Adaptive Interfaces

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User Modeling in Human-Computer Interaction

- Problem: Write software at design time that feels personalized at use time.
- User Models: Models that systems have of users
- A system can only work cooperatively with a user if it understands what he/she knows and does.
The hard and interesting questions, such as, "exactly how *does* one go about constructing a user model?" were left frustratingly unaddressed.
--Steve Marmon
While the system seems effective when the user doesn't know the shortest way to perform a task, how can it tell when the user wants to perform a task but doesn't know how to begin even an inefficient method?
-- Nick Briggs
Saying the right thing at the right time in the right way

- Second Problem: Make information available in an appropriate way.

- "You can turn these tips off in the interface menu."
  -- a World of Warcraft tip of the day

- "Production Bias" (Carroll & Rossen) -- People just want to get the job done, so they are likely to "stick with what works"
  ○ leads to "suboptimal plateaus"
Adaptive and Adaptable Systems

- Adaptive: System automatically adapts to the user.
- Adaptable: User explicitly changes the system.

- **CS547: Krzysztof Gajos' "Automatically Generating Personalized Adaptive User Interfaces" (49:41)**

After installing Dreamweaver on my computer the first question the program asked me was if I was a designer or developer...By forcing me to chose between the two different settings, I felt that if I chose one, I would be missing all the features in the other interface. ~ Michael Fischer

For what applications would you like an adaptive system? For what applications would you like an adaptable system?
High-Functionality Applications

- Simple vs. complex domains
  - Compare Microsoft Word to "How the West was Won"

Speaking of which, Clippy Demo...

I'm not sure how valid it is to say that software must be made as if it was designed for the individual user. Everyone knows that software is standardized, and there are good reasons for this. I think there is a distinction here between configurability and actual design for a single person.

~Neil Patel
Clippy's "help" was intrusive, annoying, and useless.
--Ryan Park

The major take-away from Clippy’s failure is that agents can be incredibly useful in helping users achieve their goals, but agents are appreciated more when they are not visible, when they are part of a program rather than an individual entity.
--Robert Travis
5 dimensions in technical design space (example: CourseRank)
- contents of recommendation?
- explicit entry?
- anonymous?
- aggregation?
- use of recommendations?

Number of users
- more users --> better recommendations --> more users
Figure 3. Design and use time