Breakout Report

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Perceptual Info and Agent-Internal Representations

- There are such things as objects.
- They have properties that agents can recognize.

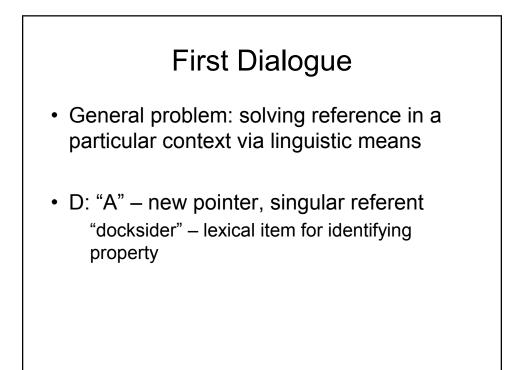# Interfacing Language and Internal Representations

- Setting up pointers for the different objects that are perceptually identified.
- Lexical entries are matched to properties as represented by agent.
- Associating lexical descriptions of properties to the object pointers.

Cooperation Principles

- Deciding that there is a common project.
- Accepting/rejecting/modifying role in common project.
- Project execution
  - Doing your task
  - Signaling uptake
  - Checking if progress is satisfactory
  - Negotiating subtasks.

Interfacing social aspects with language

- Linguistic means for identifying, designing, negotiating a particular project.
- Signaling subtask completion, acknowledging obligations, apologizing, correcting….
- Certain projects are purely linguistic
  - Exchanges of information (Q/A)
  - Adequate linguistic representation for these projects is necessary.

First Dialogue

- General problem: solving reference in a particular context via linguistic means

- D: "A" – new pointer, singular referent
  "docksider" – lexical item for identifying property

First Dialogue

- M: "a"
  - accepts project
  - Accepts new pointer, singular referent

    "what?"
    - Failure to recognize lexical item and match property
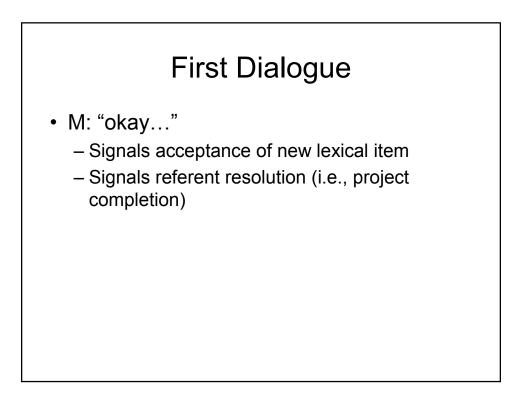   - Request for more information re: term

First Dialogue

- D: "um"
  - Acknowledges miscommunication.
  - Signals uncertain of how to disambiguate / further specify.
- M: "is that a kind of dog?"
  - Acknowledges M's uncertainty.
  - Offers possible disambiguation.

First Dialogue

- D: "…it's a kind of…."
  - – Acknowledges disambiguation attempt
  "No"
  - - Rejects disambiguation attempt
  "leather shoe…"
  - - Proposes new lexical item
  - - Defines using less specific terms, world knowledge

First Dialogue

- M: "okay…"
  - – Signals acceptance of new lexical item
  - – Signals referent resolution (i.e., project completion)

Representation of the Task

- Set of available objects
- Properties associated with the available objects
- Current candidate set for possible resolutions
- Goal: narrow down candidate set to singleton
  - Failure: 0 candidates (docksider)
    - >1 candidates (shoe)

Integrating the 4 types of information

- Both D and M need to have access to the same set of perceptual information
- Their internal representations need to be sufficiently similar
- Both D and M need to have similar meaning representations for linguistic forms
- Similar notions of cooperation etc. and appropriately pairing them with linguistic forms
- Sense of what world knowledge they are likely to share.

Critique of Linguistic Models

- Incomplete recognition of language as collaborative
- Insufficient account of lexical meaning
- Meaning of sentences as moves in a social game
- Incomplete analysis of reference solving, tracking (world knowledge, etc.)
- Total lack of meta-game level