

Review Questions: Biological bases of language acquisition

1. **Terms/concepts to know:** pidgin, creole, homesign, Nicaraguan Sign Language, Language Bioprogram Hypothesis, critical period, sensitive period, deaf-of-hearing children, deaf-of-deaf children, “less is more” hypothesis, syntax,
2. What is one way we know that language isn’t simply a “cultural” habit passed on from person to person? (Hint: Think about cases where there’s no person to learn it from.)
3. Why are creoles informative about what prior knowledge children may have about language acquisition while pidgins generally aren’t?
4. On the fictitious island of the Guins, suppose that several immigrants from different language and cultural backgrounds have come to live and work together. Suppose that you noticed that there was now a common language comprised of lots of other language parts, and this common language was spoken by all of the adult immigrants. Meanwhile, a different (though related) language was spoken by the children of the immigrants. Which language (that of the adults or that of the children) would be termed a pidgin and which would be termed a creole? Why? Whose language (that of the adults or that of the children) would you expect to be more grammatically complex?
5. What are some similarities in the signing abilities of homesigners and those of adult sign systems? (Hint: Consider the complexity of finger groups they use to communicate different concepts and their combinatorial abilities.)
6. What are some differences between the signs used by homesigners, compared with their caretakers? Why does this suggest that homesigners are adding something to the linguistic system that wasn’t present in their input? Could this evidence be compatible with the Language Bioprogram Hypothesis? What about with the alternative hypothesis that involves only non-linguistic innate knowledge or abilities?
7. What are some ways researchers measured the structural complexity of the language of signers learning Nicaraguan Sign Language?
8. Is the Language Bioprogram Hypothesis more in line with a nativist or an empiricist viewpoint? What about a generativist/linguistic nativist vs. a constructionist/non-linguistic nativist viewpoint? How do you know?
9. Does creolization necessarily indicate that there is domain-specific knowledge about language? Why or why not?
10. Why aren’t wild children a clear demonstration of a critical or sensitive period for language?
11. When Genie was tested, it was found that language was a right-hemisphere activity for her. How does this compare with native speakers’ neural activity? How did Genie’s language ability compare to that of native speakers?
12. What are deaf-of-hearing children? Why are they a better case study for language’s critical period than Isabelle and Genie?

13. How do we know that language ability isn't just about how long you've known a language? What evidence do we have from deaf signers? What about from second-language learners? (Hint: Think about how age of exposure affects ASL acquisition, particularly of the syntactic components.)
14. How does testing second language speakers help us decide whether there's a critical/sensitive period for language development? Do all language components have the same critical/ sensitive period? (Hint: Are there different levels of performance for different components? Think about phonological, morphosyntactic, and syntactic knowledge vs. lexical knowledge.)
15. What evidence from fMRI and ERP studies is there to suggest a neurological basis for a critical/sensitive period?
16. According to research by Hartshorne and colleagues, how long does it seem to take native language learners to reach full proficiency? How might this affect learners who start learning a language later than birth (though still within the critical/sensitive period)? (Hint: Think about how much time to learn in the critical/sensitive period that a person learning from birth has, compared to a person who started learning from early childhood.)
17. According to the research by Hartshorne and colleagues, is there a difference in the potential critical/sensitive period age cutoff for immersion learners (who are immersed in the language constantly) vs. non-immersion learners (who aren't immersed constantly)?
18. What kind of performance trajectory do we expect from language learners if there is a critical period for language? What about if there is a sensitive period?
19. What is the "less is more" hypothesis, in relation to language-learning? Why might it be counterintuitive, given children's cognitive abilities and adults' cognitive abilities?
20. What experimental evidence is there supporting the "less is more" hypothesis? How was the "less" implemented in each case? (Hint: The "more" was better language learning performance. "Less" could be about how the input was structured or how much attention a learner paid to the input. For example, passive listening means not really paying attention to the input that much.)
21. According to Hudson Kam (2017), does just any manipulation of the input that makes the input more like what children would encounter help adults learning a language? (Hint: Think about learning sounds and meanings together vs. learning sounds first and learning meanings later on. Which is more infant-like? Did this change help adults?)
22. Do any non-human primates show evidence of a combinatorial system for combining their calls? If so, is it as complex as human syntax?
23. Do any non-human primates show evidence of pragmatic reasoning, the way humans do when they have conversations? (Hint: Think about implicatures.)
24. Does a honeybee's waggle dance have syntax similar in complexity to human syntax? What about the variety of meanings that the dance can express – how does that compare to human language?
25. In what way is birdsong similar to human language with respect to syntax (the combinatorial system)? In what way is it different?
26. What is one reason researchers initially thought that chimpanzees were more able to learn a signed human language than a spoken human language? (Hint: Think about the physical process of producing spoken language sounds.) What evidence do we have that this probably isn't true? Are there known differences between the vocal productions humans vs. other primates are capable of? (Hint: Think

about what you need to be able to do in order to stress different words in an otherwise identical utterance.)

27. Nim Chimsky was able to create combinations of signs. Were these likely the result of a productive combinatorial system or were they likely just memorized chunks?
28. What was the difference in Matata's and Kanzi's language training? Who succeeded better at learning language? Why was this the case, and how does this relate to the critical/sensitive period of language acquisition?
29. What is a linguistic nativist idea about why other primates like Kanzi may be unable to learn human languages as well as human children learn them? What about a non-linguistic nativist idea?