

Ling151/ Psych156A

Winter 2018

Review Questions: Word Meaning

(1) Terms/concepts to know: mapping problem, fast mapping, cross-situational learning, Bayesian inference, posterior probability, likelihood, prior probability, sequential updating, positive examples, whole object constraint, taxonomic constraint, subordinate, basic, superordinate, suspicious coincidence, lexical contrast, early-talker, late-talker, conversational implicature, cooperative principle, Maxim of Quantity, scalar implicature, epistemic modal, generalized implicatures, particularized/ad-hoc implicatures, generics

(2) While fast mapping may sound like a good strategy in theory, why is it unlikely to be easy to carry out in real world situations? (Hint: Think about how many potential referents there are in a real world situation.)

(3) What evidence is there that infants can do cross-situational learning in experimental scenarios?

(4) As with fast mapping, why might cross-situational learning be more difficult in realistic scenarios, as compared with experimental scenarios where it has been shown to be present in infants? Is there any reason to believe that realistic scenarios (which have more potential referents) might be better for a cross-situational learner than scenarios where only a few word-referent pairings are presented?

(5) What is the “Propose But Verify” hypothesis? How does it differ from a learning account where child are always considering multiple hypotheses? Does it correlate with children’s behavior?

(6) What are some factors that appear helpful for learners who use cross-situational learning to figure out word meaning? Why might they be helpful? (Hint: Does partial word knowledge help? Does repetition help? Does having a child’s perspective of the world seem to help?)

(7) Give one example of overlapping concepts. How could this complicate a cross-situational learning strategy? (Hint: Think about children’s assumptions -- like mutual exclusivity or lexical contrast -- when doing a cross-situational learning task.)

(8) What does it mean to have a graded inference about word meaning? How does this fit with the idea of cross-situational learning and Bayesian inference? (Hint: What does it mean for a hypothesis to have some probability?)

(9) How do constraints like the whole object constraint and the taxonomic constraint help a Bayesian learner? (Hint: Think about what these constraints do to the hypothesis space of possible word meanings.)

(10) Bayesian learners automatically implement a sensitivity to “suspicious coincidences”, which is particularly useful when one hypothesis is a subset of another hypothesis. Give one example where a word-meaning hypothesis is a subset of another word-meaning hypothesis. Which would a Bayesian learner choose if it had encountered a number of suspicious coincidences?

(11) How do we know that children were conservative in how they made generalizations in the Xu & Tenenbaum (2007) experiment? (Hint: Think about their behavior on the one example condition and the three subordinate example condition.) What was the difference between the one example condition and the three subordinate example condition, when we look at children’s generalization behavior? Does this fit with the idea that children are sensitive to suspicious coincidences? Why or why not?

(12) Are children sensitive to how the data they learn from are selected? How do their generalizations differ when they think the data are sampled randomly vs. when they think the data are not sampled randomly? (Hint: Think about this in relation to suspicious coincidences.)

(13) Can a Bayesian learner incorporate the idea of lexical contrast? How?

(14) What is one problem with the Bayesian learning account when we look at very early word learning (such as the word learning that occurs under 3 years of age)? (Hint: Think about how fast the Bayesian learner learns.) What are some ideas about how to reconcile a Bayesian learning account with very young children’s word learning? (Hint: How might a young child’s hypothesis space differ from an adult’s? What about a young child’s processing abilities?)

(15) Does children’s sensitivity to suspicious coincidences (at least as measured by the noun generalization experiment of Xu & Tenenbaum 2007) remain constant over time? How does it change? (Hint: Think about children who know fewer category members vs. children who know more category members vs. adults.) How could language experience impact older children’s generalization tendencies? (Hint: What do older children think about words of one morpheme vs. compound words?)

(16) How can a listener use the Maxim of Quantity to interpret “Some penguins are cute” appropriately? (Hint: Does it mean the speaker thinks all penguins are cute? Why not?)

(17) Some experimental evidence suggests children as old as ten years old struggle with certain kinds of implicatures (Noveck 2001). Why might these studies underestimate children’s ability to compute implicatures? (Hint: Think about what kind of task children were asked to do and how natural that task is.)

(18) How do epistemic modals relate to scalar implicatures?

(19) Consider the Ozturk & Papafragou 2015 study.

(a) Are there cases where both children and adults fail to compute implicatures? How do we interpret this with respect to understanding children's development of implicature computation?

(b) Do adults compute epistemic modal implicatures when asked to explicitly judge between two statements? Do four- and five-year-old children? Is there any difference in adult and child ability? (Hint: Think about children's performance on "may be" vs "is" and "has to be" vs. "is".)

(c) How did experiment 3 differ from experiments 1 and 2? (Hint: Was it a judgment task?) How did this impact children's ability to compute implicatures with epistemic modals? Was there any difference between adult performance on child performance? (Hint: Think about the Negative trials. How did children do?)

(d) Given the different performance across the three experiments, what does this tell us about the impact of the specific task/scenario on children's ability to compute these kinds of implicatures?

(20) Consider the Stiller, Goodman, & Frank 2015 study.

(a) What kind of implicatures were children required to compute? (Hint: Were these generalized or particularized/ad-hoc?) How did these implicatures differ from standard scalar implicatures, like those involving *some* vs. *all*?

(b) Why did Stiller et al. 2015 use a control "No Label" condition?

(c) What was the youngest age children were able to reliably compute the kind of implicature investigated in this study?

(21) Consider the Brandone, Gelman, & Hedglen 2015 study.

(a) What is an example of a generic statement? How do adults typically interpret generic statements? Are generic statements more or less complex for adults to interpret than statements involving quantifiers like *all*, *most*, or *some*?

(b) At what age do children seem to have an adult-like sense of how prevalent a property has to be in order for a generic statement to apply?

(c) Based on this study, does it seem like eight-year-olds understand that *some* and *most* are inappropriate to use if something occurs 100% of the time? (That is, can they compute the scalar implicature, based on the Maxim of Quantity?) What about four-year-olds?

(d) How does the adult interpretation of generic statements differ from four-year-old and eight-year-old interpretations of generic statements? (Hint: Do adults treat generics similarly to any other quantifier? What about four-year-olds and eight-year-olds?)

**Extra Material (you're not responsible for this)**

(E1) Terms to know: Maxim of Quality, Maxim of Manner, Maxim of Relevance/Relation

(E2) Is there any evidence that the way children learn the meaning of adjectives is consistent with Bayesian inference?

(E3) How is the Maxim of Quality used for interpreting statements involving sarcasm, metaphor, and hyperbole? (Hint: Think about what the Maxim assumes about the speaker with respect to being truthful.)

(E4) How do advertisers use the Maxim of Relevance/Relation to their benefit? (Hint: Think about what a listener assumes about a speaker for the Maxim of Relevance/Relation.)

(E5) What evidence do we have that children as young as three years old can use the Maxim of Relevance to compute implicatures?