

*INTD0111A/ARBC0111A: The Unity and Diversity of Human Language*

*Assignment #1 solutions*

**Exercise #1: So, what are we missing?**

Consider this implicational universal:

- (1) “If a language has noun before demonstrative, then it has noun before relative clause.”

Just to remind you, demonstratives are words like “*this*” and “*that*” in English phrases such as “*this book*” and “*that girl*”. Relative clauses are clauses which modify a noun (i.e., add information about the noun), and in English are typically introduced by relative pronouns such as “*who*” and “*which*” (e.g., the bracketed material in “*the man [who your sister dated]*” and “*the book [which your father wrote]*” are relative clauses). Now, given the universal in (1), **answer questions A, B, and C below**:

- A. First, construct a table of the possible and impossible types of human languages predicted by this universal, along the lines we did in class for other language universals. (5 points)

Language Type	N before Dem	N before Rel	Prediction?
<b>A</b>	<b>Yes</b>	<b>Yes</b>	<b>Possible</b>
<b>B</b>	<b>No</b>	<b>Yes</b>	<b>Possible</b>
<b>C</b>	<b>No</b>	<b>No</b>	<b>Possible</b>
<b>D</b>	<b>Yes</b>	<b>No</b>	<b>Impossible</b>

**where N = Noun; Dem = demonstrative; Rel = relative clause.**

- B. After you’ve constructed the table, consider the data in (2-4) from the three different languages named “*alpha*, *beta*, and *gamma*”, and then match each language to the corresponding “type” in the table you created in answering question A. Make sure you explain your choice by providing supporting evidence from the data. (10 points)



**Exercise #2: Which way is your language headed?**

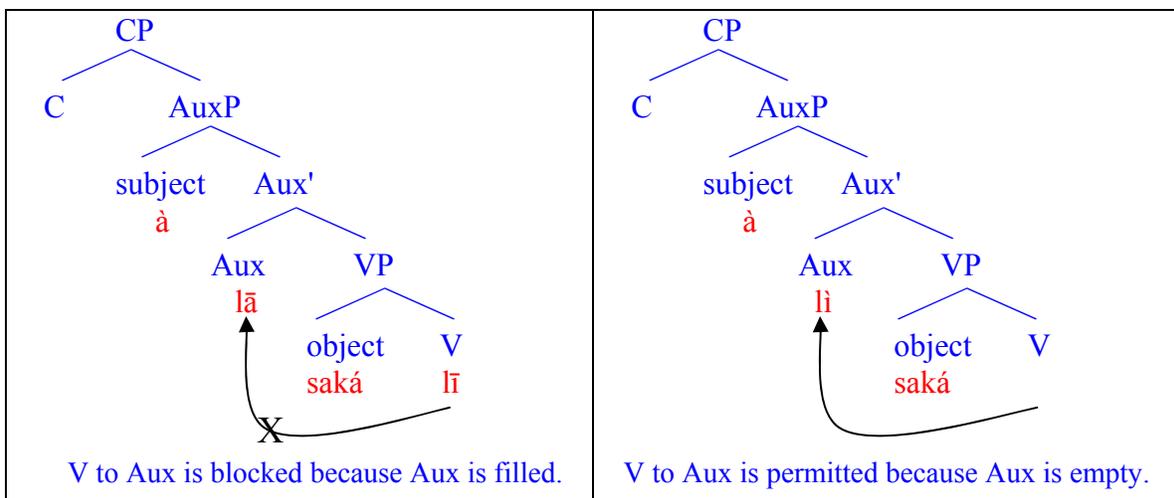
Consider the following examples from a West African language (to remain anonymous until I post the solutions): [Well, meet Vata, a Kru language.](#)

- (5) a. à lā saká lī  
 we have rice eaten  
 “We have eaten rice.”  
 b. à lì saká  
 we eat rice  
 “We eat rice.”

As you can see from the two sentences above, the position of the verb with regard to the object varies in this language: sometimes the verb follows the object NP (as in 5a), sometimes it precedes it (as in 5b). Now, **answer questions A, B, and C, below:**

- A. Suppose we assumed that this is a head-final language, how can we analyze the contrast between (5a) and (5b) now? Additionally, does this language pose any problems for the parametric approach as explained in class and discussed by Baker in your textbook? (10 points)

If this is a head final language, then the position of V in (5a) is not problematic, since it follows the object. However, (5b) is now a problem, since V appears initial within the VP. A way out of this paradox is to assume that the language has a positive setting for the verb attraction parameter, such that V raises to Aux. If so, then the head-initial positioning of V in (5b) is due to V moving to Aux. Verb attraction to Aux (5a), by contrast, is blocked because Aux is already filled with the auxiliary “lā”, hence V remains inside the VP and appears final, as predicted by the head-final setting for the directionality parameter. That pretty much resolves the paradox in the sentences in (5).



BUT, if this were a head-final language, why is it that Aux precedes V, then? This means that this language is inconsistent in its head directionality, an obvious problem to the parametric approach.

- B. Suppose, instead, we assumed that this is a head-initial language, how can we analyze the contrast between (5a) and (5b) now? Do the problems (if any) associated with the first solution still hold? (10 points)

If this is a head-initial language, then (5b) is expected, and the position of Aux is no longer a problem, either. BUT (5a) is now a problem: Why does V appear final there? To solve this problem, we have to assume that somehow when there is an auxiliary in the sentence, the object must move between Aux and V. Nothing that we said in class can get us that, which makes the head-initial approach more problematic. To make the movement of V dependent on whether Aux is empty or filled makes sense given what we learned about verb attraction. But to make the movement of an object NP dependent on whether Aux is empty or filled is much harder, since we did not talk about an object attraction parameter, for example. The analysis is still viable, but not given what we learned up that point.

- C. Looking now at the solutions from Questions A and B to the contrast in (5), which one do you prefer? Why? (5 points)

Both solutions are obviously problematic, but assuming that the language is verb-initial seems more problematic, because it has to tie the presence of an overt auxiliary in the sentence with the position of the object, a relationship that is not quite easy to establish. The verb-final analysis, by contrast, derives word order by making a relationship between the presence of an overt auxiliary and the position of the verb, which is quite attested in other languages, as we have seen when we were discussing Welsh in class. Of course this analysis still faces the problem of why Aux appears before the verb. A potential way out might be to assume that head directionality is set differently for different heads, a problematic assumption, as we'll discuss rather elaborately in the solution to Exercise #5. So, maybe the language is head-initial, except within the VP (we need further data from NPs, PPs, CPs, etc.). Then, we would hope that the "mixed" directionality of Vata can be traced to some functional explanation, such as history or Vata's contact with some verb-final neighboring languages.

***Exercise #3: Relentless parents or relentless children?***

As you should've noticed, the "cognitivist" approach to language acquisition that we discussed in class stands in contrast to the "behaviorist" approach of the early half of the 20<sup>th</sup> century, which assumed that human beings are born "blank slates" and that language is learned in a response-to-stimulus fashion, coupled with reinforcement. Consider the following child-parent exchanges, and then answer the question that follows:

***Exchange #1 (from McNeill 1966):***

Child: Nobody don't like me.  
Parent: No, say 'nobody likes me.'  
Child: Nobody don't like me.  
    [repeats eight times]  
Parent: No, now listen carefully; say 'nobody likes me.'  
Child: Oh! Nobody don't likes me.

***Exchange #2 (from Braime 1971):***

Child: Want other one spoon, daddy.  
Parent: You mean, you want the other spoon.  
Child: Yes, I want other one spoon, please Daddy.  
Parent: Can you say 'the other spoon'?  
Child: Other...one...spoon  
Parent: Say 'other'  
Child: Other  
Parent: 'Spoon'  
Child: Spoon  
Parent: 'Other spoon'  
Child: Other...spoon. Now give me other one spoon?

***Question***

How do these child-parent exchanges bear on the cognitivist-behaviorist debate? Explain your answer. (15 points)

These two exchanges show how children are not attentive to correction of their linguistic behavior. Any theory that claims that children learn through reinforcement will fail to explain why children simply do not pay attention to instruction from their parents. Under a cognitivist approach, this is expected, since the child is assumed to be trying to figure out a mental grammar for their language on the basis of primary linguistic data. Correction to their linguistic behavior will be received with resistance, since at every stage in language acquisition the child is simply assuming that he/she is using the correct grammar. So, their lack of attentiveness to correction from their parents is quite expected.

A behaviorist might contend that these errors might be due to a problem in children's production ability; somehow, children are not "adult" enough to get it right from the first time. But even under that assumption, you got to believe that when corrected, children should respond well. But what we see here is adamant children who just won't give way to correction of their speech. Under the cognitivist approach, this really has nothing to do with children's production ability. Children simply do NOT think they are making a mistake. The forms they produce at this state of language acquisition are part of their grammar, and they won't change them until further input in the PLD urges them to do so. Interestingly, direct instruction by parents (which very rarely happens anyway) just does not count as an instance of this input. Amazing!

**Exercise #4: Does Harry believe that Sam likes zibun?**

In class we discussed how English and Japanese differ with regard to basic word order. Another difference between these two languages appears in sentences with *anaphors*, i.e., elements such as reflexive pronouns in English (e.g., *herself*, *themselves*), and *zibun* (=“self”) in Japanese, whose interpretation requires the presence of a preceding NP in the sentence. The interpretation of anaphors, however, seems to differ in the two languages, as the two sentences in (6a) and (6b) below illustrate (**Very important Note**: To indicate co-reference between an anaphor and an NP in the sentence, linguists typically use identical subscripts on both, as in *Mary<sub>i</sub> likes herself<sub>i</sub>*):

English:

(6) a. John<sub>i</sub> said that Bill<sub>j</sub> hates himself<sub>\*i/j</sub>.

Japanese:

b. Satoo<sub>i</sub>-ga Tanaka<sub>j</sub>-ga zibun<sub>i/j</sub>-o nikunde-iru koto-o hanasita  
 Satoo-SU Tanaka-SU self-OB hates fact-OB said  
 “Satoo<sub>i</sub> said that Tanaka<sub>j</sub> hates him<sub>i</sub>/himself<sub>j</sub>.”

**(Important Note**: Don't forget that an asterisk indicates ungrammaticality, which in these examples would mean the unavailability of a certain interpretation for the anaphor.)

**Now, answer questions A, B, and C below:**

A. First, state in your own words what kind of difference exists between English and Japanese on the basis of the two sentences in (6a) and (6b)? (5 points)

Reflexive pronouns in English are interpreted as coreferential to the closest NP, whereas *zibun* in Japanese can be coreferential with any NP in the sentence.

- B. Second, suggest a parameter for anaphor interpretation that would distinguish English and similar languages (e.g., Arabic) from Japanese and similar languages (e.g., Korean). (5 points)

“In some languages reflexives are interpreted as coreferential with an NP within the smallest clause in which the reflexive occurs; in other languages, reflexives are interpreted as coreferential to any NP in the sentence.”

- C. Third, on the assumption that children have access only to “positive evidence” but not to “negative evidence” in the primary linguistic data (that is, they have access to which anaphor interpretations are possible in their language, but they do not have access to which anaphor interpretations are impossible), how do you think children acquiring English and Japanese manage to correctly set the value of the parameter you suggested in your answer to B above? (*Hint*: Do you think it is feasible to assume that kids start with one setting and then change it later? If so, which setting would they start with in this case, the English setting or the Japanese setting? Why?) (10 points)

Children hear sentences around them, but these do not come labeled as grammatical or ungrammatical, hence, they have to figure out the setting of parameters on the basis of positive evidence only. So, if a child learning English set the anaphor interpretation parameter to the Japanese setting, then there is no way for the child to re-set that parameter, since every reflexive interpretation in English is compatible with that Japanese setting, given that the English setting is a “subset” of the Japanese setting.

By contrast, if the child learning Japanese starts with the more restrictive English setting, they can later on re-set the parameter to the Japanese setting on the basis of “positive evidence” in the primary linguistic data, in which the reflexive is interpreted as coreferential with an NP outside the smallest clause. So, from a learnability perspective, it makes more sense for children to start with the more restrictive setting, both in English and in Japanese. English-learning children will never change that setting, since English does not allow reflexives to be interpreted outside the smallest clause. Japanese-learning children, however, will change the setting once they encounter data in which a reflexive is interpreted as coreferential with an NP outside the smallest clause. This is called the “Subset Principle” in language acquisition, by the way.

**Exercise #5: Can you speak Japenenglish?**

The analysis of word order variation in human languages in terms of the head directionality parameter that we discussed in class worked well for English and Japanese. Unfortunately, things are not as neat as we would have wanted. Japenenglish-type languages do actually seem to exist. Two of these languages are German and Dutch (and perhaps the anonymous language from *Exercise #1*). First, consider the data in (7) and (8), from German and Dutch, respectively:

- (7) a. Hans schlug den Ball  
Hans hit the Ball  
“Hans hit the ball.”
- b. Schlug Hans den Ball?  
hit Hans the Ball  
“Did Hans hit the ball?”
- c. Ich denke daß Hans den Ball geschlagen hat  
I think that Hans the Ball hit has  
“I think that Hans hit the ball.”
- (8) a. De kat drinkt melk  
the cat drinks milk  
“The cat drinks milk.”
- b. Waarom drinkt de kat melk?  
why drinks the cat milk  
“Why does the cat drink milk?”
- c. Ik zie dat de kat melk drinkt  
I see that the cat milk drinks  
“I see that the cat drinks milk.”

**Now, answer questions A and B below:**

- A. How does the data above pose a problem for the head directionality (HD) parametric approach? In light of all the parameters that we discussed in class, what is a possible way to account for the German and Dutch data without being forced to abandon the HD parameter altogether? (10 points)

The problem should be obvious: The verb in German and Dutch occurs before the object sometimes, and after the object in other times, which is unexpected if every language has a *uniform* head directionality. The good news, though, is that we know there is another parameter relevant to German (and also to Dutch) that affects the position of the verb, that is, the V2 parameter, which forces V to move all the way up to C. If so, then the

paradox in head directionality of the verb disappears: German and Dutch would be head-final languages, as can be seen in (7c, 8c), with the “surface” head-initial positioning of V resulting from verb attraction to C. Why does V and Aux remain final in embedded clauses? Because C is already filled with the complementizer, and, therefore, verb attraction is blocked. The interaction of the two parameters of head directionality and V2 thus hides the “underlying” directionality of the language.

While this solves the paradox with regard to V and Aux, a problem arises with the directionality of C. Obviously, German and Dutch C has to occur initially in clauses. It seems then that we have a similar case of mixed directionality, like the one we noticed in Exercise 2 with Vata.

B. Now, given your solution from A, consider the further data in (9a) and (9b) from German and Dutch, respectively:

- (9) a.      auf dem Tisch  
              on the table  
      b.      op de berg  
              on the mountain

Does the solution you arrived at in A above still hold? If not, can you think of another solution that is still compatible with the HD parameter? If you do, what kind of problem(s) (if any) would that solution entail to the parametric approach?

(10 points)

The solution does not hold, since now we see that both languages are head-initial when it comes to PPs (in addition to CPs). A possible solution is to assume that the head directionality parameter is set at the category-level, such that different categories can have different directionality settings within the same language. For German and Dutch, VP and AuxP would be head-final, while CP and PP would be head-initial. You should see how problematic this would be for our theory. For one thing, it makes the child’s task far more complex than if all heads have the same directionality setting. Second, it also predicts a wider range of languages, most of which would be unattested (for example, a language which is the opposite of German and Dutch, head-initial in VP and AuxP, but head-final in CP and PP).

So, as you can see, languages with “mixed” directionality will always be a problem for the head directionality approach. Is there a way out? One possibility is to assume that German and Dutch are actually head-initial and that the final positioning of V and Aux are only “surface” effects due to change in the basic word order (say because of “massive” movement). A more radical approach would be to deny the existence of the head directionality parameter altogether, and assume instead that all human languages have one uniform basic word order (SVO for people who believe in this approach), and that certain movements result in all the attested word orders in human languages. While this approach might account for German and Dutch, it does so only at the expense of complicating sentence structure in head-final languages like Japanese. And while it’s an interesting proposal, I’m afraid we won’t have time to discuss it in this class.