Psych156A/ Ling150
Spring 2010
Review Questions: Poverty of the Stimulus

(1) Terms/concepts to know: set, subset, superset, poverty of the stimulus, impoverished data, prior knowledge, auxiliary verb, yes/no questions, complex yes/no questions, Subset Problem, Subset Principle, conservative learner, Size Principle

(2) Why is the set of sentences actually in English a subset of the set of sentences that could *possibly* be in English?

(3) Is the set of sentences children encounter while they're forming their mental grammar larger than (a superset of) or smaller than (a subset of) the set of sentences they need to be able to eventually generate as competent speakers of their native language? How do you know?

(4) How can the data that children encounter be considered an impoverished data set?

(5) What does prior (or innate) knowledge accomplish in the poverty of the stimulus argument? What behavior do children need to display in order for prior (or innate) knowledge to be supported?

(6) How do children's performance on complex yes/no questions in English demonstrate constrained generalization in children?

(7) What is the difference between the Subset Problem and the Subset Principle?

(8) Consider the following three sentences:

    (i) The king will turn into an owl.
    (ii) The king will turn into an owl which can fly away.
    (iii) The king who can fall in love will turn into an owl.

    (a) For each of the rules below, indicate the yes/no question that would be created from each of these sentences (i-iii) by using that rule.
    - "move the third word to the front"
    - "move the fourth word to the front if it's a verb or auxiliary verb"
    - "move the first auxiliary verb to the front"
    - "move the last auxiliary verb to the front"
    - "move the main clause auxiliary verb to the front"

    (b) For each sentence (i-iii), indicate which of the rules listed in part (a) actually produced the correct yes/no question for English.

    (c) Which rule(s), if any, work(s) for all the sentences (i-iii)? Is this the rule that young children seem to use, according to Crain & Nakayama (1987)?

(d) Which of the rules in (a) would be classified as structure-dependent?

(e) Suppose that children only encounter simple yes/no questions (such as "Will the king turn into an owl?"). Why would it be difficult for them to decide that yes/no questions in English are formed with a structure-dependent rule? (Hint: consider your answers to (a)-(d).)

(f) Why do the results from Crain & Nakayama (1987) support the idea of children having prior knowledge about yes/no question formation rules, assuming children only encounter simple yes/no questions like the one in (e)?

(9) Why did the control condition in the first Gerken (2006) experiment train children on data that was only compatible with the more-general generalization? That is, in what sense was this a control for the experimental condition in the first experiment?

(10) Which generalization did Gerken (2006) find that children prefer when they are given data compatible with multiple generalizations?

(11) Why is the Size Principle that a Bayesian learner uses compatible with the Subset Principle?