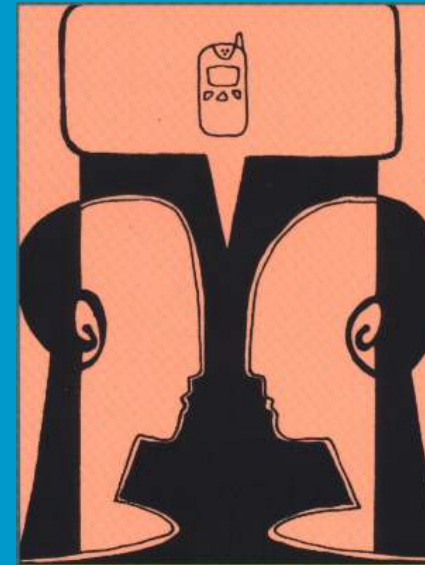


MKT project 1 & Mens-Machine-Interactie

slides chapter 3 Dix et al.
The interaction

Charles van der Mast



The Interaction

- **interaction models**
 - **translations between user and system**
- **ergonomics**
 - **physical characteristics of interaction**
- **interaction styles**
 - **the nature of user/system dialog**
- **context**
 - **social, organizational, motivational**

models of interaction

terms of interaction

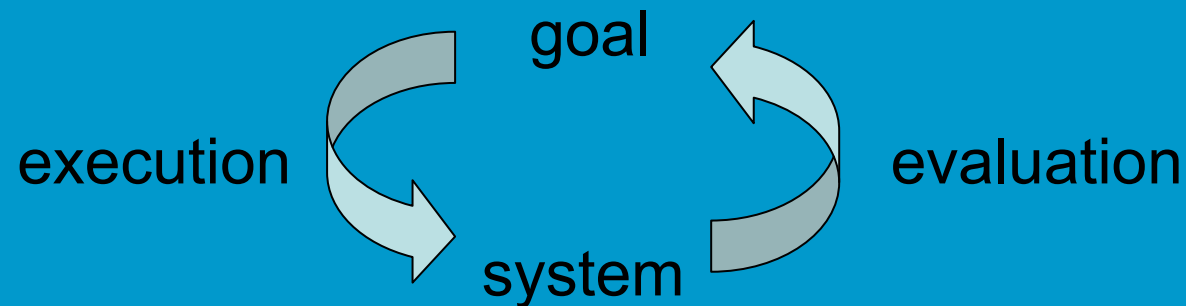
Norman model

interaction framework

Donald Norman's model

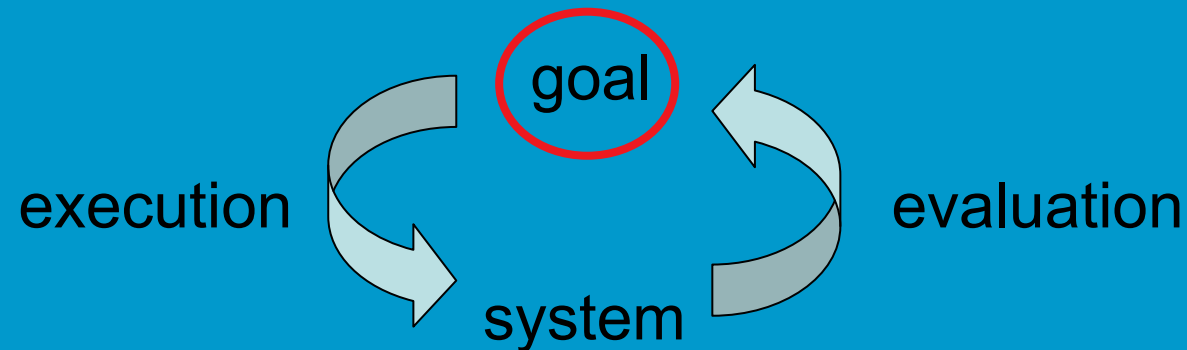
- **Seven stages**
 - **user establishes the goal**
 - **formulates intention**
 - **specifies actions at interface**
 - **executes action**
 - **perceives system state**
 - **interprets system state**
 - **evaluates system state with respect to goal**
- **Norman's model concentrates on user's view of the interface**

execution/evaluation loop



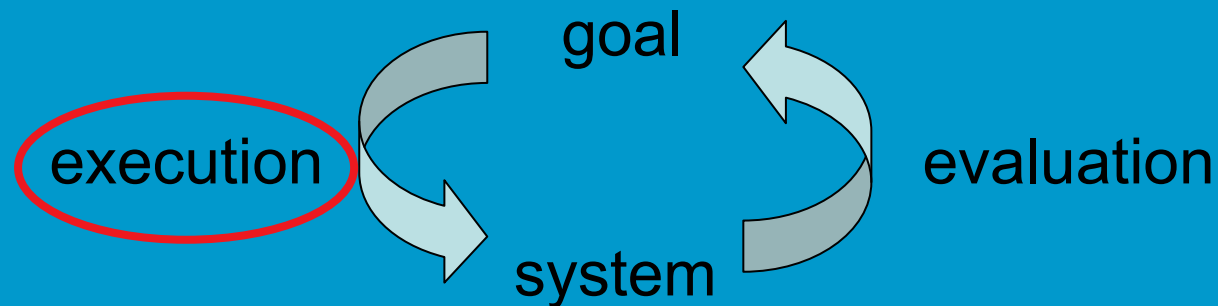
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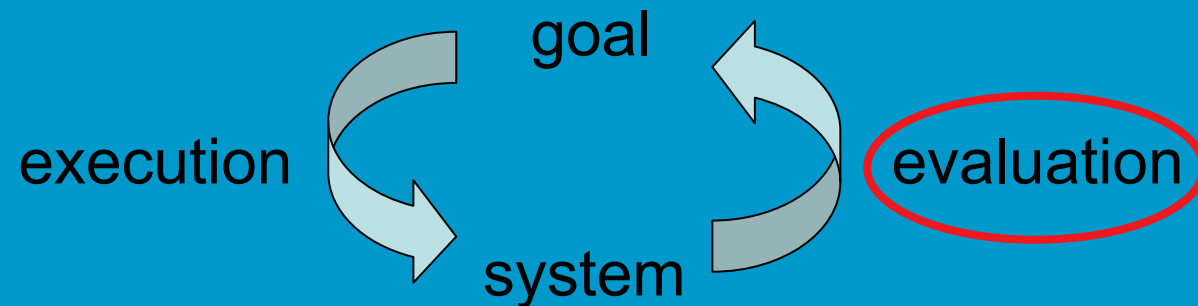
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execution/evaluation loop



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Using Norman's model

Some systems are harder to use than others

Gulf of Execution

user's formulation of actions

≠ actions allowed by the system

Gulf of Evaluation

user's expectation of changed system state

≠ actual presentation of this state

Abowd and Beale framework

extension of Norman...

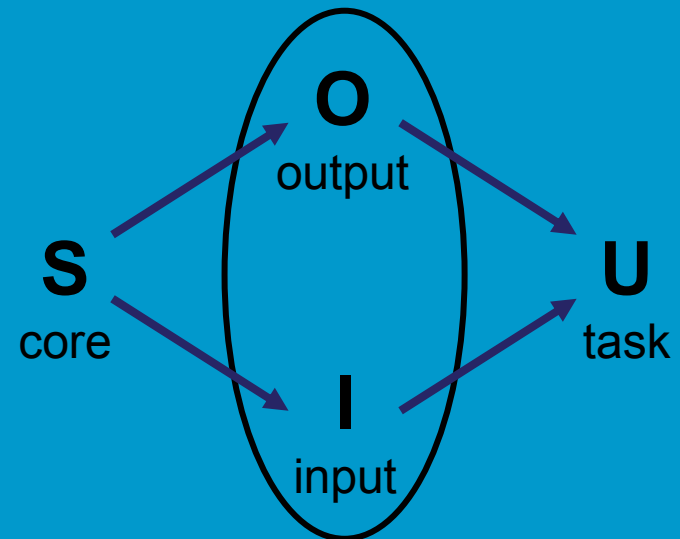
their interaction framework has 4 parts

- **user**
- **input**
- **system**
- **output**

each has its own unique language

interaction \Rightarrow translation between languages

problems in interaction = problems in translation



Using Abowd & Beale's model

user intentions

- translated into actions at the interface
- translated into alterations of system state
 - reflected in the output display
 - interpreted by the user

general framework for understanding interaction

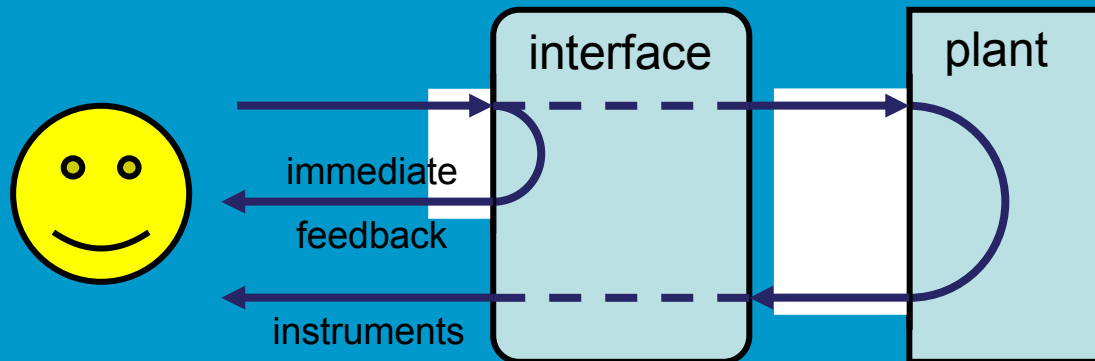
- not restricted to electronic computer systems
- identifies all major components involved in interaction
- allows comparative assessment of systems
- an abstraction

Indirect manipulation

- office– direct manipulation
 - user interacts with artificial world



- industrial – indirect manipulation
 - user interacts *with* real world *through* interface
- issues ..
 - feedback
 - delays



interaction styles

dialogue ... computer and user

distinct styles of interaction

→ See Casus MKT 1 in1810

WIMP Interface

Windows

Icons

Menus

Pointers

... or windows, icons, mice, and pull-down menus!

- default style for majority of interactive computer systems, especially PCs and desktop machines

elements of the wimp interface

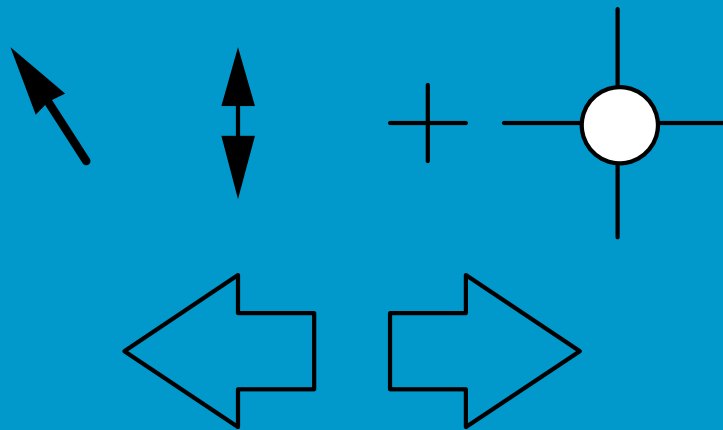
windows, icons, menus, pointers

+++

**buttons, toolbars,
palettes, dialog boxes**

Pointers

- important component
 - WIMP style relies on pointing and selecting things
- uses mouse, trackpad, joystick, trackball, cursor keys or keyboard shortcuts
- wide variety of graphical images



Experience, engagement and fun

designing experience
physical engagement
managing value



Experience?

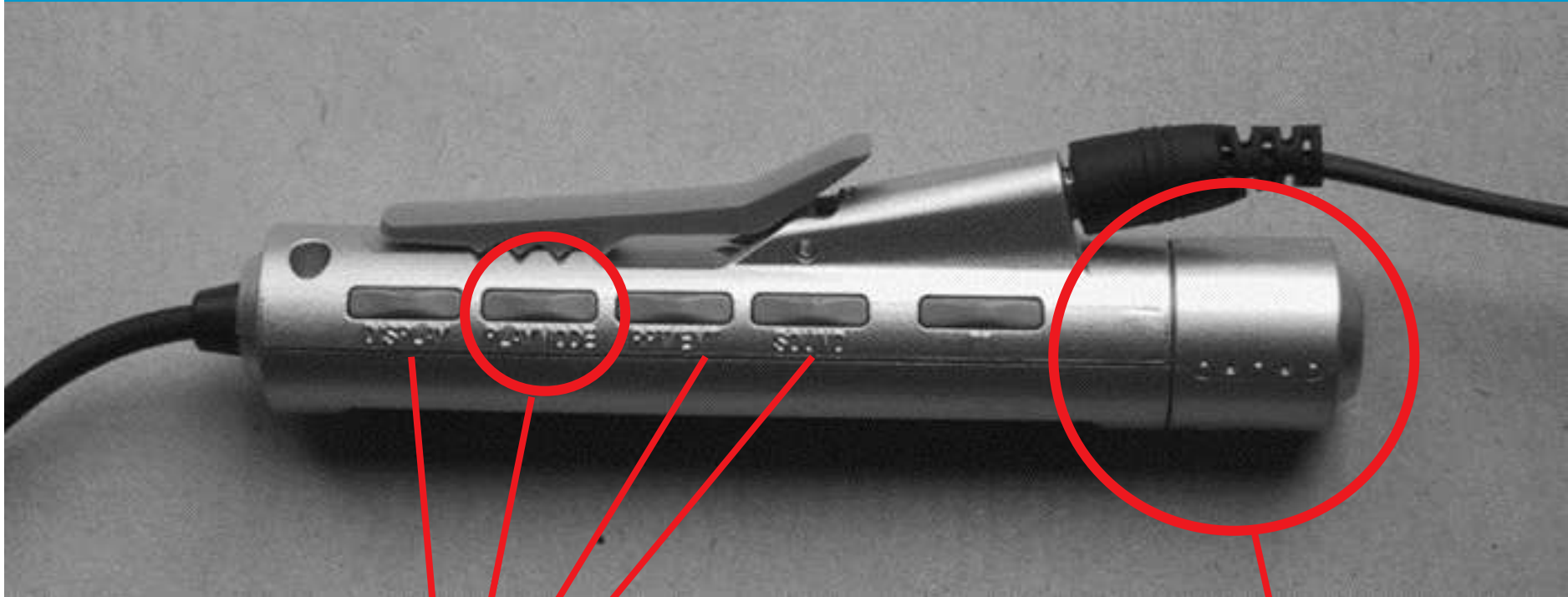
- **home, entertainment, shopping**
 - **not enough that people can use a system**
 - **they must want to use it!**
- **psychology of experience**
 - **flow (Csikszentimihalyi)**
 - **balance between anxiety and boredom**
- **education**
 - **zone of proximal development**
 - **things you can just do with help**
- **wider ...**
 - **literary analysis, film studies, drama**

inverse actions

- yes/no buttons
 - well sort of
- 'joystick'
- also left side control



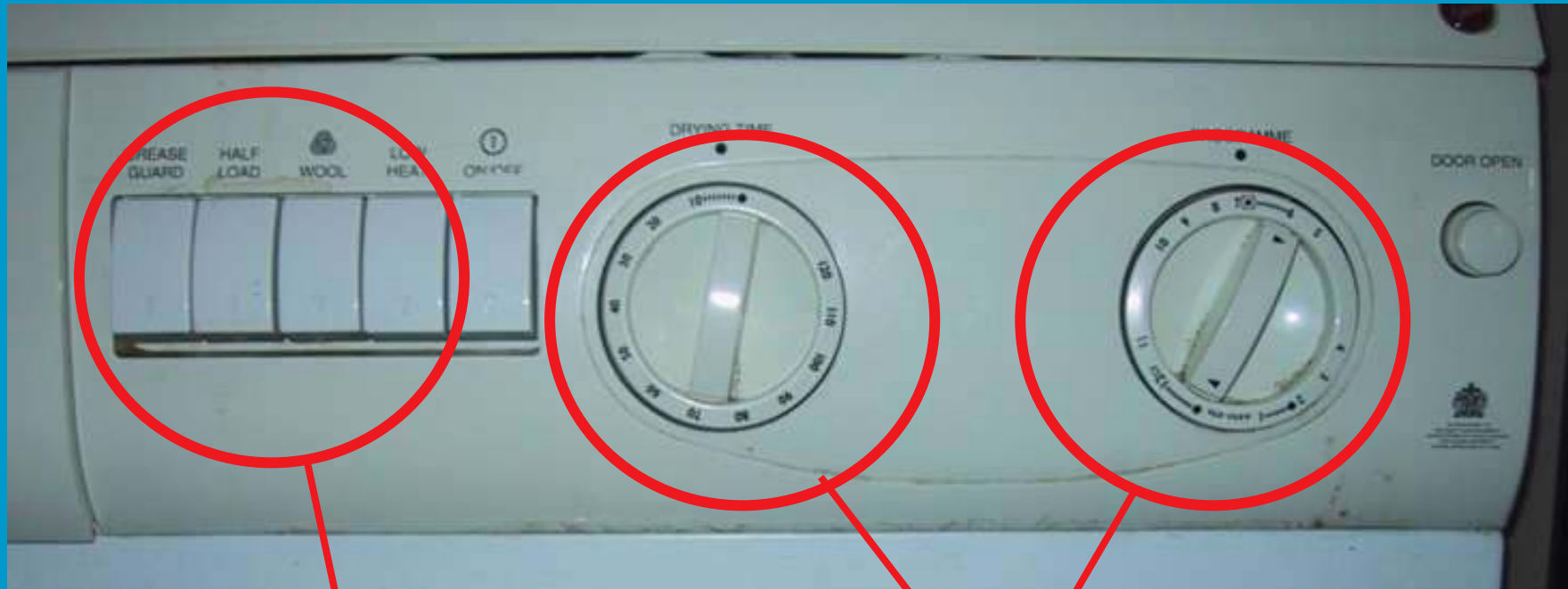
a minidisk controller



series of spring-back controls
each cycle through some options
– natural inverse back/forward

twist for track movement
pull and twist for volume
– spring back
– natural inverse for twist

compliant interaction



state evident in
mechanical buttons

rotary knobs reveal internal state and can be
controlled by both user and machine