USING COMPUTERS: A DIRECTION FOR DESIGN
By Terry Winograd & Fernando Flores

Presented by BETSY GOOCH
The Authors of Conversation-to-Action Approach

- Terry Winograd is a professor at Stanford whose focus is in AI, natural language systems, and HCl.
- Fernando Flores is a Chilean businessman and senator who did research on management and workflow technology.
3 Introduction

- This methodology is commonly known as the language/action perspective (LAP).
  - “Expert behavior requires an exquisite sensitivity to context"
- Such sensitivity is more in the realm of the human than in that of the artificial
- Designing computers as tools
• Computers will never attain human-like intelligence
  – “Essence of intelligence is to act appropriately when there is no simple pre-definition of the problem or the space of states in which to search for a solution.”
  – Rigidity of analytical computational models
  – Inexpressible subtleties in human cognition

• Heideggerian approach to AI
  – Moved away from machine understanding to human specification and machine support
Defining Terms

- **Readiness-to-Hand** – how readily apparent a systems of functions appear, the transparency of interaction
  - Ex. Hammer or car steering
- **Breakdown** – a the systems break down when an unexpected event occurs
  - strive to anticipate breakdowns
- **Blindness** – when concepts and abstractions applied to a problem are not sufficient
  - “an opening of new possibilities closes others”
Key Concepts

• There are no clear problem to be solved
  – The space of possibilities is determined by the particular offerings and the “features” they exhibit
  – Computer are not the “solution” but may be useful
• Any organization is constituted as a network of recurrent conversations
Key Concepts

- Conversations are linked in regular patterns of triggering and breakdown
  - Triggers – something within a system that causes something else

- New tools create new conversations and connections
  - Modification of the conversation structure
  - Need to understand real impact of design to more consciously design conversation structure that work
Key Concepts

- Design includes the generation of new possibilities
  - The power of the computer is its connection to the larger network of communication
- Domains are generated by the space of potential breakdown of action
  - Different conditions of satisfaction require different kinds of address
  - Cannot anticipate all breakdowns – must generate relevant domains in which actions are applied
Key Concepts

• Breakdown is an interpretation
  – Everything is subjective
  – The background shared by a community is what makes individual “tastes” possible
  – Objective = regularity

• Domains of anticipation are incomplete
  – Every attempt to anticipate breakdown reflects a particular domain of anticipation
  – Must design with flexibility to encounter other (always unanticipated) breakdowns
Key Concepts

- Computers are tools for conducting the network of conversations
- Innovations have their own domains of breakdown
  - Breakdowns must be understood within a larger network of conversations
  - More often than not, breakdowns do not occur in function but rather in the “web of commuting”
- Design is always happening
Questions & Discussion