ISSUES IN PRAGMATICS (PLIN M301) 2005-6

LEXICAL PRAGMATICS

10. Lexical pragmatics and acquisition of word meanings

1. Introduction

Quine's problem (Quine 1960: 29)
A linguist visits a new culture with an unknown language. A rabbit runs past, and a native speaker says 'Gavagai!' How does the linguist know what 'gavagai' means?

'rabbit', 'animal', 'rabbit's head/foot/tail', 'undetached rabbit part', 'moving thing', 'rabbit or coconut', 'I forgot the washing', 'I wonder what's on television tonight'…

The child's problem
A child is born into a culture with an unknown language. How does it know what words mean?

Facts about acquisition
1a. Children from 12 months learn about 10 new words a day till end of high school.
1b. They 'fast map' word to meaning after one or two exposures.
1c. Deaf children learning Am. Sign Language acquire words at the same rate as hearing ones.
1d. Blind children have a vocabulary indistinguishable from sighted ones by the age of 3.
1e. Adults often overtly name objects for children, but rarely overtly name actions:

'When, every evening, Mother opens the door upon returning from work, what does the child hear? I would venture that he rarely hears her say, 'Hello, Alfred, I am opening the door', but very often hears, 'Hello, Alfred, whatcha been doing all day?'… In short, any scheme for learning from observation must have some machinery for dealing with the fact that caretaker speech is not a running commentary on scenes and events in view.' [Gleitman 1990: 19]

Possible factors in an explanation
2a. **Conceptual factors**: availability of **concepts** to act as word meanings. (Fodor 1975)
2b. **Linguistic factors**: innate **linguistic** expectations or biases. (Markman 2003)
2c. **Pragmatic factors**: the ability to infer what the speaker **intends to convey**. (Bloom 2000)

Possible answers to Quine's problem
3a. Concepts for **objects** are more central to cognition than concepts for object-parts, etc.
3b. Children have an innate **linguistic** bias to assume that new labels apply to whole objects.
3c. Children can infer that the **speaker's intention** is to refer to a whole object.

Probably both (3a) and (3c) are crucial. There is more controversy about (3b).

Today's goal: To investigate the role of pragmatic factors in acquisition of word meanings.

2. Word meanings and theory of mind

Two hypotheses about how children learn word meanings
4a. **Empiricist** view: children learn **associations** between word and object. (L. Bloom 1994)
4b. **Mindreading** view: children infer what the speaker **intended to convey.** (P. Bloom 2000)

Empiricist account
'Once the child learns something about objects and events … word learning consists of good old-fashioned associative learning. In the beginning, the data for learning the meanings of language are in the circumstances of use in which children hear words … The meaning of early words … can be gotten from the words and their corresponding events' (L. Bloom 1994: 221).

Mindreading accounts
'When [my elders] named any thing, and as they spoke turned towards it, I saw and remembered that they called what they would point out by the name they uttered. And that they meant this thing and no other was plain from the motion of their body … expressed by the countenance, glances of the eye, gestures of the limbs, and tones of the voice, indicating the affections of the mind, as it pursues, possesses, rejects and shuns' (Augustine, quoted in P. Bloom 2000: 61).

'To put this in more contemporary terms, children use their **naïve psychology** or **theory of mind** to figure out what people are referring to when they use words. Word learning is a species of intentional inference, or … mind reading' (P. Bloom 2000: 61).

For this account to work, **mindreading** must mean more than ability to pass the false-belief task: word learning starts at 12 months, whereas false-belief isn't mastered till 3.5 years or so:

Mindreading abilities that precede word learning
5a. Following the direction of an adult's gaze (9 months).
5b. Following adult's pointing gestures (9 months)
5c. Monitoring adult's emotional state from facial expressions (9 months).
5d. Monitoring adult's face when confused or uncertain ('social referencing')(9 months).
5e. Interpreting actions as goal-directed (1 year).
5f. Engaging in non-verbal inferential communication (1 year).

Experiments testing empiricist vs. mindreading accounts
6a. Infant 18 months plays with two unfamiliar toys, A and B. Experimenter puts B away in a bucket and lets child play with A. When child is fully absorbed in A, experimenter looks towards bucket and says 'It's a modi'. Later he asks child 'Show me the modi'. (Baldwin 1993)

Empiricist hypothesis: Child should show object A (association between sound and object).
Mindreading hypothesis: Child should monitor adult's eye gaze, assume modi is B, show B.

Results (Baron-Cohen, Baldwin & Crowson 1997)
Normally developing children satisfy the **mindreading** hypothesis.
Children with **autism** satisfy the **empiricist (associationist)** hypothesis.
Children with **Williams syndrome** are **mindreaders** (Stevens & Karmiloff-Smith 1997).

6b. Infant 15-20 months plays alone in room with a novel object. Adult hidden outside room waits until infant is focused on object, says 'Dawnoo. There's a dawnoo'. (Baldwin et al. 1996)

Empiricist hypothesis: Child will assume that object is called 'dawnoo'.
Mindreading hypothesis: Child will not assume that object is called 'dawnoo'.

Results: Normally developing children mindread; children with autism don't. (Wilson 2003)

6c. Experimenter says to 2-year-old 'I am going to plonk Big Bird'. Performs action A, says 'Whoops' and looks disappointed, then performs action B, says 'There' and looks satisfied. The child is later asked 'Can you plonk Big Bird?' (Tomasello & Barton 1994).

Empiricist hypothesis: Child will imitate action A rather than action B.
Mindreading hypothesis: Child will imitate action B rather than action A.

Results: Normally developing children mindread; children with autism don't. (Wilson 2003)

Conclusion: Normal acquisition of word meanings involves **mindreading**

3. <u>Innate linguistic or pragmatic biases?</u>

Hypothesis (e.g. Woodward & Markman 1997, Clark 1993; Markman 2003)
Children's vocabulary learning is facilitated by innate **biases** or **expectations**

Mutual exclusivity bias. Words should not have **overlapping reference**; objects should not have **more than one label**.

7a. Infants 15 months are shown an object they can name (e.g. a spoon) and asked 'Can you show me the modi?' They tend to ignore the spoon and look around for another referent.
7b. Preschool children shown a single familiar object (e.g. a banana) and asked 'Show me the fendle' tend to assume the fendle is a part of the object, not the object itself.
7c. Preschool children shown one familiar object (e.g. a banana) and one unfamiliar (e.g. a whisk) and asked 'Show me the fendle' tend to pick the unfamiliar object.
7d. Children are shown 2 actions, one familiar and one unfamiliar, and asked 'Where's gorping?' They will assume that gorping is the unfamiliar rather than the familiar activity.
7e. This bias only applies within a single language: bilingual children readily acquire synonyms.
7f. There are exceptions, e.g. *dog, doggie, puppy, pet, animal, Fido*, which children accept.

Issue: Is this a specifically **linguistic**/**lexical** bias, which applies only to word learning, or is it a more general **pragmatic** bias which applies to non-verbal communication too? (e.g. the child assumes that red and blue flags indicate different objects or actions) (P. Bloom 2000: 65-78.)

Hypothesis
This behaviour might be seen as following naturally from the relevance-theoretic comprehension procedure and its consequence that 'Extra effort demanded implies extra (or different) effects'.

(Bloom 2000 argues for a pragmatic account; Markman 2003 argues for a lexical account.)

4. <u>Relevance and early word learning</u>

Hypothesis (Akhtar 2002)
Expectations of **relevance** play a role in acquisition of word meanings. Children acquire the meaning that is pragmatically **relevant** in the circumstances.

Quine's problem and the acquisition of adjectives
Adult points to an object and says 'This is a *dacky* one'. How does the child understand *dacky*?

Akhtar's experiment
8a. Two test groups (2.3-2.10; 3.0-3.8). Shown series of objects, 1 with novel shape & texture.
8b. Test condition A: 'This is a round one; this is a square one; this is a *dacky* one'.
8c. Test condition B. 'This is a smooth one; this is a fuzzy one; this is a *dacky* one'.
8d. Children later tested on new objects and asked, 'Which is the dacky one?'

Results
'In determining the reference of a novel adjective, children attended to the dimension most relevant to the discourse context. This was true for both age groups; both were able to use the preceding discourse context to disambiguate the meaning of the novel adjective'. (p. 682).

Comment
These experiments may show only that children are following a path of **least effort** in interpreting novel adjectives. It would be interesting to test whether the **effect** factor also plays a role (and whether effort and effect can be independently manipulated, as in Sperber et al. 1996.)

5. Conclusion

Further work is needed on how mindreading abilities interact with lexical-pragmatic processes such as **narrowing**, **broadening** and **attributive use.**

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