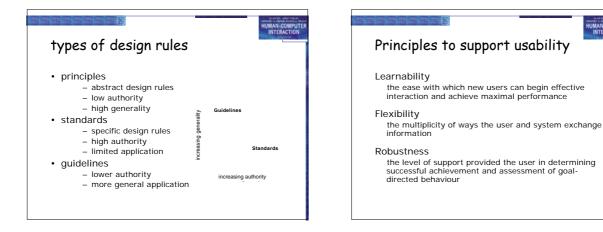
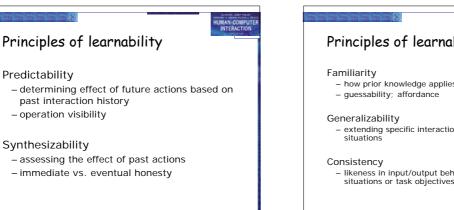
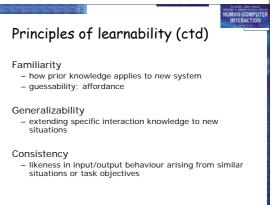




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Principles of flexibility

Dialogue initiative

- freedom from system imposed constraints on input
- dialogue - system vs. user pre-emptiveness

Multithreading

- ability of system to support user interaction for more than one task at a time
- concurrent vs. interleaving; multimodality

Task migratability

passing responsibility for task execution between user and system

Principles of flexibility (ctd)

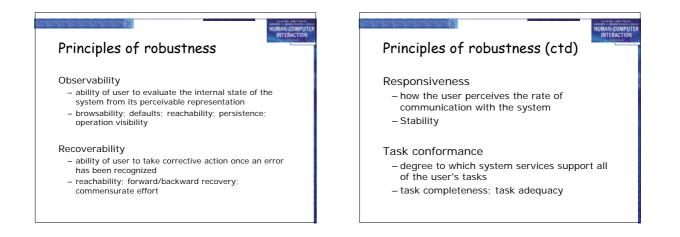
Substitutivity

- allowing equivalent values of input and
- output to be substituted for each other
- representation multiplicity; equal opportunity

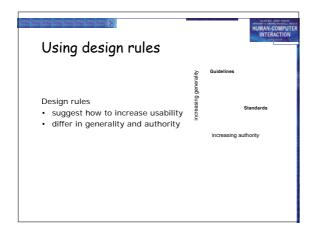
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Customizability

- modifiability of the user interface by user (adaptability) or system (adaptivity)



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Guidelines

- · more suggestive and general
- · many textbooks and reports full of guidelines

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- abstract guidelines (principles) applicable during early life cycle activities
- detailed guidelines (style guides) applicable during later life cycle activities
- understanding justification for guidelines aids in resolving conflicts

Golden rules and heuristics

- · "Broad brush" design rules
- · Useful check list for good design
- · Better design using these than using nothing!

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- · Different collections e.g.
 - Nielsen's 10 Heuristics (see Chapter 9)
 - Shneiderman's 8 Golden Rules
 - Norman's 7 Principles

Shneiderman's 8 Golden Rules

- 1. Strive for consistency
- 2. Enable frequent users to use shortcuts
- 3. Offer informative feedback
- 4. Design dialogs to yield closure
- 5. Offer error prevention and simple error handling
- 6. Permit easy reversal of actions
- 7. Support internal locus of control
- 8. Reduce short-term memory load

Norman's 7 Principles

- 1. Use both knowledge in the world and knowledge in the head.
- 2. Simplify the structure of tasks.
- 3. Make things visible: bridge the gulfs of Execution and Evaluation.
- 4. Get the mappings right.
- 5. Exploit the power of constraints, both natural and artificial.
- 6. Design for error.
- 7. When all else fails, standardize.

HCI design patterns

- · An approach to reusing knowledge about successful design solutions
- Originated in architecture: Alexander
- · A pattern is an invariant solution to a
- recurrent problem within a specific context. Examples
- Light on Two Sides of Every Room (architecture) Go back to a safe place (HCI)
- · Patterns do not exist in isolation but are linked to other patterns in languages which enable complete designs to be generated

HCI design patterns (cont.)

- · Characteristics of patterns
 - capture design practice not theory
 - capture the essential common properties of good examples of design
 - represent design knowledge at varying levels: social, organisational, conceptual, detailed
 - embody values and can express what is humane in interface design

 - are intuitive and readable and can therefore be used for communication between all stakeholders
 - a pattern language should be generative and assist in the development of complete designs.

Summary	HUMAN-COMPUTER
Principles for usability – repeatable design for usability relies on ma benefit of one good design by abstracting general properties which can direct purpos design	out the eful
 The success of designing for usability requ creative insight (new paradigms) and purp principled practice 	
Using design rules – standards and guidelines to direct design a	activity