Spoken Language Interfaces:
Steps towards graceful interaction in spoken and written
man-machine communication, P.J. Hayes and D.R.

Seminar on Dialogue Processing
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Components of graceful interaction

- Robust communication
- Flexible parsing
- Domain knowledge
- Explanation facility
- Focus mechanisms
- Identification from descriptions
- Generation of descriptions
Robust Communication

• Implicit confirmation
• Implicit acknowledgements
• Explicit indications of incomprehension
• Echoing
• Fragmentary recognition
Flexible parsing

• Grammatical deviations
  – Conceptual parsing
  – Error modeling
Domain knowledge

• Simple services
  – Frames (forms)
Explanation facility

• Questions about…
  – Ability *can you make a reservation?*
  – Events *have you made a reservation?*
  – Hypotheticals *what if we had three people?*
  – Facts *what are your opening hours?*
Goals and focus

• Goal-oriented interaction
  – Tracking multiple goals
  – Decomposition into subgoals

• Systems that don’t have their own goals, and deal only with specific user goals

• Focus
  – Defining and tracking focus
  – Common ground
Identification from description

- Ambiguous
- Unsatisfiable
Language generation

• Economy of expression (Grice)
• Re-parsable