

# Conversation Structure

Finding communication patterns in email, blogs, forums and other textual discourse that can be exploited for search, summarisation and presentation

**Presented by:** Andrew Lampert  
CSIRO ICT Centre / Macquarie University  
22<sup>nd</sup> September 2006



- Significant amount of textual discourse on the web, on our desktops, and in organisations:
  - Email
  - Forums/Newsgroups
  - Instant Messaging
  - Blogs (comments, trackbacks, links)
- Information structure varies across genres BUT many IR systems still treat textual conversations as a bag-of-words
- Can we uncover and leverage some of the characteristic structure of conversations?

- Austin/Searle: Each utterance in a conversation is an action performed by the speaker.
  - E.g., advising, requesting, confirming
- “Speech” Acts occur in textual discourse just as they do in spoken dialogue
- Direct vs. Indirect speech acts
  - A: Do you want to meet me for coffee?
  - B: I have a lecture.

- Winograd & Flores: Sequences of acts in workplace conversations exhibit recurring patterns.
  - Is this true more broadly?
- Can we detect speech acts and observe patterns of intention to infer conversation structure and state?
  - Capture during crawling
- Can we determine the ‘completeness’ of conversations?
- Maybe also use other discourse properties (e.g., rhetorical structure)

- Special purpose applications – searching, summarising and presenting collections of conversations
- Provide richer conversation search than currently provided for conversations (e.g., Google Groups, Desktop Email/IM Search)
  - Find questions about superannuation co-contribution
  - Find instructions about changing a toner cartridge in an HP Laserjet 5M printer
  - Who is expressing opinions about Enron?

- Intelligent assistance for email users to process and prioritise messages (especially for email triage)
  - Help to understand the status of current conversations
    - E.g., highlight unfulfilled commitments, unanswered requests
  - Highlight potentially incongruous responses
  
- Clustering or summarising conversations
  - Task-oriented summarisation of personal email
  - Exploration of conversation collections

- Learning about specific language use and response patterns to characterise roles and relationships for discourse participants
  - e.g., attentive vs. informative, directive vs. acquiescent
- Searching for occurrences of specific corpus or discourse phenomena – a tool for socio-linguists

- How to expose discourse structure information to users (e.g., for searching or navigating)
- Getting real data (email, IM)
- Annotating data
- Dealing with low-quality data
- Scaling to large collections
- Evaluating effectiveness