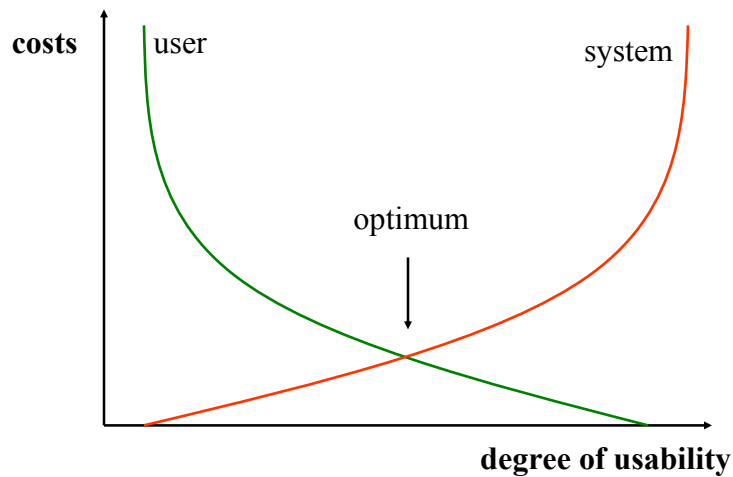


Interaction styles

Matthias Rauterberg
GOOGLE: rauterberg
2005



The optimization problem



What is the state-of-the-art?

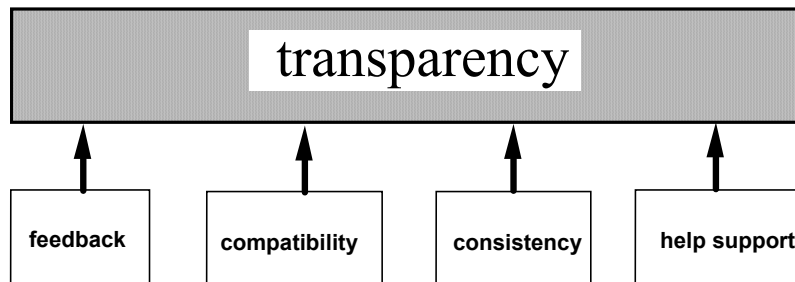
- **Discrete** interaction styles
 - command language
 - menu
 - desktop
 - direct manipulation
- **Continuous** interaction styles
 - ...

What comes in the future?

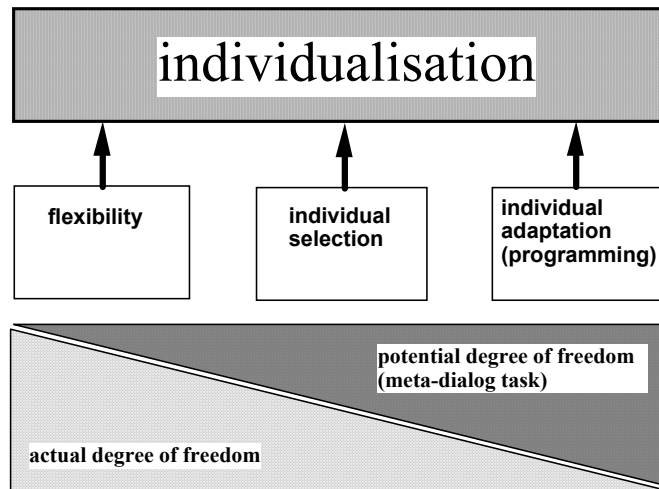
- **Continuous** interaction styles
 - speech input/output
 - computer vision based input (e.g., gestures)
 - audio interfaces (e.g., non-speech audio)
 - tactile and force feedback
 - biophysical signals (e.g., retina scanner)

| DIN 66 234 part 8 (1988) | EC directive 90/270/EEC (1990) | ISO 9241 part 10 (1996) | Ulich (1991) |
|--------------------------------------|--|--------------------------------------|--|
| suitability for the task | suitability (activity adapted) | suitability for the task | task orientation |
| self-descriptiveness | feedback about system states | self-descriptiveness | transparency |
| | appropriate format and pace of information presentation | | feedback |
| conformity with user expectations | | conformity with user expectations | compatibility |
| | information and instruction of user | suitability for learning | consistency |
| | ease of use applicable to skill level | suitability for individualization | support |
| | hearing and participation of users | | selection possibilities user definability |
| controllability | | controllability | participation |
| error robustness | | error tolerance | flexibility |

The first dimension



The second dimension

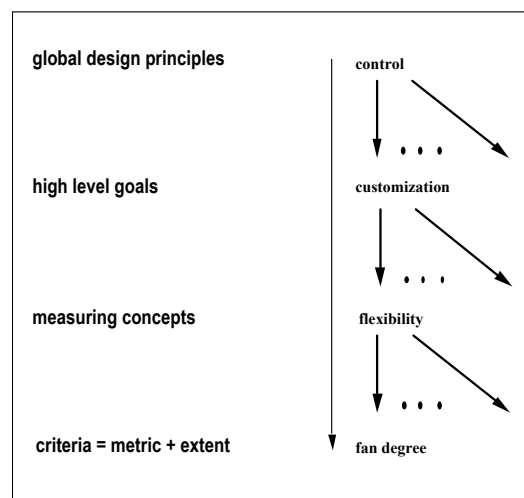


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How to measure usability?

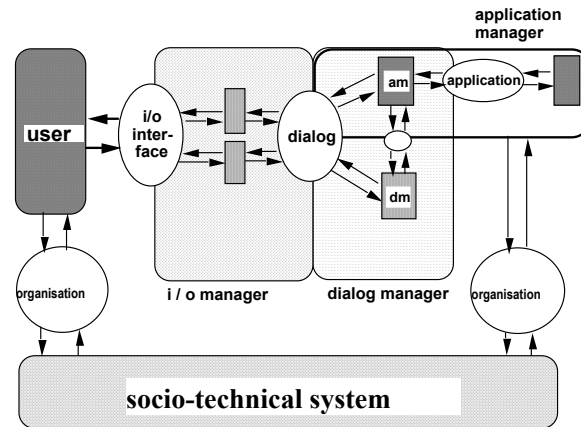


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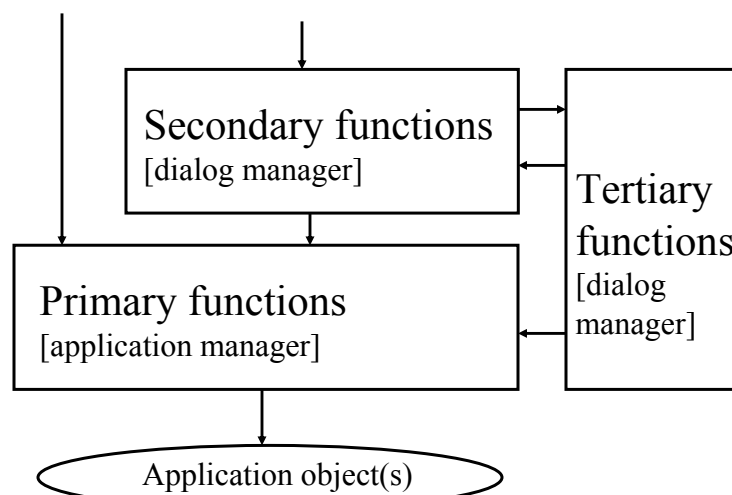
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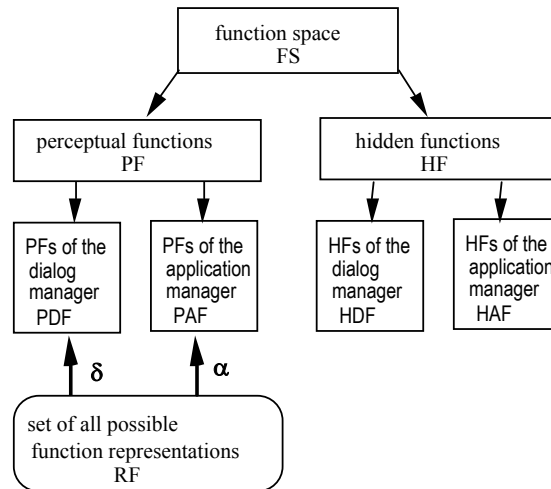
The interface architecture



Three different function types



The function space

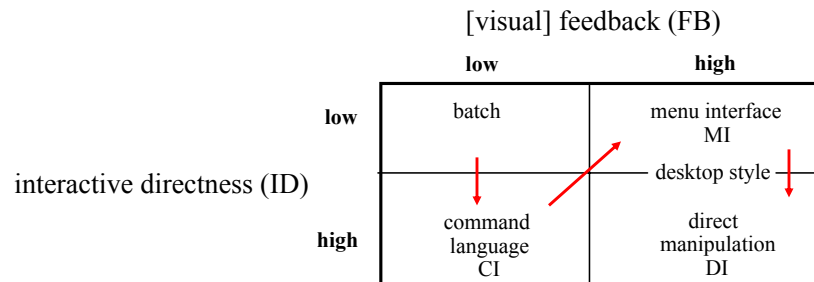


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Two dimensions for interaction

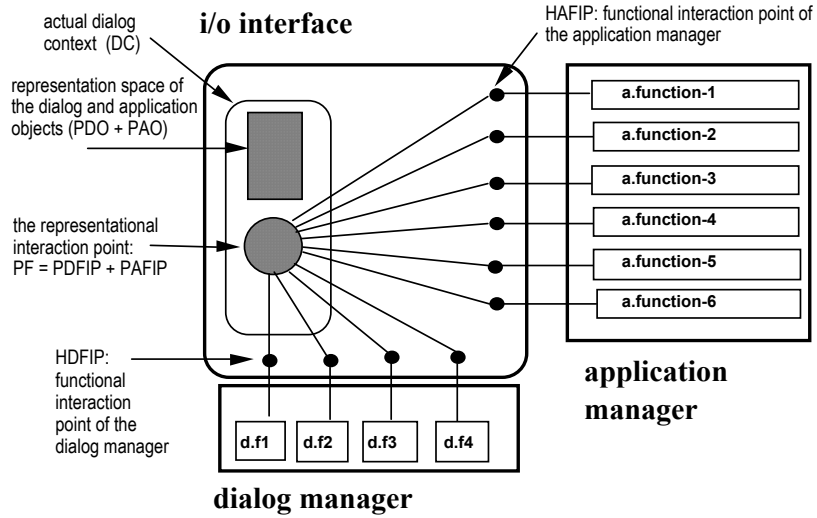


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Command language interaction

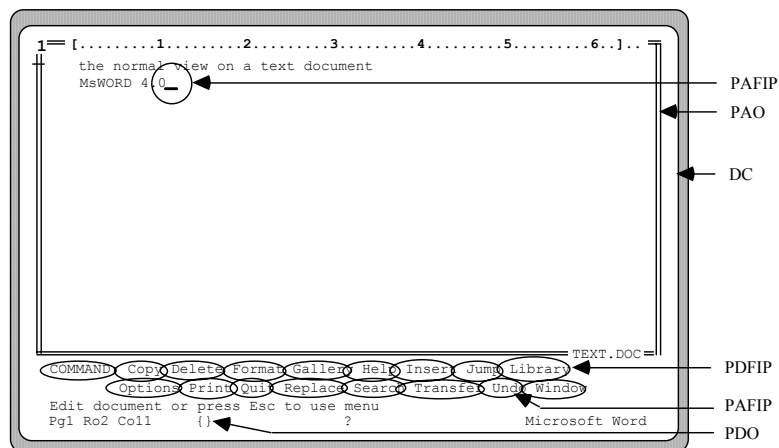


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Menu interface

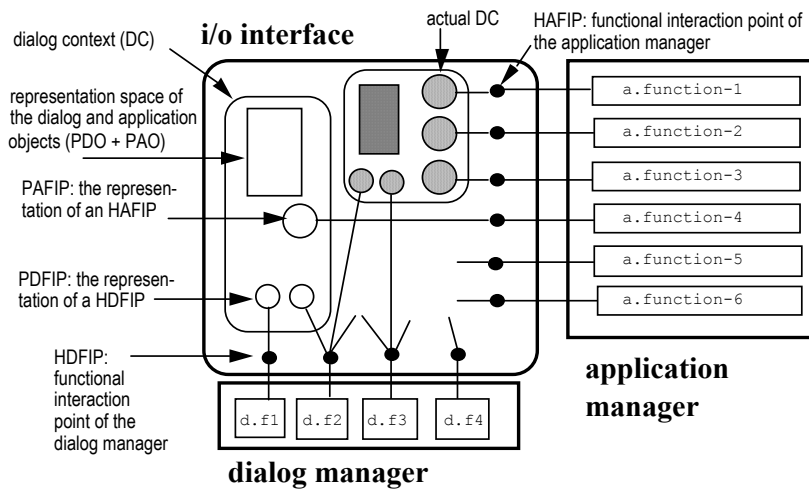


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Menu interaction style

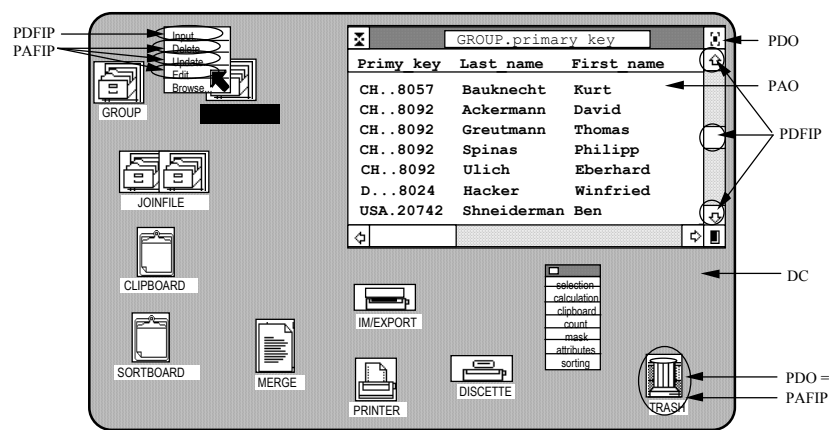


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Direct manipulation interface

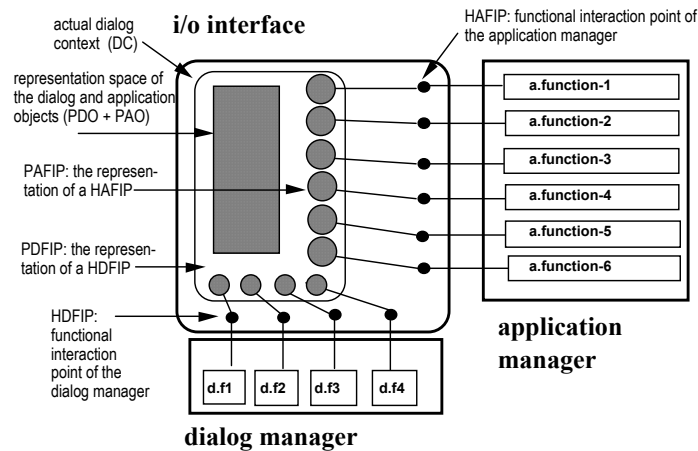


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Direct manipulation interaction



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