



# Pragmatic Phenomena as Living Fossils of Language Evolution

Nobo Komagata

Dept. of Computer Science, The College of New Jersey

IPrA, Riva del Garda, 12 July 2005

# Noam vs. Nim



Colorless ...



Nmm!

Human language  
**Analytic**  
“complex” grammar

Primitive communication  
**Holistic**  
signal ~ whole situation

# Main Problem

- Holistic-analytic transition [e.g., Wray 00]
  - Essential question for understanding language evolution [cf. Jackendoff 02]
- This talk: Presents potential “living fossils” in pragmatics
  - Relating pragmatics and language-evolution studies (e.g., sharing tools such as theory building, modeling/simulation)

# Outline

- Living fossils
- Excavation Part 1
  - Living fossils in pragmatics
- Excavation Part 2
  - Information structure
- Reconstruction
  - Evolution of information structure

# Living Fossils

Not fully-analytic aspect of modern language (not “ancient” or “primitive”)

- Frozen expressions (e.g., “Ciao”) [cf. Wray 00]
- Noun-noun compounds (e.g., “music therapy”) [Jackendoff 02]
- Language disruption (e.g., creoles) [Bickerton 81]

# Examples in Pragmatics

- Speech act
  - Shared by humans and primates [Reiss via Wray 00]
    - Primates: Use of call/gesture to “do” things (e.g., directive, commissive)
- Placement of agent/topic [Jackendoff 02]
  - Agent: thematic role, cf. patient/experiencer
  - Topic: “information structure,” more later

# Other Examples

- Inference (e.g., “it’s nice outside”)
- Presupposition (e.g., “did you stop beating your wife?”)
- But
  - Not all pragmatic phenomena are holistic. (e.g., deixis)
  - Some are not clear. (e.g., politeness)

# Information Structure

- Roughly, *Old*-*New* informational contrast in a sentence [ref. Lambrecht 94, Vallduví 90]
  - Cf. *topic-focus*, *theme-rheme*, multiple divisions
- Clear-cut example

*Q: Where is the conference held?*

*A: [It is held]<sub>Old</sub> [in Riva del Garda]<sub>New</sub>.*

# Some Properties

- Orthogonal to propositional semantics
- Important for contextual appropriateness
- Partially grammaticalized in some languages
  - I.e., incorrect use can be ungrammatical (not just inappropriate)

# Grammaticalization Status

- Intonation
  - To some extent, grammaticalized in spoken English [e.g., Steedman 00]
- Word order
  - Affects contextual appropriateness in English [e.g., Halliday 67]
  - Grammaticalized in Czech [e.g., Sgall+ 86]
- Morphology
  - Grammaticalized in Japanese [e.g., Kuno 72]

# Japanese *wa*

- Particle *wa* as *old* (topic/theme) marker
- History
  - Originally contrastive function only [Ueno 87]
  - Evolved to be ambiguous between contrastive (always with stress) and *old* markers
  - Completely grammaticalized

# Old - New Division

- Not always clear cut, esp. in narratives  
[e.g., Komagata 03]
  - E.g., information structure in this text?

*“Although, of course, the analogy with language is not perfect, algebra is a cultural product that is clearly not in the genes. Of course human beings are quantitatively inclined biologically, but the specific structures of algebra are a product of a particular historical evolution. Languages are the same way.”* [Tomasello 03]

# Information Structure as Living Fossil

Pointed out in the literature [e.g., Jackendoff 02]

Emphasis in this work

- Orthogonal to propositional semantics
- Two not-so-clear-cut categories
  - I.e., *Old*/*New* (possibly more divisions)
- Diverse realization across languages
- Evidence of evolutionary development

# Evolution of Information Structure

Grammar  
(analytic)

No information structure  
(vacuously holistic)



Information structure  
(pre-analytic)  
Binary, murky categories

# Subject-Predicate Ordering

*Assuming no syntactic constraints*

- Holistic stage: no ordering preference
- Early stage: *Old*-*New* ordering preferred  
Anna has a house. The door is purple.
  - Cf. information theory [Komagata 03]
- Cf. so-called “verb-initial,” “rheme-first” languages [e.g., Mithun 95]

# Conclusion

- Pragmatic phenomena as living fossils
  - Esp. the evolution of information structure
- Bridging pragmatics and language-evolution studies (e.g., sharing methods/tools)
- Future directions
  - Diachronic study of information structure
  - Connection to the “mirror system” [Arbib 03]

Paper: <http://nobo.komagata.net>