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1. Introduction.*

For the linguist, the current state of research in language acquisition provides a curious picture. While the "logical" problem of language acquisition continues to prove fruitful as a heuristic for the grammarian, the study of acquisition in real time has never lived up to its expectations as a potentially important source of independent evidence for grammatical theory. It is not hard to see why; just as the child is faced with frag--mentary and incomplete evidence in learning a grammar - the basis of "learnability"arguments - so the developmental linguist is faced with an even less adequate data-base in studying the lan--guage of young children, who cannot provide linguistic intuitions and who are usually less than cooperative in experimental situat--ions.

Given these problems, children's spontaneous "misprojections" are particularly significant. We define a misprojection as any instance where a child's grammar, based on a subset of Primary Linguistic Data generated by an adult grammar, fails to match that adult grammar. Obviously, things are not quite so simple; the speech of young children is constrained not only by grammatical competence but by severe performance constraints and by the child's limited cognitive domain. In this paper, we will be examining one particularly striking misprojection, arguing in the first part of

the paper that no extragrammatical factor could be responsible for it, and turning in the second half to a consideration of which grammatical factors might.

2. Overgeneration and undergeneration.

We can distinguish apriori two types of misprojection in the language acquisition process. The first, overgeneration, inv--olves the overapplication of a rule which has a limited domain of application in the target grammar. Given currently accepted restrictions on the type of evidence available to first language learners - i.e., no access to negative evidence - overgeneration should lead to learnability problems, since the learner will be unable to "retreat"from an overgeneralized rule. This type of projection problem, first brought to the attention of linguists by Baker (1979), has received considerable attention since and led to the imposition of "learnability" criteria on grammatical theory.

Much less attention, however, has been paid to the other possible type of misprojection, that of undergeneration. Here a child fails to apply or applies in only a limited fashion a rule which has a broad domain of application in the target grammar. Undergeneration poses no learnability problem: positive evidence is available to the child, but the child for some reason fails to use that evidence; in other words, a logically learnable rule is not learnt.

Undergeneration is thus particularly puzzling for any theory which attempts to equate the real time language learner with the logical language learner. Instead, as we will argue below, undergeneration data provides evidence for a model of grammatical development which, unlike the logical language learner, proceeds to a certain extent independently of the Prim--ary Linguistic Data available to the child.

3. A note on methodology.

The methodology employed in this study is "supplemented spontaneous" data collection. Typically, the developmental lin--guist is faced in studying young children with an unpleasant choice between experimental procedures which, if simple and rigorous enough to provide clear-cut results are often too simple and rigorous to provide results which are anything but art--ifacts of the experimental procedure itself, and spontaneous data collection which tends to reflect the limited cognitive domain of the child and thus to underestimate underlying gram--matical competence. Supplemented spontaneous data collection is an attempt to combine the advantages of both these methods by introducing experimental techniques surreptitiously into a naturalistic setting. Particularly heavy use has been made of

the (somewhat controversial) technique of Elicited Imitation, in which the child repeats directly what the experimenter has said: see Kuczaj & Maratsos (1975) and Kuczaj & Brannick (1979) for some promising applications of this technique to the development of the English auxiliary system. Where elicited imitations have been employed, the target sentence will be presented first, foll--owed by the child's imitation. Data, unless otherwise stated, is from one subject, K., who was taped weekly over a period of nine months from the age of 2;9 to 3;6, during which time his MLU varied from 3.5 to 4.5.

4. The "failure-to-invert" stage.

Linguists since Bellugi (1967) have been aware of a strik--ing pattern in the acquisition of WH-questions in English. In fact at least three "stages"[1] can be distinguished, based on the interaction of the child's developing grasp of the auxiliary system with the operator-variable structures created by WH-movement.

At the "preauxiliary" stage, WH-operators - and also other sentential operators, such as NEG - appear in presentential posit--ion. Uncontracted auxiliaries are typically absent, and contrac--ted auxiliaries often appear attached to WH-words as unanalyzed affixes. The following data, taken from a longitudinal study of two children recorded bi-monthly over a two-year period, illust--rates typical preauxiliary constructions:

(1) Not doggie eat them (S; 2;0)
No eat that (M; 1;8)

(2) Where de lid for it ? (S; 2;4)
Where's a lid for it ?(S; 2;4)

With the gradual acquisition of the auxiliary system (which typically takes place in a gradual, lexical-item-by-lexical-item fashion - see Pinker (1984) and references therein) the child learns the correct post-auxiliary position of NEG and the morpho-syntactic mechanisms of affix-hopping and do-support. At this point, an English-speaking child may do either of two things; some children simply progress smoothly towards the adult grammar, gradually eliminating "relic"forms left over from earlier stages of acquisition, while others - those which interest us - deviate sharply, entering the "failure-to-invert" stage. This stage is characterized by WH-questions in which the obligatory rule of subject-auxiliary inversion fails to apply:

(3) What button I can push (K; 2;9)
What the mouse is doing (K; 2;10)
What's this is (K; 2;11)
Why it's not working (K; 2;11)

Who the pig threwed ? (K; 2;10)
What this says ? (K; 2;10)
Why he didn't ? (K; 2;10)

The question, of course, is why these children fail to apply the obligatory inversion associated with main-clause WH-fronted structures in the target grammar. In the next section, we will attempt to rule out various extragrammatical explanations, before going on to explore gram-mar-based hypotheses.

5. Extragrammatical factors.

There are two possible extragrammatical explanations for failure-to-invert: these are

(a) Input factors
(b) Performance factors

Let us deal with each in turn.

(a) Input factors.

It is relatively easy to dispense with any argument directly based on features of the child's input (though, as we shall argue below, the child's intake, that is, the evidence which the child actually uses in constructing a grammar, may well influence the grammar itself). Quest-ions - including WH-questions - make up a considerable proportion of utterances directed at young children (Newport et al. 1977), thus providing abundant evidence in easily digestible, monoclausal form for the process of auxiliary inversion in English. Indeed, children who fail to invert appear to be flying in the face of the available evidence.

(b) Performance factors.

We can distinguish two possible types of performance-based expla-nation, one dealing with comprehension/perception problems, the other with production problems.

Turning to problems of perception first, it might be suggested that since inverted auxiliaries are almost always unstressed and usually contracted, children at the failure-to-invert stage might simply have failed to realize that auxiliaries can occur in inverted position. This argument has some plausibility for earlier stages in the acquisition of the auxiliary system, since there is good evidence that children at the pre-auxiliary stage misanalyze contracted auxil-iaries: rote-learned combinations such as what's that ? occur early in acquisition, well before the acquisition of other auxiliary elements or any productive rule of inversion, and persist in the language of children who otherwise fail to invert auxiliaries. The simplest explan-ation for such utterances is that they remain unanalyzed well into

the later stages of acquisition as "relics" of earlier grammars.) Nevertheless, at the failure-to-invert stage, the auxiliary system has for the most part been mastered; the fact that children at this stage observe auxiliary cooccurrence restrictions and correctly employ auxiliary morphology weighs against any perceptual explan-ation for undergeneration.

Are there then any production constraints which might account for failure-to-invert ? It seems clear that no simple length-of-utterance constraint could be responsible; sentences in which inversion fails to apply are monoclausal and fall well within the MLU range of the children who produce them. In fact, elicited imitation tests with K. indicated that the failure-to-invert sentences were in the range of immediate recall - i.e., could be imitated word-for-word without recourse to the linguistic system at all - which argues strongly against any memory or sequencing problem caused by length of utterance.

Another possible production explanation was first put foward by Bellugi herself, who argued that at the stage in question only one transformational rule could apply in any given sentence . Thus, if WH-movement applied, auxiliary inversion could not. There are two principle objections to this type of explanation, one empirical, one theoretical. On the empirical side, Ingram & Tyack (1979) have argued that the failure-to-invert sentences are not restricted to WH-questions, but occur with ordinary yes/no questions as well; if so, Bellugi's explanation cannot account for the latter. On the theoretical side, this style of explanation is linked to the ill-fated Derivational Theory of Complexity, where there is a simple one-to-one mapping between syntactic complexity and performance difficulty. It has long been acknowledged that such a simple corr-espondance cannot be maintained.

Finally, an interesting argument put foward by Pinker (1984) can also be used to argue against a performance-based explanation for failure-to-invert. In discussing another set of "errors" in the acquisition of the auxiliary system, those involving "auxiliary overmarking", Pinker mentions that such errors are not confined to young children but actually occasionally surface as adult speech errors. If we assume that production constraints are qualitatively (though obviously not quantitatively) similar in adults and child-ren, then we have an explanation for Pinker's observation and a possible criterion for distinguishing between production errors and genuine syntactic misprojections in language acquisition. Since as far as I am aware, failure-to-invert sentences never appear as adult speech errors, we can conclude on the basis of this criterion that production problems cannot be responsible for this particular syntactic misprojection.

We thus conclude that we are dealing with a genuine case of syntactic undergeneration for which no performance factor can be

held responsible. In the following sections we will go on to explore several possible grammatical explanations for the phenomenon at hand.

6. Lexical explanations.

A "lexical" approach to the problem of overgeneration has been popular since Baker (1979). If a child learns the domain of application of a syntactic process lexical item by lexical item, then overgener--ation will be avoided, and so will the subsequent problems attendant on retreat.

A lexical approach to undergeneration also appears promising, since item by item acquisition predicts the gradual extension of the domain of a grammatical process. Indeed, many aspects of early acq--uisition seem to be instances of lexical learning, including the acquisition of the auxiliary system itself; as reported by Kuczaj & Maratsos (1975) and Maratsos & Kuczaj (1978), amongst others, each auxiliary is learnt separately in each of its possible syntactic positions, presumably from positive evidence. The child, in other words, leaps to no conclusions.

Item by item acquisition has also been reported for the acquis--ition of inversion with WH-words (Kuczaj & Brannick 1979), though here the evidence is less decisive: Erreich (1984) found no lexical effect. However, the failure-to-invert stage poses an a obvious and non-trivial problem for a lexical acquisition model closely tied to the availability of positive evidence, simply because there is no positive evidence for sentences containing WH-words and uninverted auxiliaries.

Pinker (1984) offers an ingenious explanation for failure-to-invert in an attempt to rescue the lexical hypothesis. His account is based on a set of "Sentence Modality"features which can appear in the control equations for individual WH-words. Briefly put, his claim is that children start out with the assumption that S-initial WH-words and inversion are unconnected; in LFG terms, a noninverting child lacks the equation SENT-MOD $\neq$ noninverted for a given WH-word. Thus initially the child should allow inversion optionally, and only later learn that non-inverted structures are ungrammatical.

Pinker's explanation suffers from several defects. First of all, it makes two predictions for the course of acquisition :

(a) Inversion possibilities for each WH-word are learnt separate--ly.

(b) At the failure-to-invert stage inversion is optional.

Controversy surrounds both these claims. As note above, Erreich (1984) found no strong difference between WH-words at the failure-to-invert stage. My own data support her conclusion; once unanalyzed WH-phrases, containing a WH-word + contracted auxiliary, are elimin-

-ated from consideration, non-inverted structures are as likely to occur with any WH-word. In fact, K. produced three types of WH-question during the period of failure-to-invert: auxiliary-less questions, as in (4) below, questions with WH-word + contracted auxiliary, as in (5), and uninverted structures, as in (3) above:

(4) What he saying ?
What they called ?
How we get out of here ?

(5) What's he saying ?
What's in this picture ?
Where's the water ?

Evidence that the WH-word + contracted auxiliary form an unanalyzed lexical item is provided by the examples in (6) below, where another auxiliary appears in uninverted position:

(6) What's this is ?
What's there are ?
What's he's doing ?

During the period of investigation, K. produced no WH-questions with uncontracted inverted auxiliaries; this weighs against Pinker's second prediction that inversion at this stage is optional.

Pinker's explanation is also implausible on cross-linguistic grounds. Since he assumes that the child's first hypothesis is that there is no relation between inversion and an S-initial WH-word, we should expect such a relation to be marked cross-linguistically. But in fact just the opposite is true. In his study of seventy nine interrog--ative systems from randomly chosen languages, Ultan (1978) identifies thirty five as utilizing inversion structures. Every one of these inv--erted with WH-questions, but only seven with yes/no questions. In other words, there appears to be a strong linguistic correlation between inversion and S-initial WH-words; as long as one maintains a connection between markedness in acquisition and markedness cross-linguistically, this would appear to be strong evidence against Pink--er's view.

Finally, and perhaps most significantly, notice that in solving the problem of undergeneration Pinker has created a much more serious problem of overgeneration. Without negative evidence, how is a child to know that an uninverted structure containing a WH-word is ungrammatical in the target grammar ?

We thus conclude that Pinker's account is untenable from three different perspectives: from the point of view of at least some of the acquisition data; from the point of view of cross-linguistic markedness (though, as we shall see below, we have at least some reservations about this type of argument); and from the point of view of learnability theory. Let us then turn to another style of syntactic explanation, embodied by current "parameter-setting" models.

7. Parameter-setting explanations.

In our investigation of undergeneration, we have emphasized that any grammatical model which stuck too closely to the Primary Linguistic Data would fail to predict the phenomenon of noninversion. The para--meter-setting model provides a possible antidote to this problem,since a parameter-setting learner proceeds to a certain extent independently of the linguistic evidence at hand. Obviously, such evidence is not irrelevant - otherwise we would all end up speaking the same language - but its role is limited to that of a "triggering"experience for the child. This in turn implies that the child's use of data is highly selective, and raises the distinct possibility that data from one part of the grammar might set a parameter in another part of the grammar. Such a possibility has rather profound implications for the study of language acquisition, since it commits the developmental linguist to an investigation of the entire syntactic system of the child. As we shall see below, broadening the range of the investigation yields some rather unexpected results.

Another important aspect of the parameter-setting model is the expected correlation between markedness in acquisition and cross-linguistic markedness. Indeed, we have just used an argument based on this correlation in rejecting Pinker's account of failure-to-invert. (Note that there is an implicit parametrization of inversion possib--ilities in that account.) However, notice that such a correlation assumes a particular type of parameter-setting, which I shall term "linear" parametrization. In the linear model the child, prior to any linguistic evidence, sets the least marked parameter for a given syntactic domain, then "checks" the grammar which results from setting this parameter against relevant data from the target grammar. If there is a mis-match, the next least marked parameter will be chosen, again checked against the data, and so on. Now, the linear model predicts, ceteris paribus, a very close intrinsic link between cross-linguistic markedness and unmarked parameter settings. An attempt to substantiate this link is made in Bickerton (1981), who explicitly proposes that creole languages, which arise in cases of linguistic trauma where Primary Linguistic Data is too sparse and degenerate to permit any but an initial parameter-setting, are in fact "unmarked"syntactically and closely resemble the initial grammatical hypotheses of language-learners. Space limitations prevent a thorough discussion of this interesting hypthesis (see Davis (forthcoming)); however, it should be apparent that the failure-to-invert stage poses a number of problems for the linear model. First of all, notice that by no means all children pass through the stage in question, as one would expect if there were a fixed and invariant sequence of parameter settings. Second, as we have already mentioned, the expected correlation between cross-linguistic markedness and markedness in acquisition simply fails to hold, leaving us at square one.

One possible solution to this problem lies in abandoning the linear model of parameter-setting, and, indeed, any absolute notion of syntactic markedness.

Instead, I would like to argue for a "choice-point" model of parametric syntax, which preserves the advantages of the parametric approach, in particular the indirect relationship between the language learner and Primary Linguistic Data, whilst avoiding some of the disadvantages of the linear model. The two models differ in two important ways. Firstly, the choice-point model embodies no absolute scale of markedness; therefore the child need not pass through a fixed sequence of parameter settings on the way to a target grammar. Secondly, we introduce a principle of uncertainty; at a choice-point, a child can pick any parameter setting compatible with a relevant subset of Primary Linguistic Data. This allows a child to make a wrong choice - though obviously not any wrong choice, since the child's hypothesis space is still severely constrained by parameters of UG - and provides an explanation for why some but not all children fall prey to misprojections during the course of acquisition.

While the choice-point model more accurately represents the course of real-time language acquisition, it does lose some of the conceptual elegance of the linear model. In particular, there is no longer an intrinsic connection between the study of language acquisition and that of cross-linguistic universals and markedness. Indeed, the possibility arises that certain acquisition misprojections need never be instantiated in target grammars. In the following sections, we will compare two parametric approaches to the failure-to-invert stage, concluding that it is indeed an example of an acquisition misprojection with no target-grammar counterpart.

8. Failure-to-invert and the ECP.

Following Chomsky (1985) let us assume the following structure for WH-questions with inversion:

$$C''[WH_i\ C'[AUX_j[_{I''}\ NP[_{I'}\ e_j \ldots e_i]]]]$$

Note that a WH-phrase moves into the SPEC C position, and AUX (INFL) into the head-of-COMP position. Let us further assume that both the empty categories e_i and e_j are constrained by the Empty Category Principle, whose formulation in Lasnik & Saito (1984) we adopt:

A nonpronominal empty category must be properly governed,

where

α properly governs β if α governs β and

a. α is a lexical category X^0 (lexical government)
or b. α is coindexed with β (antecedent government)

and

α governs β if every maximal projection dominating α also dominates β and vice-versa.

Now, let us assume in addition that antecedent government is only possible from the head position in COMP. Since the trace of INFL/AUX, e_j, can never be lexically governed, INFL will have to move into the head-position in COMP in order to antecedent-govern its trace. On the other hand, a WH-trace in VP will be lexically governed by the verb, and can therefore move into the SPEC C position, since it need not antecedent-govern its trace. When a subject is questioned, however, the situation is different:

$$[_{C''}[_{C'}WH_i[_{I''}\ e_i[_{I'}\ AUX\ \ldots]]]]$$

Since a subject NP in a tensed sentence is not properly governed by any X^o governor, antecedent-government must hold between a WH-phrase moved out of subject position and its trace, e_i. Therefore the WH-phrase must occupy the head-of-COMP position. This in turn means that INFL/AUX is prevented from moving, since in order to antecedent-govern its trace it too must occupy the head-of-COMP position. We thus have an explanation for the subject/non-subject assymetry in matrix WH-questions in English based on the ECP. (This argument was first proposed by Koopman (1983).)

Now, let us extend the argument to the failure-to-invert stage in acquisition. Suppose we were to say that as an initial hypothesis (and here we adopt the linear model of parameter-setting) the child were to assume that Proper Government only held if <u>both</u> clauses of the ECP were met, i.e., if an empty category were both lexically and antecedent-governed. In that case, movement out of subject position would be block-ed altogether, since a subject trace is never lexically governed in a matrix sentence, and movement from object position would only be possible if the moved WH-phrase occupied the head-of-COMP position and could ant-ecedent govern its trace. But in that case, INFL-movement would be impossible, since the trace of INFL is not lexically governed, either. Thus, at the failure-to-invert stage subject and object questions would have the following structural representations:

$$[_{C''}[_{C'}[_{I''}\ WH[_{I'}\ AUX\ \ldots]]]]$$

$$[_{C''}[_{C'}\ WH_i\ [_{I''}\ \ NP[_{I'}\ AUX\ \ldots e_i]]]]$$

This accounts for the failure-to-invert stage rather elegantly. However, as we shall argue below, it fails to account for a rather interesting additional set of data which appears to characterize the failure-to-invert stage.

9. Failure-to-invert and COMP.

Children at the failure-to-invert stage are typically beginning to embed tensed clauses. Such clauses appear at the stage in question with a restricted set of matrix verbs: <u>think</u>, <u>know</u>, <u>say</u>, <u>mean</u>, <u>tell</u>, and with two kinds of complement clauses: WH-complements, which are consistently acquired very early in the acquisition of complex syntax, and tensed

clauses without complementizers. The latter is somewhat surprising from a learnability viewpoint, since it is generally assumed that the ability to surface without an overt complementizer is a marked property of certain verbs in English, and this is certainly true cross-linguistically; again, we note a mismatch between what is marked in acquisition and what is marked accross languages. Examples of typical embedded constructions produced during the failure-to-invert period are given below in (7) and (8) (all examples from K. at 2;11):

(7) I think the snake came to tie the airplane all round.
Mommy says I put it on all by myself.

(8) Tell me what's popped up.
I know why the plane broke.

The same pattern seems to hold for relative clauses; as noted by Hamburger (1981), the first relative clauses produced by children are headless, or rather headed by a WH-word; these appear much earlier than ordinary headed relative clauses. During the failure-to-invert period, K. produced no spontaneous relative clauses; however, he readily imit--ated them, with very interesting results. In every single case, the "relative pronoun" <u>that</u> was deleted or relaced (again, examples from K. at 2;11):

(9) This is the tiger that I can't eat. (Target)
This the tiger I can't eat. (Imitation)

This is the pot that hit the tiger on the head. (T)
This is the pot fell on the tiger's head. (I)

Which is the car that drives away ? (T)
What's the car drives away ? (I)

This is the pig that fell into the well. (T)
This the pig who fell into the well. (I)

While the first example in (9) above could simply be construed as a case of optional complementizer deletion, the other examples cannot, since deletion of <u>that</u> following an empty subject leads to ungramm--aticality in relative clauses. The last example is particularly interesting in that a WH-word seems acceptable for K. in relative clauses, as in sentential WH-complements, and is here substituted for <u>that</u>.

An even more striking set of data is provided by K.'s imitations of complement clauses containing the normally undeletable complement--izer <u>if/whether</u>. As with relatives, K. produced no spontaneous inst--ances of such clauses, but was willing to imitate them. Examples of these imitations appear below in (10) (again, all from K. at 2;11):

(10) Do you know if the mouse fell off the ladder ? (T)
Know how mouse fell the ladder ? (I)

I don't know if the paint-brush fell off. (T)
I don't know what the paint-brush fell off. (I)

The water overflows if you leave the tap on. (T)
The water overflows when you leave the tap on. (I)

I wonder if that fish is good to eat ? (T)
I wonder that fish is good to eat ? (I)

I don't know whether it's Scuffy. (T)
I don't know where it's Scuffy. (I)

I don't know if it's Scuffy. (T)
I don't know when it's Scuffy. (I)

If you give me some fish, then I'll give you some money. (T)
When you give me some fish I might give you some money. (I)

In every case, the complementizer is either deleted or (much more frequently) replaced with a WH-word. The same pattern holds with imitated clefts: <u>that</u> is deleted but a WH-word is not:

(11) It's funny that the goat is lying down. (T)
That's funny the goat's lying down. (I)

It is Pax that frightens me. (T)
Is Pax is frightened Henry. (I)

It's K. who wants to hear himself. (T)
It's K. who wants to hear himself.

By now we are forced to an inescapable conclusion: at the stage in question, K. only allows a +WH element in COMP. But now, notice that, given our previous assumptions about the structure of COMP in matrix clauses, in particular that inverted auxiliaries are in the head-of-COMP position, we also have an explanation for why K. fails to invert in matrix WH-questions; since auxiliaries are clearly -WH, they will be unable to move into COMP, and inversion will be blocked.

On the other hand, our previous explanation for failure-to-invert, based on the ECP, fails to account for the prohibition against -WH elem--ents in COMP; since no empty category is involved in most of the examples above, the ECP is irrelevant to their analysis. We thus conclude that as far as the acquisition data is concerned, the $*[_{COMP}$ -WH] account is more adequate than that based on the ECP.

We are thus faced with a dil͡emma: the linguistically more highly-valued explanation seems less highly-valued in dealing with acquisition data. Indeed, the condition we have proposed to account for K.'s failure to invert seems quite strange when viewed from the perspective of cross-linguistic markedness; I know of no language in which only +WH elements are allowed in COMP.

In fact, this is just the situation that we had envisaged above, where possible misprojections in language acquisition do not necessarily correspond to possible adult grammars. Note that this does not mean that developing grammars are devoid of linguistic interest; we have gone to some trouble to show that the misprojection under consideration is a genuine case of syntactic undergeneration which cannot be explained away by reference to extragrammatical factors.

What we have not discussed is why some children should appear to obey the condition we have proposed. In the final section of the paper, I would like to suggest that an explanation might be forthcoming if we put certain restrictions on the type of data available to the child at the stage in question.

9. Input and intake.

It is an uncontroversial assumption that a language learner does not use all the available linguistic evidence in constructing a grammar. Indeed, much work in learnability theory has been concerned with restric--cting the type of evidence needed to learn a grammar. Suppose we adopt a very highly restricted model, that of degree-0 learnability. This will prevent a child from using any evidence which is not available in matrix clauses. As far as the adult grammar is concerned, degree-0 learnability is in fact too restricted, since Bounding Conditions, for example, have to be stated across domains greater than a single clause; however, since children at the stage in question have not yet reached a point where such conditions are relevant (long-range extractions are a much later acquisition) we may assume that degree-0 evidence is all that is avail--able to them.

Restricting the type of evidence available to the failure-to-invert child has some immediate consequences. In particular, it will mean that complementizers (which occur only as the heads of subordinate clauses in English) will be unavailable to the child. In fact, the only elements allowed in COMP in matrix clauses are WH-words and inverted auxiliaries. This will explain the absence of complementizers in the speech of child--ren at this stage of development, since they will never get any evidence for them. Now, suppose children at this stage come to a parametric choice point. Then they might either assume that -WH elements can occur in COMP position, in which case there will be no problem with inversion and they will never enter the failure-to-invert stage; or, since there is no avail--able evidence either way, they might assume that -WH elements cannot occur in COMP, and accordingly enter the failure-to-invert stage.

Such an explanation can also account for why and how children get out of the failure-to-invert stage (the problem of "advance" in undergen--eration being precisely parallel to the problem of retreat in overgen-eralization). It is a reasonable hypothesis that as the child develops, so does his or her capacity to use more linguistic evidence in formulat--ing grammatical hypotheses; in other words, the child can increase the "degree"of available evidence from 0 to 1, and eventually, from 1 to 2. As soon as degree-1 evidence is available, the $*[_{COMP}$-WH] condition will be easily falsified by positive evidence, and the child will no longer be unable to invert auxiliaries.

What this explanation does not account for, however, is why the child should ignore main-clause inverted auxiliaries. As we have argued above, nothing should prevent them from srving as evidence for the child since they are phonologically accessible, relatively unmarked in terms of UG, and confined to matrix clauses.

Here, our original ECP account clearly has an explanatory advantage over the *[$_{COMP}$ -WH] filter. Yet the ECP account could not explain why some children invert and others do not. Is there any way to combine the two to produce an explanatorily adequate story ?

One further condition on admissible evidence might provide the right answer. Let us suppose that a moved auxiliary cannot contribute to the feature-specification of COMP, since auxiliaries are intrinsically neither + or - WH, unlike complementizers and WH-words. If so, inversion of an auxiliary (i.e., movement of INFL into COMP) could not count as evidence for the feature-specification of COMP, and the child would not be able to use inversion as a diagnostic for the status of COMP. In that case, "uncertainty" would remain, and we would account for the observed variation between children.

10. Conclusions.

We have used a particular case of syntactic undergeneration to argue firstly, that there are genuine cases of syntactic misprojection; secondly, that such cases cannot be reduced to lexical learning; and thirdly, that a linear parametric model of language acquisition cannot deal with them either. Instead, we have argued that a non-linear "choice-point" model , together with certain assumptions concerning evidence available to the language learner, can account for the complex and variable data presented to the linguist by the real-time language learner.

FOOTNOTES

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1 Bellugi herself mentions four stages; however, her first two stages (A and B) do not appear to be sufficiently qualitatively different to justify independent status.

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