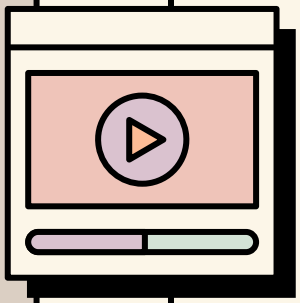
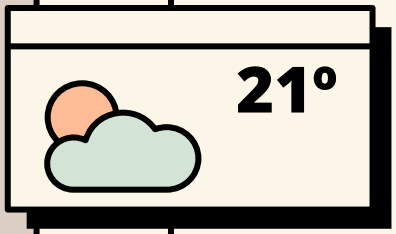
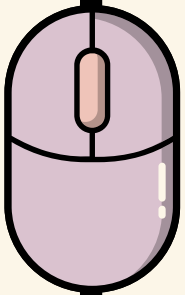
Direct Manipulation & Abstracting Craft



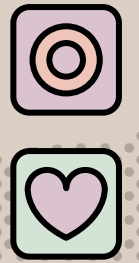




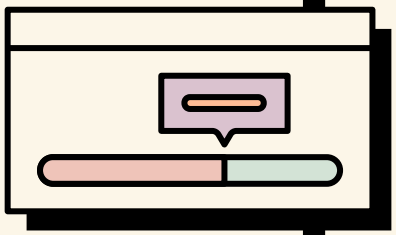
David & Angie

01

Abstracting Craft



What can tools do?



- Perform actions (Hammer)
- Represent actions as a symbol (Oar in a canoe)
- Different approaches (Japanese vs French knife)
- Work upon symbols (Analog Clock)

Meet us

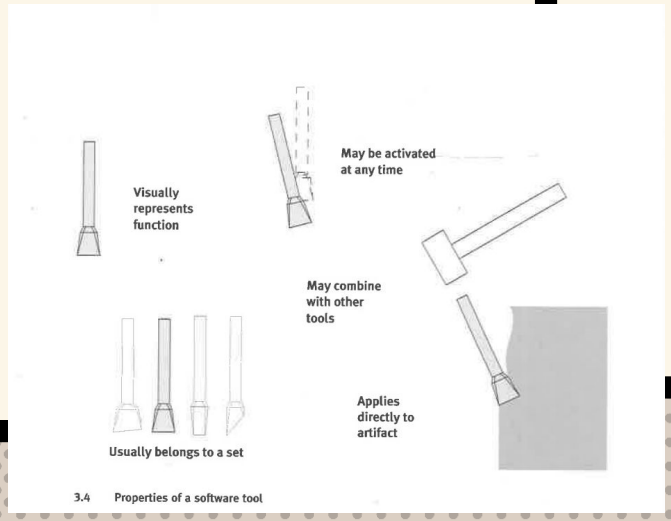
Tool definition

“A tool is a moving entity whose use is initiated and actively guided by a human being, for whom it acts as an extension”

Meet us

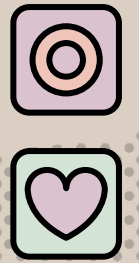
Software Tools

It is the singular advantage of the software tool to give physical form and physical action to a logical operation otherwise lacking any physical correspondence



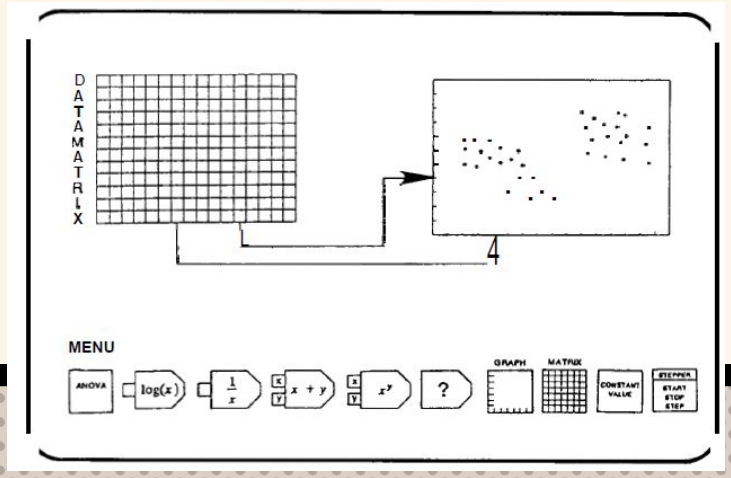
02

Direct Manipulation

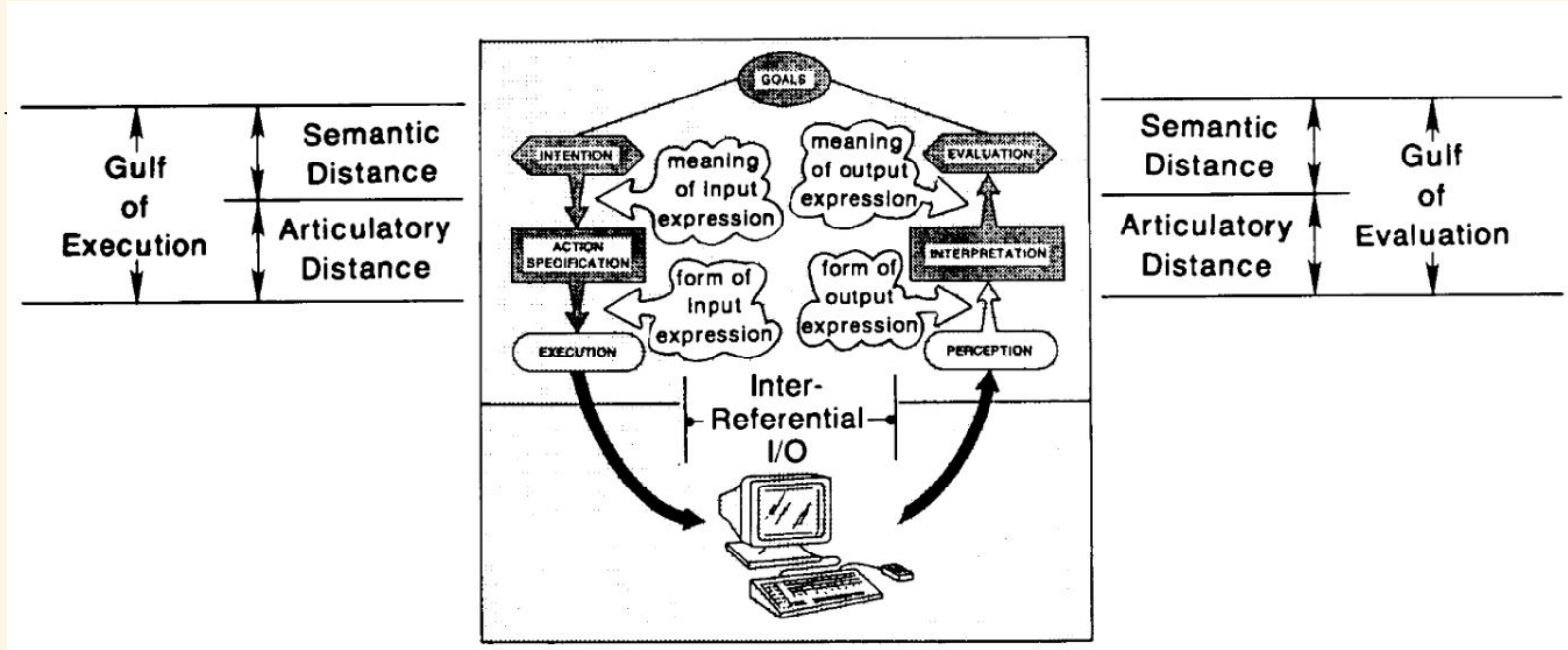


Direct Manipulation

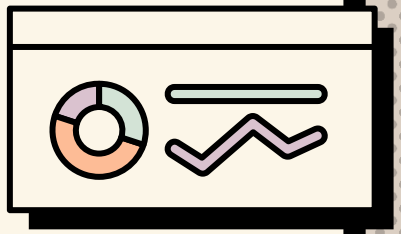
- Users interact directly with objects on the screen
- Requires expertise in task domain, but minimal knowledge of computing



Distance


Gulf of Execution
Semantic Distance
Articulatory Distance
GOALS
INTENTION
meaning of input expression
meaning of output expression
EVALUATION
ACTION SPECIFICATION
form of input expression
form of output expression
INTERPRETATION
EXECUTION
PERCEPTION
Inter-Referential I/O
Semantic Distance
Articulatory Distance
Gulf of Evaluation

Pros and Cons



Pros:

- Increases ease and power of performing some tasks
- Easier for beginners, efficient for experts

Cons:

- Has difficulty handling variables and not suited for certain tasks
- Problems with accuracy
- Constricts thinking to within the domain

Discussion Questions

In your experience, how have seen computers or software tools used for task automation or abstracting craft?

What are potential use cases you envision?

Are there any examples where you think direct manipulation has gone too far and has created more problems than solutions?

Activity

Break up into groups of 3-4 people. Choose a common app/software tool interface and come up with a way to make the interface more directly manipulative through decreasing semantic and articulate distance and bridging the gulfs of execution and evaluation.

Draw out the changes your group wants to make on the sheets of paper and be ready to share the changes you made to the rest of the class!

Some example of apps you could choose:

- Photo editors (Adobe Photoshop, Inkscape)
- Google apps (Gmail, Sheets, Slides, Docs, Maps)
- Social media apps (Instagram, Tiktok, Twitter, Youtube)

Thank you!