class? For each phase provide a quick description of that phase as well as the key output of that phase. Explain all your answers.

Design Cycle (cont'd)

- Acceptance
 - Getting start and planning (Motivation)
- Analysis
 - Gathering users' task specific knowledge (interview, storyboard)
- Definition
 - Identify users and goals (key personas and their goals)
- Ideation
 - Many ideas
- Idea selection
 - A few very good ideas
- Implementation
 - Make the real thing (final/intermediate product)
- Evaluation
 - Evaluation of the process

Leading question

What is a leading interview questions? Provide one example and explain why it can be considered leading. Provide a neutral formulation of the same question. Explain all your answers.

- A question which implies that a specific answer is expected
 - Will you agree that this line of car, assembled in this factory, is better?
 - Which sedan do you think best suit your current needs?

Motor program

What are motor programs? Provide at least two examples that confirm the existence of motor programs. Once practice using one limb, can motor program easily mapped to another limb? Explain all your answers.

- A pre-programmed set of muscular actions
 - Rapid movement (playing piano, typing on a keyboard)
 - The clock experiment
- Can be mapped from one muscle group to the other
 - I can write my name with my elbow

Paper prototype

What is a low fidelity paper interface prototype? How is it build? How is it run? In which phase of the design cycle can it be used? What kind of information can be gathered using a paper prototype interface? Explain all your answers.

- Approach
 - Using sketches, foam-core, transparency, post-it, index card, tapes and glue to make mock-ups of elements of the interface (button, menus, dialog boxes...)
- Running it
 - One user who interacts with the mock-up
 - One “computer” who updates the mock-up to reflect user action
 - One observer who takes notes

Paper prototype (cont'd)

- When?
 - Evaluation
- What?
 - Basic usability issues, screen layout, work flow...
 - Not very good for timing

Persona

What is a persona? What are the key aspects of a successful persona? How is it constructed? How can it serve the design process?

- Definition
 - Fictional, detailed archetypical characters that represents a distinct group of potential users
- Key aspects
 - A well defined set of behaviors, goals and motivations
- Construction
 - During the analysis process, by identifying clusters in users behaviors, goals and motivations
- Why?
 - Keep the design process focused

Fitts' law

What is Fitt's law? How is it formulated? Provide one example for which it can be used to predict user performance.

- Definition

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

- T is the time to go between two targets of width W set L apart.
- a and b are empirical constants depending on the experimental setting

- Example

- How fast can I reach a button on the screen