THE REALITY OF LINGUISTIC RULES

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Extraction Restrictions, Competing Theories and the Argument from the Poverty of the Stimulus

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1. Introduction: The logical problem of language acquisition[1]

The question "do children learn language?" has two answers, an obvious one and a not-so-obvious one. The obvious answer is "yes, children learn language. After all, they are not born speaking any particular language, and therefore it is obvious that they learn the language of the speech community into which they are born."

But there is another way to interpret this question, one which potentially leads to a very different answer. Within Chomskyan theory, the term "language" takes on a rather narrower meaning than is presupposed in the question above. For Chomsky, "language" is not the issue; grammar is. He has remarked, for example, "The study of generative grammar in the modern sense [...] was marked by a significant shift in focus in the study of language. To put it briefly, the focus of attention was shifted from 'language' to 'grammar'"(1981: 4), and "The shift of focus from language (an obscure and I believe ultimately unimportant notion) to grammar is essential if we are to proceed towards assimilating the study of language to the natural sciences." (*ibid*: 7). So from a Chomskyan perspective, the question must be reformulated as "Do children learn grammar?". The answer to the question is far from obvious. For many linguists and psycholinguists, the answer is "no, children do not learn grammar."

The purpose of this paper is to explore the primary argument that is given in support of this answer, namely the **argument from the poverty of**

the **stimulus**, and the conception of language acquisition in which it is situated, namely **the logical problem of language acquisition** [LPLA]. Chomsky repeatedly refers to what he calls "Plato's problem", i.e. how can we know so much on the basis of so little experience (cf. e.g Chomsky 1986). The logical problem may be formulated as follows: given an account of adult grammatical competence (what Chomsky calls the "final state" of the organism), we may deduce the initial state of the language acquirer by factoring out what is supplied by experience. This may be represented graphically as in (1).

(1)   Final knowledge state (= Adult grammatical competence)
       – Input from experience
       = Initial knowledge state (= Language Acquisition Device [LAD])

If there is some element of the final knowledge state which is not attributable to experience, then it must be part of the initial knowledge state or LAD; this is the argument from the poverty of the stimulus [AFPS].[2] Since a child can learn any human language, the LAD is in effect a theory of universal grammar [UG]. Thus it follows, as Chomsky has long maintained, that a great deal about UG can be discovered through the study of a single language by means of this scheme.

The AFPS is in effect an argument that a particular rule, principle or constraint is "psychologically real", because, it argues, the rule, etc. is part of a speaker's innate grammar. There are two crucial presuppositions inherent in (1) which I wish to explore. First, the LPLA in (1) presupposes an accepted, widely agreed-upon account of the final knowledge state. This is important because the account of the linguistic phenomena in question determines both the nature of the cognitive constructs to be posited and the nature of the evidence that can bear on their potential learnability. The theory underlying the account specifies the nature of linguistic knowledge, and different theories make very different claims about how that knowledge is instantiated formally. So, for example, Principles & Parameters theory treats X-bar-type constituent structure representations as basic, as does Generalized Phrase Structure Grammar, while Relational Grammar and Lexical-Functional Grammar treat grammatical relations like "subject" and "direct object" as primitive and central to grammar. Role and Reference Grammar (Van Valin 1993), on the other hand, rejects both X-bar-type constituent-structure representations and grammatical relations and relies

instead on semantic roles, pragmatic functions and a semantically-motivated theory of clause structure. These contrasts in turn define the type of evidence that could be relevant to the acquisition of grammar. If the phenomena in question are analyzed strictly in terms of constituent-structure configurations, then evidence regarding constitutent structure will be relevant; if, on the other hand, the phenomena are analyzed strictly in terms of grammatical relations, then evidence relating to grammatical relations will be crucial. The main point is that given competing characterizations of grammatical competence, the AFPS cannot decide between them; rather, it can only provide an argument as to the status of some construct within a particular scheme. Thus as long as there are competing accounts of the phenomena in question, the AFPS can tell us little about the LAD.

The second presupposition in (1) concerns the nature of the learning theory that is assumed in the "input from experience." A critical assumption is the no-negative-evidence hypothesis, i.e. the claim that children are not exposed to any ill-formed strings labelled as such and are forced to generalize only from positive tokens. That is, it is assumed that adults don't produce ill-formed utterances and then tell the child that they are ill-formed, and they don't correct the child's ungrammatical utterances. This is a strong restriction on the language-learning environment. The actual learning theory that is tacitly assumed is quasi-behaviorist; that is, learning is the result of induction from repeated exposure to phenomena. For example, children acquiring English learn the argument structures of English verbs by hearing verbs in sentences together with nouns functioning as subject, direct object, and indirect object (however these may be conceived in a given theory) and come to associate the patterns of nominal complements with particular verbs. It is generally assumed that whatever is actually learned in acquisition is learned through direct exposure to the relevant tokens. These assumptions lead inevitably to the characterization of the language-learning environment as "severely impoverished", and this in turn leads to the standard conclusion that the initial knowledge state must be very rich and complex.

2.   Extraction restrictions

I would now like to explore a detailed example of the AFPS and the implications of competing theoretical analyses for it. These phenomena are widely

considered to be one of the most compelling arguments for Chomsky's position: namely, the constraints on the formation of wh-questions and related constructions known as **island constraints**. These restrictions are well established from Ross' seminal work in this area (Ross 1967). Due to space limitations, I will deal only with the phenomena subsumed by Ross under the "Complex NP Constraint" [CNPC]. The basic facts from English are presented in (2).[3]

(2) a. *Max believes [s that Susan lost her wallet].*
     b. *What does Max believe [s that Susan lost __]?*
     c. *Max believes [NP the claim [s that Susan lost her wallet]].*
     d. **What does Max believe [NP the claim [s that Susan lost __]]?*
     e. *Fred talked to [NP the man [s who bought the house down the street]].*
     f. **What did Fred talk to [NP the man [s who bought __]]?*

In (2b) the direct object of the verb in the complement clause appears as a wh-word at the beginning of the sentence; the result is a grammatical question. In (2d), on the other hand, the wh-word is the direct object of the verb in a sentence which is a complement to a nominal head (*the claim*), and the result in this instance is an ungrammatical question, despite the near synonymy of (2a) and (2c). This semantic similarity, it is argued, shows that the ill-formedness of (2d) cannot be attributed to semantic or other non-structural factors. Ross proposed the CNPC, which states, roughly, that an element cannot be moved out of a sentence which is embedded under a lexical head noun; the relevant structural configuration is represented in Figure 1.

Since Chomsky (1973), the CNPC has been subsumed under the more general principle of subjacency, which has gone through a number of reformulations. In essence, it states that no element can move across more than
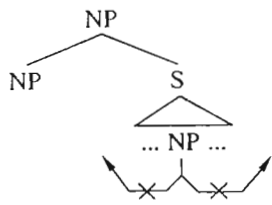

Figure 1. Complex NP Constraint (Ross 1967)

two bounding nodes (or, in more recent versions, barriers), where NP and s are bounding nodes (in English). Given this characterization of the phenomena, the existence of subjacency effects in a language has been taken as a diagnostic for wh- or NP-movement in a language. That is, since subjacency violations are caused by movement across bounding nodes, then the existence of subjacency effects is evidence for movement.

It is difficult to imagine how an abstract restriction like subjacency could be learned. First, it appears to be a purely structural restriction with no semantic or other non-structural basis, as noted above. Second, since it is an instance of a *systematic non-occurrence* of a logically possible phenomenon rather than a systematic occurrence of some phenomenon, this otherwise unmotivated restriction could not be induced from the data to which the child is exposed. Moreover, adults do not produce utterances like (2d,f) and then tell children that they are ill-formed and that one doesn't produce sentences like them. The apparent impossibility of learning subjacency, combined with the virtual universality of the restrictions, seems to point unequivocally to the conclusion in terms of the LPLA in (1) that subjacency must be part of the LAD, following the AFPS. In addition, it is difficult to imagine how such a restriction could be applicable to other areas of cognition, and consequently this principle appears to be uniquely linguistic and not derivative of a general cognitive principle of any kind.

This conclusion apparently receives further support when we look at languages of a different structural type. In Lakhota (Teton Dakota, a Siouan language of North America) questions are not formed syntactically; that is, there is no subject-auxiliary inversion or movement of wh-words to sentence-initial position, as in English. The basic Lakhota facts are illustrated in (3).

(3) a. *Šųkmánitu-thąka ob   wachí Napé nąží-wi   čąxíye*
         coyote-big   with dance hand stand-FEM love
         yelo.
         DEC (Male spkr.)
         'Dances-with-wolves loves Stands-with-a-fist.'
     b. *Šųkmánituthąka ob wachí Napé nąžíwi   čąxíya he?*
         Dances-with wolves   Stands-with-a-fist loves Q
         'Does Dances-with-wolves love Stands-with-a-fist?'

c. *Šųkmánituthąka ob wachí tuwá   čąx̨íye*
   Dances-with-wolves   who/someone love
   yele.
   DEC(Fem. spkr.)
   'Dances-with-wolves loves someone.'

d. *Šųkmánituthąka ob wachí tuwá   čąx̨íyą he?*
   Dances-with-wolves   who/someone love   Q
   'Who does Dances-with-wolves love?', or 'Does Dances-
   with-wolves love someone?'

e. *Tuwá   Šųkmánituthąka ob wachí čąx̨íyą he?*
   who/someone Dances-with-wolves   love   Q
   'Who loves Dances-with-wolves?', or 'Does someone love
   Dances-with-wolves?'
   *'Who does Dances-with-wolves love?'

Basic word order is SOV, as illustrated in (3a). In order to form a yes-no question, the question particle *he* is added at the end of the sentence, as in (3b); no other change is made in the structure of the sentence. WH-words double as indefinite-specific pronouns; when one occurs in a sentence without a question particle, as in (3c), it means 'someone' (*tuwá*) or 'something' (*táku*). When there is a WH-word and a question particle, as in (3d), the result is ambiguous: if the WH-word is the focus of the question, then the sentence is interpreted as a WH-question, whereas if the focus falls elsewhere in the sentence, then the sentence is interpreted as a yes-no question with an indefinite-specific pronoun.[4] An important feature of Lakhota WH-questions is that the question word does not move to initial position but rather remains *in situ*. This can be seen clearly in (3d,e); in (d) *tuwá* does not move from the preverbal object position, while in (e) the sentence-initial *tuwá* can only be interpreted as the subject, not as the object.

Since there is no movement of WH-words in Lakhota, it might be expected that the language would not show subjacency effects, if in fact these effects are caused by movement of elements across specified structural configurations (cf. Figure 1). Yet this is not the case, as the sentences in (4) show.

(4) a. *Wičháša ki [NP[S šų́ka wą igmú óta   wičháyaxtake]*
        man   the [NP[S dog a cat   many bite   ]
        ki le] wąyą́ke.
        the this] saw
        'The man saw the dog which bit many cats.'

b. *Wičháša ki [NP[S šų́ka wą táku   yaxtáke]*
   man   the [NP[S dog a *what/something bite]
   ki le] wąyą́ka he?
   the this] saw   Q
   '*What did the man see the dog which bit __?'
   'Did the man see the dog which bit something?'

Lakhota relative clauses have no external head noun, unlike their English counterparts; the NP which is interpreted as the head must be indefinite within the embedded clause, its true definiteness status being indicated by the article + demonstrative combination at the end of the whole construction. In a definite restrictive relative clause like (4b) the object NP in (4a), *igmú óta* 'many cats,' is replaced by *táku* 'what,' and the question particle *he* is added to make the sentence a question. The result is a well-formed question, but it can *only* be interpreted as a yes-no question; it cannot be interpreted as a WH-question, as the glosses indicate. The impossibility of the starred reading is a subjacency effect, and this shows that subjacency operates in the grammar of languages in which WH-words do not move to the beginning of the sentence in a question.

At first glance, this would seem to be a serious problem for the theory: how can there be subjacency effects if the WH-word does not move across the specified structural configurations? The answer, originally proposed in Huang (1981), is that *there is movement* in languages like Lakhota but only at an abstract, non-overt level; that is, the movement rule Move α applies not between D-structure and S-structure, as in English, but between S-structure and the abstract level of L[ogical] F[orm], as illustrated in Figure 2.

Recall that subjacency is a diagnostic for movement, and the existence of subjacency effects in a language show that there must be movement rules applying in the grammar. Thus in Lakhota subjacency applies only to abstract movement, while in English it applies to overt movement. This analysis of (4b) has profound implications for the LPLA: it is simply not logical.
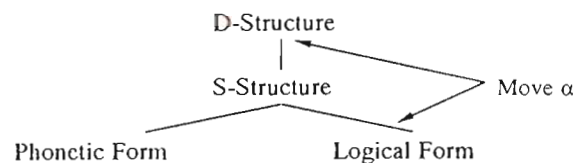

Figure 2. Application of movement rules in government-binding theory

ically possible for a child to learn a constraint on movement in a language in which there is no overt evidence of movement in the first place, following the AFPS. Hence the existence of subjacency effects in a language like Lakhota seems to provide very strong support for the conclusion that subjacency must be a principle of the LAD, and it is a textbook case of the AFPS.

3. An alternative account

A crucial piece of the logic underlying the analysis of extraction restrictions in a language like Lakhota is the assumption that the existence of subjacency effects in a language is a diagnostic for movement. The reasoning goes as follows: the theory states that subjacency effects are caused by the movement of elements across a proscribed number of bounding nodes in languages like English, and therefore if these effects are found in a language, then there must be movement in the grammar. This account is clearly derived from the analysis of languages like English with overt movement in the grammar and extended to languages without overt movement. Let us take a look at this issue from a slightly different perspective. Both English and Lakhota show subjacency effects; English has overt WH-movement, while Lakhota does not. One could conclude, then, that movement is in fact *irrelevant* to the phenomena in question and is only a feature of languages of a particular word-order type, and that the source of the restrictions lies elsewhere. What I wish to explore in this section is this alternative interpretation and what the source of the restriction could be, if we ignore WH-movement. It is necessary to look at Lakhota again, since it lacks WH-movement. It is then necessary to see if the analysis can be extended naturally to languages with WH-movement.

The place to begin the investigation is yes-no questions, a phenomenon which has not been thought to be relevant to the issue of extraction restrictions, since it involves no movement of a question word or the like. Are there constraints on the interpretation of yes-no questions comparable to the one exemplified in (4b)? In (5), the possibilities for interpreting yes-no questions containing complex embedded structures is illustrated.

    (5)   a. [_S*Hokšíla etą̇   thaló ki manúpi*] *iyúkča he?*
                boy   some meat the steal   think   Q
                'Does he think some boys stole the meat?'

        — *Hiyá, wičhį́čala eyá.*
          no   girl   some
        'No, some girls.'

    b. *Wičhášа ki* [_{NP}[_S *šų́ka wą igmú eyá   wičháyaxtake*]
        man   the   dog a cat   some bite
        ki le]   *wąyą́ka he?*
        the this see   Q
        'Did the man see the dog which bit some cats?'
        — *Hiyá, wąyą́kešni.*
          no,   see.NEG
        'No, he didn't see it.'
        — *Hiyá, wíyą   ki (wąyą́ke).*
                 woman the (see)
        'No, the woman (saw it).'
        — *Hiyá, mathó wą (wąyą́ke).*
                 bear   a   (see)
        'No, (he saw) a bear.'
        — **Hiyá, magá eyá   (wičháyaxtake).*
                    duck some (bite)
        *'No, (it bit) some ducks.'

    c. [_S *Wičhášа ki wóte*] *ečhúhą, tha-wíču ki mní*
         man   the eat   while   his-wife the water
        ikíču   he?
        bring.for Q
        'While the man was eating, did his wife bring him water?'
        — *Hiyá, Fred (mní ikíču/*wóte).*
        'No, Fred (brought it to him)', or 'No, she brought it to Fred')
        *'No, Fred was eating.'

The issue is where the focus of the question operator *he* can fall in the sentence. The part of the sentence in which it can fall is called the **potential focus domain** [PFD] of the question operator. It was noted with respect to (3d) that it could fall on different elements in a simple sentence, i.e. either of the NPs or the verb. Thus the entire simple sentence is within the PFD in Lakhota.[5] In the sentences in (5), the distribution of the question focus in complex sentences is shown by means of determining what a potentially felicitous answer to the question could be.[6] In (5a) the embedded clause is

an object complement, and as the potentially appropriate response shows, it is possible for the focus to fall within the embedded clause, since it is felicitous to deny the subject NP of the complement in the response. In (5b) the embedded clause is a relative clause, and here the situation is somewhat more complicated. It is possible for the focus to fall on all of the matrix clause elements, including the NP interpreted as the head of the relative clause, but as the last response shows, it is not possible for an element within the relative clause to be the focus of the question. The last example, (5c), contains an adverbial subordinate clause, and as the range of potential responses indicates, the focus cannot fall within the subordinate clause. Thus while the focus can fall on any major element of the matrix clause, it cannot fall within the embedded clause if it is a relative clause or adverbial subordinate clause. This means that in some constructions part of the sentence is outside the PFD. This is summarized in (6).

(6)   *Summary of potential scope of he: Potential focus domain [in boldface]*
   a.   **[*Hokšíla etą thaló ki manúpi*] *iyúkča*** *he*? (=5a)
   b.   **Wičháša ki** [[*šuka wą igmú eyá wičháyaxtake*] **ki le**] **wąyáka** *he*? (=5b)
   c.   [*Wičháša ki wóte*] **ečhúhą, tha-wíču ki mní ikíču** *he*? (=5c)[7]

It is clear from (5b) that it is impossible to form a yes-no question in Lakhota in which the focus of the question is a non-head element in the relative clause, and this is exactly parallel to the situation found in (4b), in which it was impossible to interpret *táku* 'what/something' as a question word when it was inside a definite restrictive relative clause. It appears, then, that yes-no and WH-questions are subject to the same restriction in terms of the potential scope of *he*. This restriction is formulated in (7).

(7)   **General restriction on question formation**: The element questioned (the focus NP in a simple, direct yes-no question, or the WH-word in a simple, direct WH-question) must be in a clause within the PFD of the question operator of the utterance.

If the element is in a clause within the PFD, then the focus can fall on it, otherwise, not. A definite restrictive relative clause is outside the PFD, and therefore it is outside the scope of *he*.[8] This explains the possible interpretations of the questions in (4b) and (5b). It also predicts that a WH-word/indefinite pronoun like *táku* could be interpreted as a question word in a com-

plement clause but not in an adverbial subordinate clause, and this is correct, as the sentences in (8) show.

(8)   a.   [$_S$ *Tuwá   thaló   ki   manú*] *iyúkča he*?
             who   meat   the   steal   think   Q
             'Who does he think stole the meat?', or 'Does he think someone stole the meat?'
       b.   [$_S$ *Wičháša   ki   táku   yúte*] *ečhúhą,   tha-wíču*
             man   the   *what/something eat   while   his-wife
             ki   mní   ikíču   he?
             the   water   bring.for   Q
             'While the man was eating something, did his wife bring him water?'
             *'What did his wife bring him water, while the man was eating __?'

Tuwá in (8a) can be interpreted as either 'who' or 'someone,' depending on context, whereas *táku* in (8b) can only be construed as 'something,' following the restriction in (7). Thus (7) provides the basis for an account of extraction restrictions in Lakhota which makes no reference to any kind of syntactic movement, either overt or covert.[9]

Can this account be extended to languages like English which have WH-movement and no overt question operator akin to *he*? The first step in answering this question is to recognize that all languages have morphosyntactic or prosodic means for indicating the illocutionary force of an utterance, and therefore it is appropriate to posit an illocutionary force [IF] operator for a language like English, even though it is not an overt morpheme as in Lakhota or Japanese (see Van Valin 1990, 1993). It is also necessary to recognize that not every part of a sentence can be questioned, asserted or denied, just as in Lakhota (cf. e.g. Kempson 1975; Lambrecht 1987; Van Valin 1993); in other words, parts of an English complex sentence may be within the PFD of the IF operator and other parts may not be. This can be seen clearly by noting that the possible interpretations of the English translations of the questions in (5) seem to be subject to the same restrictions as their Lakhota counterparts. This can also be seen in the following examples.

(9)   a.   *After you left the party, did you take Mary to the movies?*
       b.   *Yes.*
             No. (= didn't take Mary, ≠ didn't leave the party)

No, Bill did. (= Bill took Mary, ≠ Bill left the party)
No, Susan.
?*No, before.* (Better: No, it was before we went to the party.)
No, the park. (= went to the park, ≠ after you left the park)

(10) a. *Did Max return the papers which the secretary photocopied to the lawyer?*

b. *Yes.*
No. (= Max didn't return the papers, ≠ the secretary didn't photocopy)
No, Bill did. (= returned the papers, ≠ photocopied the papers)
No, the envelopes.
No, the IRS agent. (= to the IRS agent, ≠ which the IRS agent photocopied)

In these two examples involving an adverbial subordinate clause and a relative clause, the range of possible felicitious responses is restricted in the same way as in the Lakhota yes-no questions. Thus it is clear that there are parts of each sentence which are not in the PFD. The restriction in (7) predicts that wh-question extraction should be impossible out of these structures, and this is indeed the case, as the reader can easily verify (cf. the English translations of (4b) and (8b)).

The restriction in (7) was formulated for Lakhota and refers to the position of the wh-word in a clause within the PFD. For a language like English, however, this wording will not do, because the wh-word uniformly appears in sentence-initial position in a simple, direct wh-question, and therefore it is not the position of the wh- word which is relevant to distinguishing (2b) and (2d). Rather, it is the location of the gap left by the displaced wh-word that is crucial. Hence (7) must be reformulated as (11).

(11) **General restriction on question formation** (revised): The element questioned (the focus NP in a simple, direct yes-no question, or the wh-word or the gap left by a displaced wh- word in a simple, direct wh-question) must be in a clause within the PFD of the IF operator of the utterance.[10]

Thus, we arrive at analysis of these extraction restrictions which is as applicable to languages with overt wh-movement as to those without it.

4. Implications for acquisition

This account of extraction restrictions has interesting implications for language acquisition. In Van Valin (1986, 1993) it is argued that the principle in (11) is ultimately derivable from Grice's Cooperative Principle and the Maxim of Quantity. This Gricean foundation is very important, since these principles are considered to be general principles of rational behavior and are not strictly linguistic in nature. In terms of the phenomena under discussion, it has never been claimed that constraints on the interpretation of yes-no questions are innate or even part of grammatical competence; they could be part of what Chomsky calls "pragmatic competence," which he characterizes as follows:

> [Pragmatic competence] may include what Paul Grice has called a 'logic of conversation.' We might say that pragmatic competence places language in the institutional setting of its use, relating intentions and purposes to the linguistic means at hand. (Chomsky 1980: 224-5)

The Gricean nature of an important syntactic constraint like (11) has significant implications for the question of modularity; see Van Valin (1986, 1991) for detailed discussion.

If the constraints on yes-no questions are not innate, then where do they come from? There would appear to be abundant evidence relating to them available to the child through everyday conversation in which children ask and answer questions constantly with peers and caregivers. It seems entirely reasonable that pragmatic knowledge of this kind would arise through pragmatic interactions. But how does this relate to constraints on wh-questions? As we have seen, yes-no and wh-questions are subject basically to the same constraint, (11), and the hypothesis is that children learn the conditions on yes-no questions and extend them to the corresponding type of wh-question. wh-questions appear after yes-no questions, and wh-questions out of complex sentences would be last type of question to develop, given its complexity.

Is there any kind of evidence that this transfer of restrictions could occur? Wilson and Peters (1988) document an interesting set of deviant wh-questions produced by a three-year-old. While the child was involved in typical question-answer interactions and could produce "normal" yes-no and wh-questions, he also learned the special question-answer routine exemplified in (12).

(12) a. Caregiver: *What did you eat? Eggs and …*
          Child: *Mbacon.*
      b. Caregiver: *Oh, that's a …*
          Child: *Aleph.*
          Caregiver: *That's a aleph.*

In this routine, the father, the primary caregiver, would ask the child a question by leaving a gap in a statement. The child, having learned the pragmatic restrictions on the caregiver's questions, created analogous WH-questions in which the question word filled a gap in the same positions left vacant in routines like those in (12). The result is WH-questions like those in (13).

(13) a. *What are you cookin' on a hot __?* [Answer: "Stove"]
      b. *What are we gonna go at [to] Auntie and __?*
      c. *What are we gonna look for some __ with Johnnie?*

Wilson and Peters argue explicitly that the type of routine as in (12) is the source of the questions in (13). The child learned the "question rule" from the game in (12), and when he began to make WH-questions with displacement of the WH-word, he produced the questions in (13). It appears, then, that the kind of transfer of restrictions posited above occurred in this instance.

5. Conclusions

If the analysis proposed here (or something like it) is correct, then there is evidence regarding these constraints available to the child in the language-learning environment. Hence in terms of (1) one could conclude that these constraints are **not** part of the initial knowledge state of the child. This conclusion highlights the crucial importance of the theory which characterizes the final knowledge state that is assumed in the schema in (1). The analysis sketched in this paper potentially yields a diametrically opposed result to the conclusion drawn from a GB-type analysis. This point does not depend upon the ultimate correctness of the proposed alternative account. This discussion involves a rather striking contrast between the accounts, but the same point could also be made regarding competing LFG and GB accounts, or GB and GPSG accounts of some other grammatical phenomenon. Therefore the conclusion drawn by the AFPS based on the GB account cannot be

considered valid, given the different conclusion that can be drawn from a competing analysis.

Moreover, the alternative analysis also highlights the second presupposition in (1) regarding the nature of the evidence available to the child. The theory underlying the account of the phenomenon in question defines the nature of the possible evidence relevant to its acquisition. A GB analysis by its very nature precludes the possibility of there being any evidence regarding subjacency available to the child, especially in a language like Lakhota. The alternative analysis, on the other hand, makes a very specific claim about what the evidence could be, and it suggests that available evidence relevant to one aspect of grammar (namely, yes-no questions) may be extended to inform the acquisition of a different, albeit related part of the grammar (WH-questions). In addition, this claim can be tested empirically through the study of the acquisition of yes-no and WH-questions in English, Lakhota, and other languages. This account also suggests that information used in the formulation of a constraint or principle by the child could have a very indirect source. In this case, evidence regarding restrictions on yes-no questions is applied to a distinct albeit related grammatical phenomenon, WH-questions. Another example of this kind of indirect source of information can be found in Rispoli's (1991) account of how Japanese children acquire the argument structure of verbs, in a situation in which they very rarely hear a verb with either case-marked arguments or a full array of arguments. Thus, these indirect sources of information about grammar make the language-learning environment richer than is standardly supposed.

In conclusion, the existence of competing analyses of a particular grammatical phenomenon renders standard AFPS conclusions regarding the psychological reality of linguistic constructs highly questionable in the absence of any experimental, observational or other empirical corroboration. Indeed, as there will always be competing analysis in different theories, the AFPS cannot be taken as a serious argument regarding the initial state of the language learner.[11]

Notes

1.   Earlier versions of this paper with the title 'Do children learn language?' were presented at a Colloquium at the Center for Cognitive Science at SUNY Buffalo, as an invited lec-

ture at the International Summer Institute in Functional Linguistics at the Central Institute of English and Foreign Languages in Hyderabad, India, and as an Atelier presentation at the Department of Linguistics at the University of Toronto. I would like to thank Jeri Jaeger, Matthew Dryer and David Wilkins for comments on earlier versions.

2. It has been suggested by an anonymous reviewer that if one takes a maturational view of the development of linguistic capacities, then this is no longer true, since some aspect of linguistic knowledge could have been absent in the initial state but come on line at some later point in development. Two points are relevant here. First, this schema is taken from Chomsky, who maintains a non-maturational view, and second, even if there were aspects of linguistic competence that were not present at birth but arose as part of a genetically-determined maturational process, the fundamental point would still be valid: those aspects of an adult speaker's linguistic competence which are not attributable to experience would have to be attributed to innate capacities.

3. The distinction between s (IP) and s-bar (CP) is not represented here for simplicity of presentation.

4. Ultimately, the determination of which NP is in focus is contextually based. It appears that the primary signal of focus is prosodic, as in many other languages.

5. This is not true in all languages; see Van Valin (1993), §2.4 for detailed discussion.

6. There is another, more technical way of determining the distribution of focus in complex sentences in Lakhota which space limitations preclude an adequate discussion of; see Van Valin (1993), §7.3.1 for detailed presentation and exemplification.

7. The reason *ečhúhą* 'while' is in the PFD is that the adverbial clause as a whole can be questioned, as in a question like "When did his wife bring him water?" Its individual constituents cannot be questioned, however, as we have seen.

8. An absolutely essential component of any explanatory account of these restrictions is an independently motivated determination of the PFD in a complex sentence. See Van Valin (1993), §§6.6, 7.3.1 for an independently motivated account of the PFD in complex sentences within Role and Reference Grammar based on the interaction of clause structure, lexical semantics, and pragmatic functions. It is on this point that other functional accounts have foundered; for example, Erteschik-Shir and Lappin (1979) argue that extraction is only possible out of dominant constituents, but they provide no independent explanation for the distribution of dominant constituents, thereby severely limiting the explanatory potential of their account.

9. The technical Role and Reference Grammar analysis underlying this informal account is presented in Van Valin (1993).

10. Note that the qualification "simple, direct WH-question" eliminates echo questions, since they are not subject to this restriction (nor to subjacency). For a detailed presentation of the application of this analysis to English, see Van Valin (1993).

11. Dan Slobin refers to the AFPS as the "argument from the poverty of the imagination," i.e. "I can't imagine how anyone could learn this, so it must be innate." Dawkins (1986) refers to it as the "argument from personal incredulity."

References

Chomsky, N. 1973. "Conditions on transformations". In: Chomsky, N. *Essays on form and interpretation*, 81-160. New York: North-Holland, 1977.

Chomsky, N. 1980. *Rules and representations*. New York: Columbia University Press.

Chomsky, N. 1981. "On the representation of form and function". *The Linguistic Review* 1: 3-40.

Chomsky, N. 1986. *Knowledge of language*. New York: Praeger.

Dawkins, R. 1986. *The blind watchmaker*. New York: W.W. Norton.

Erteschik-Shir, N. and Lappin, S. 1979. "Dominance and the functional explanation of island phenomena". *Theoretical Linguistics* 6: 41-85.

Huang, C.T.J. 1981. "Move WH in a language without WH movement". *The Linguistic Review* 1:369-416.

Kempson, R. 1975. *Presupposition and the delimitation of semantics*. Cambridge: Cambridge University Press.

Lambrecht, K. 1987. "Sentence focus, information structure, and the thetic-categorial distinction". *BLS* 13: 366-382.

Rispoli, M. 1991. "The acquisition of verb subcategorization in a functionalist framework". *First Language* 11:41-63.

Ross, J.R. 1967. Constraints on variables in syntax. MIT dissertation.

Van Valin, R.D., Jr. 1986. "Pragmatics, island phenomena, and linguistic competence". *CLS 22/2: Papers from the Parasession on Pragmatics and Grammatical Theory*, 223-233.

Van Valin, R.D., Jr. 1990. "Layered syntax in role and reference grammar". In: Bolkestein, M.; Nuyts, J.; and Vet, C. (eds), *Layers and levels of representation in language theory: A functional View*, 193-231. Amsterdam: Benjamins.

Van Valin, R.D., Jr. 1991. "Functionalist linguistic theory and language acquisition". *First Language* 11:7-40.

Van Valin, R.D., Jr. 1993. "A synopsis of role and reference grammar". In Van Valin, R. (ed.), *Advances in role and reference grammar*, Amsterdam: Benjamins 1-164. 164.

Wilson, B. and Peters, A. 1988. "*What are you cookin' on a hot?*: A three-year-old blind child's violation of universal constraints on constituent movement". *Language* 64: 249-273.

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