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ABSTRACT

First language acquisition studies reveal that children overextend the minimal distance principle (MDP) during their acquisition of infinitive complement structures. The MDP dictates the interpretation of the logical subject of the infinitive in these structures and overrides marked lexical features such as subject control. Misinterpretations by adult second language learners and by adult prelingually deaf individuals are also shown to result from an overextension of the MDP. On a comprehension test of specific sentences, the relative order of difficulty in interpreting the logical subject of the infinitive is similar for both groups. This order reflects the same order of difficulty on sentences containing "tell," "ask," and "promise" which has been reported in the literature on first language acquisition. The later acquisition of certain structures is explained in terms of the inherent linguistic complexity of the sentences. (Author)

Control Judgments by Deaf Adults and by Second Language Learners

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Considerable attention has been given to the acquisition by children of structures containing infinitive complements. C. Chomsky (1969) deals with the acquisition of structures such as the following:

(1) John told Bill to leave.

(2) John promised Bill to leave.

Proper interpretation of such structures requires a knowledge of a lexical property associated with the matrix verb, which specifies whether the understood 'subject' of the infinitive is to be the main clause subject or a noun phrase (NP) in the verbal complement. Within the framework of N. Chomsky (1980), the underlying subject of an infinitive complement is the constituent PRO. Accordingly, sentences 1 and 2 would be represented as 3 and 4, respectively, where labelled bracketing will be ignored.

(3) John told Bill PRO to leave.

(4) John promised Bill PRO to leave.

Following N. Chomsky's rule of control (1980:32-6), a coindexing procedure assigns to PRO the index of the NP in the sentence which is defined as the controller of PRO.

With most verbs that take infinitive complements in English (tell, persuade, order, allow, force, etc.) an NP in the verbal complement is the controller of PRO. In 3 above, Bill will do the leaving and not John, so Bill and PRO are coindexed; in other words, Bill is the controller of PRO. Verbs like tell are said to assign complement control. In contrast to verbs that assign complement control, the verb promise is an exception to the general rule in that it has the property of subject control. So in 4, John, the subject NP, is the controller of PRO because John will do the leaving and not Bill.

C. Chomsky (1969) found that children between the ages of 5 and 10 passed through four stages in their acquisition of structures with infinitive complements. In the first stage children overgeneralized complement control, consistently assigning Bill as the subject of the infinitive in sentences like both 1 and 2. In the second stage children were not consistent in their interpretation of such sentences. In the third stage children had mastered tell but still made mistakes with promise. And in the fourth stage children were successful with both verbs.

1. The Minimal Distance Principle. To explain children's difficulty with the verb promise, C. Chomsky hypothesized that children were overextending the Minimal Distance Principle (MDP), a notion defined in Rosenbaum (1967). As it relates to structures

with infinitive complements, the MDP stipulates that the NP immediately to the left of the infinitive is assigned as the subject of the infinitive.[1] While most verbs comply with the MDP, promise violates it by assigning subject control and must be so designated in the lexicon. C. Chomsky maintained that the late acquisition of promise was due to its violation of the MDP.

The verb ask adheres to the MDP in its meaning of 'request' but violates it in its meaning of 'question'. Consider the following three sentences (PRO will be ignored):

(5) John asked Bill to leave.

(6) John asked to leave.

(7) John asked Bill what to do.

In 5 and 6, ask is a request for action. As C. Chomsky pointed out, request verbs (ask, beg, want, choose, etc.) follow the MDP. When there is an NP in the verbal complement, it is understood as the subject of the infinitive: in 5, Bill will do the leaving. In the absence of an NP in the verbal complement the sentential subject is the closest NP to the infinitive and is accordingly understood as the subject of the infinitive: in 6, John will do the leaving. But ask in 7 is a query and as such has a different control property from ask as a request. Like promise, it violates the MDP and is marked for subject control. It is John rather than Bill that is understood as the subject of to do in 7.

Because there are actually two verbs ask, one with complement control, one with subject control, C. Chomsky found that ask was even more difficult to acquire than promise, which is at least consistent in its violation of the MDP. She found that children first went through a stage in which they overextended the MDP to all instances of ask. That is, they interpreted Bill as the subject of the infinitive in both 5 and 7. Later the children began to distinguish the two verbs ask, but some continued to misinterpret ask meaning 'question' even at age 10, as opposed to promise, which was mastered by age 9.

Others have replicated C. Chomsky's study or conducted similar studies which essentially support an overextension of the MDP by children in their acquisition of control structures.[2, 3] These studies have differed from Chomsky's only in minor details. In one such study, Kessel (1970), children mastered ask and tell complements earlier than the children in Chomsky's study. Many of Kessel's 7-year-olds and most of his 8-year-olds correctly interpreted the complements of both verbs. Tavakolian (1978) studied children aged 3 to 5 and observed among the 4- and 5-year-olds an overextension of the MDP to the verb promise. Among the 3-year-olds, however, she suspects an even earlier strategy than the MDP.[4] In a study with Arabic-speaking children, Aller et al. (1977) tested the Arabic equivalents of ask and tell structures and observed a stage during which the MDP was in fact overextended to Arabic ask 'question'.

Whereas the above studies are first language investigations of the acquisition of infinitive complement structures, d'Anglejan and Tucker (1974) investigated the acquisition of these and other structures by adult second language learners. Their subjects were divided into two groups, beginners and advanced. One task tested subjects' comprehension of sentences like 1 and 2 above, with the aim of assessing their knowledge of the subject control property of promise. On this task the beginners were inconsistent in their responses, behaving somewhat like the children in C. Chomsky's (1969) second stage (inconsistency). The advanced subjects made virtually no errors on these structures. Another task tested subjects' comprehension of structures like 7 above, in which ask with a wh-complement assigns subject control, versus structures like 8 below, in which tell assigns complement control despite the wh-complement.

(8) John told Bill what to do.

On this task the beginners applied the MDP correctly to structures like 8 but exhibited a 50% error rate on atructures like 7. This fact indicates an overextension of the MDP by a large number of subjects at the beginning level. The advanced group recognized the different control properties of the two verbs and made few errors on the task.

In their study, d'Anglejan and Tucker found no second language strategies that differed from any of the first language strategies reported in the literature. They conclude that second language learners utilize 'basic language processing principles' and apply 'broad general rules' in interpreting the kinds of sentences under discussion and that they do not resort to any contrastive analysis of their first languages (292-3). These conclusions are consistent with the hypothesis advanced in Dulay and Burt (1974, 1976) that in most respects the mechanisms of second language acquisition parallel those of first language acquisition.[5]

Given the evidence in the above studies, it is reasonable to assume that children do pass through a stage in which they overextend the MDP as an interpretive strategy for the comprehension of control structures. This assumption will be maintained throughout the paper. In view of d'Anglejan and Tucker (1974), the MDP appears to be overextended by adult second language learners as well.

2. Second language learners and prelingually deaf learners of English. The question of the second language acquisition of infinitive complement structures is pursued in this paper. In addition, the acquisition of these structures by prelingually deaf learners of English is also pursued. In many respects, deaf learners of English exhibit the same kinds of syntactic behavior as other populations learning English do (Quigley and

King 1980:337-43). Hence the errors of deaf individuals should not be studied in isolation. Along with the findings of first and second language acquisition studies, the errors (and other linguistic behavior) of deaf individuals are valuable to an understanding of language acquisition generally. In some respects their behavior might resemble first language learners, in other respects second language learners (see fn. 5). Where the three populations behave similary relative to the acquisition of particular structures, an explanation of the similarity might be sought in the inherent nature of the structures themselves.

The survey shown in Table 1 was administered to 103 adult speakers of other languages learning English and to 51 adult prelingually deaf learners of English. The speakers of other languages were students at Boston University's Center for English Language and Orientation Programs (CELOP) and represented twelve different native languages as follows (figures in parentheses indicate numbers of speakers of each language): Spanish (55), Farsi (12), Arabic (10), Japanese (8), French (4), Portuguese (4), Turkish (3), Armenian (3), Greek (1), Korean (1), Chinese (1), and Creole (from Guinea Bisao) (1). On the basis of CELOP placement tests, written language samples, and oral interviews, the students were distributed across eleven levels of English proficiency from beginning to advanced. The prelingually deaf students were newly admitted to the National Technical Institute

for the Deaf (NTID) at Rochester Institute of Technology. Each of the 51 students who participated in the experiment had been placed in one of NTID's five English levels on the basis of an English score, which is a combination of the California Reading Test and NTID's Written Language Test. Though such parallels are only an approximation, these English levels are roughly comparable to an ESL range of from low intermediate to advanced.

(A) George asked Tom to buy a newspaper.

Who will buy a newspaper? George Tom

(B) Bill chose to stay at home.

Who stayed at home? Bill another person

(C) John told Mary to close the door.

Who will close the door? John Mary

(D) Bill promised George to wash the dishes.

Who will wash the dishes? Bill George

(E) John said to come at 7:30.

Who will come at 7:30? John another person

(F) Jim showed Larry where to go.

Who will go somewhere? Jim Larry

(G) Mary asked to see the teacher.

Who will see the teacher? Mary another person

(H) Larry told John what to do.

Who will do something? Larry John

(I) Tom reminded George to do the homework.

Who did the homework? Tom George

(J) Larry was asked where to sit.

Who will sit somewhere? Larry another person

(K) Alice explained what to do.

Who will do something? Alice another person

(L) Linda chose Mary to answer the question.

Who answered the question? Linda Mary

(M) Mike was reminded by George to study the lesson.

Who will study the lesson? Mike George

(N) Jim was told whom to visit.

Who will visit someone? Jim another person

(O) Tom asked Bill what to buy.

Who will buy something? Tom Bill

Table 1. Survey of infinitive complement structures.

(Correct answers are shown in italics.)

The subjects were asked to read each sentence and accompanying question on the survey in Table 1 and to circle the NP to the right of the question which they felt to be correct. Correct answers have been italicized in Table 1. Eight different main verbs are involved. It was assumed that all subjects understood the 'meanings' of these verbs and the meanings of the other lexical items in the sentences. It was also assumed that all subjects were capable of processing the simple questions which accompany the sentences.

The verb ask appears in sentences A, G, J, and O. In A and G, ask has the request meaning, so the MDP applies. In J and O, the infinitive complement contains a wh-word; therefore ask has the question meaning and the MDP is violated. But J is a passive sentence, which has the effect of reversing the control relationship, so the subject NP Larry is not interpreted as the subject of to sit. Instead, some unspecified NP, another person, must be understood as the subject of to sit.

Sentences B and L contain the verb choose. Both sentences comply with the MDP. The verb tell, a consistent MDP verb, appears in sentences C, H, and N. The presence of the wh-word in H and N does not affect the control property of tell, but the presence of passive in N does; therefore, the subject NP Jim is interpreted as the subject of to visit. Other verbs that comply with the MDP are show in sentence F and remind in sentences I and M, but again, passive reverses the relation in M. Sentence D contains promise, the consistent MDP violator.

Sentences E and K contain two verbs that have rather peculiar control characteristics. The verb say in E has complement control even though there is no specified NP in the verbal complement. Thus some unspecified NP is to do the coming. When an NP is specified, it appears after a for-complementizer as in 9 below.

(9) John said for Bill to come at 7:30.

The verb explain in K behaves in a similar fashion to say, but a specified NP will appear in a prepositional phrase with to, as in 10:

(10) Alice explained to Bill what to do.

To summarize, sentences A, B, C, F, G, H, I, and L comply fully with the MDP. Sentence M, on the other hand, is a passive sentence with an agent by-phrase, so the MDP is violated as expected. D and O violate the MDP by virtue of the subject control property of their matrix verbs, and J, a passive sentence which would conform to the MDP because of a reversed relationship of its subject-controlling verb, nevertheless violates it because of the absence of a by-phrase. Sentences E and K form a special class of verbs which seem to have complement control even in the absence of an NP in the complement. E and K accordingly violate the MDP.

Sentence N has an interesting status. Although N would violate the MDP because it is passive, an agent by-phrase is absent, resulting in what would seem to be a de facto compliance with the MDP. However, unlike the other sentences with wh-words, N contains the relative pronoun whom, which can only refer to a person. Since the choices for sentence N in Table 1 are Jim and another person, an overextended MDP strategy would designate

the NP whom as the understood subject of to visit in N. Under these circumstances N violates the MDP.[6]

3. Analysis of results. Table 2 reflects the order of difficulty of the sentences in Table 1 for each group. The percentage of subjects who interpreted a sentence incorrectly is given beside the letter designating that sentence. Although a greater percentage of prelingually deaf subjects miss the hardest seven sentences for both groups--J, O, E, N, K, D, M--the relative order of difficulty of those sentences is similar for both groups. Each one of the seven sentences is missed by more than 15% of the members of each group. There is less similarity in the relative order of difficulty of the eight easier sentences for both groups (those missed by fewer than 15%) and no consistency in percentages between the two groups.

Second Language Learners		Prelingually Deaf	
Sentence	% Erring	Sentence	% Erring
E	59.2	J	80.4
J	54.4	O	74.5
O	43.7	E	51.0
N	32.0	N	43.1
K	29.1	K	41.2
M	19.4	D	35.3
D	15.5	M	21.6
H	13.6	G	13.7
F	12.6	I	11.8
G	11.7	F	3.9
I	8.7	A	2.0
A	6.7	L	2.0
L	3.9	B	0.0
C	1.9	C	0.0
B	1.0	H	0.0

Table 2. Order of difficulty by group.

The seven hardest sentences have been shown to violate the MDP in some way, while the eight easiest sentences comply fully with the MDP. From the standpoint of the language learner, therefore, the easy sentences have predictable control and the difficult sentences have unpredictable control.

3.1 Performance by proficiency level. A contingency test was used to determine whether there was an interaction between performance on the sentences with unpredictable control--J, O, E, N, K, D, M--and English proficiency level. For each group actual proficiency levels as described in section 2 were collapsed into three levels: low, mid, and high. The contingency test revealed that there was a significant association between unpredictable control and performance across proficiency levels for second language learners ($chi^2 = 6.77$, df = 2, p .05, C = .07). A contingency coefficient (C) of .07 indicates a weak but significant correlation. There is likewise a significant association between unpredictable control and performance by level for prelingually deaf individuals ($chi^2 = 9.31$, df = 2, p .01, C = .13).

Figures 1 and 2 show the degree of improvement on each sentence type by second language learners and prelingually deaf students, respectively. As illustrated in Figure 1, the second language learners, broken down by proficiency level, made correct judgments on the predictable sentences as follows: low (86%), mid (94%), high (98%). On the unpredictable sentences they per-

formed as follows: low (49%), mid (69%), high (76%). As illustrated in Figure 2, the deaf subjects performed as follows on the predictable sentences: low (96%), mid (95%), high (97%); and as follows on the unpredictable sentences: low (35%), mid (49%), high (70%).

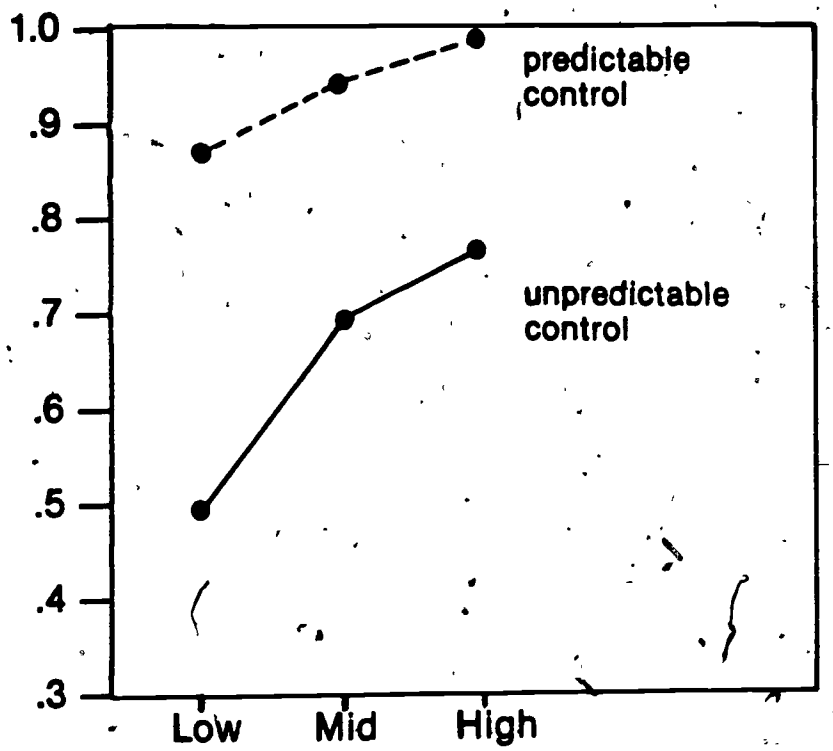

Figure 1. % correct by proficiency level. Second language learners.

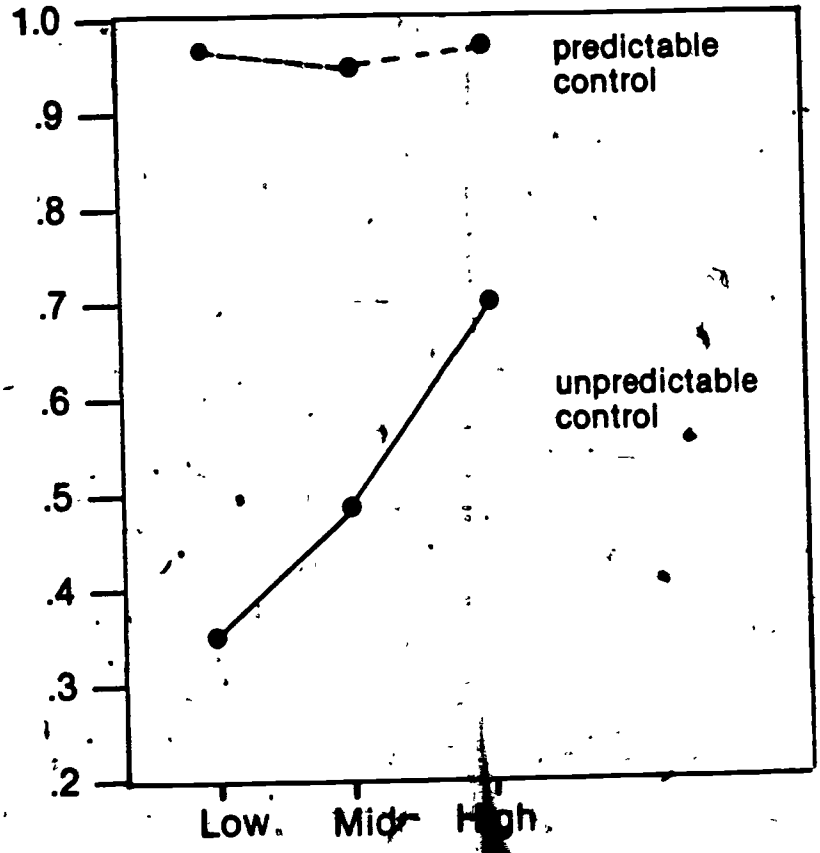

Figure 2. % correct by proficiency level. Prelingually deaf learners.

Despite the correlation between proficiency level and improvement, successful interpretation of the sentences with unpredictable control is only 76% for second language learners and 70% for the deaf subjects at the high proficiency levels. Table 3 gives the percentages of errors made by both groups at the high level on these sentences individually and the relative orders of difficulty. The verbs say (sentence E) and ask 'question' (sentences J and O) are still particularly troublesome to both groups.

Second Language Learners (32 subjects)		Prelingually Deaf (16 subjects)	
Sentence	% Erring	Sentence	% Erring
E	50.0	J	62.5
J	40.6	O	56.3
O	34.4	E	43.8
K	21.9	K	18.8
N	18.8	D	18.8
M	0.0	N	6.3
D	0.0	M	6.3

Table 3. Percentages and order of difficulty at the high proficiency levels.

3.2 Markedness and linguistic complexity. A grammar may contain idiosyncratic rules which violate general principles of grammar or general conditions on rules (N. Chomsky 1977a:20-1). Relative to other rules, these 'highly marked' rules will be acquired late by children. The subject control property of verbs like promise and ask 'question' has a marked status in the grammar in that it violates a general principle of the rule that assigns a controller to PRO, namely the MDP (or its revised definition as 'nearness' in N. Chomsky (1980); see fn. 1). Application of the MDP is the general, 'unmarked' instance of the rule of control.

As shown in the literature on first language acquisition and as discussed above, first language learners, adult second language learners, and adult prelingually deaf learners of English all seem to overextend the MDP as a strategy for acquiring infinitive complement structures (but see fn. 4). Thus the same phenomenon is being handled similarly by three different populations. There is nothing apparent which sets off any one group from another regarding the acquisition of these structures. It is therefore reasonable to seek an explanation for this similar behavior in the nature of the structures themselves.

Successful interpretation of infinitive complements was linked to the predictability of control in view of the MDP. In terms of markedness the predictable sentences follow the unmarked application of the rule of control under which the MDP applies. The unpredictable sentences do not follow the unmarked application of the rule and are accordingly misinterpreted by significant numbers of learners. This fact and the fact that most of the unpredictable sentences are still misinterpreted by subjects at the high proficiency levels (Table 3) is proof that these structures are acquired late and that markedness might in some way be responsible.

White (1980:97) asserts that 'claims about markedness...are claims about acquisition in real time, about the likely course of acquisition...' and further that 'a correlation may be found between acquisition orders and the predictions of markedness.' Conversely, White (99) maintains that 'if marked rules are indeed acquired late, this is confirming evidence for their marked status...' She cites C. Chomsky's (1969) finding that, while promise and ask 'question' were both acquired late, ask was acquired later than promise because ask is not consistent in its violation of the MDP. That is, there are two verbs ask, one which follows the MDP ('request'), one which violates it ('question'). Hence one form can be marked relative to another marked form and therefore acquired later than the less marked form.

Given the varying percentages in Tables 2 and 3, an explanation for this variation might be found in terms of markedness or other manifestations of linguistic complexity. First of all, just as with C. Chomsky's first language learners, promise (sentence D) poses less of a problem than ask 'question' (sentences J and O) overall for the sencond language learners and the prelingually deaf subjects (see Table 2) and is mastered by all second language learners and all but 18.8% of the deaf learners at the high proficiency level (see Table 3). J and O are still misinterpreted by large numbers of both groups at that level. These facts lend support to the greater degree of markedness attributed to ask due to its inconsistency.

In sentences G and A, where ask does conform to the MDP, subjects are more successful; yet G is overall more difficult than A. A follows the most general application of the control rule. In G, however, control is assigned to the subject NP in the absence of a controller in the verbal complement. Since ask 'request' admits two possible complement structures and since ask is inconsistent anyhow with regard to the MDP, G may be considered more complex than A. Those subjects who misinterpret G anticipate a controlling NP in the verbal complement which is not there. Again, relative difficulty even among the predictable sentences can be explained in terms of markedness.

Returning to the unpredictable sentences, the verb *say* in E is highly marked relative to many other control structures in English. Sentence E can either be considered elliptical for a sentence like 9 in section 2 above, where the deleted *for NP* will be understood from context, or else *say* might be analyzed as a member of a small class of verbs which assign complement control but have no NP in the verbal complement to serve as a controller. In any case, E lacks an overt controller. In addition, *say* appears most frequently with a *that*-complement to express indirect speech. Its usage in E is quite idiomatic.

Like E, sentence J also lacks an overt controller by virtue of an elliptical *by*-phrase. Sentence O contains a controller, but it is the subject NP *Tom*. Highly marked E, J, and O are the sentences most frequently missed by both groups. It is not clear why E would be less difficult, relative to J and O, for the prelingually deaf subjects than for the second language learners. Since the deaf subjects have all completed 12 or more years of formal education and since they have been exposed to English for much of their lives despite their language deficiency, they might possibly be more familiar with the idiomatic usage of *say* in E. Such structures would be common in a classroom setting where a teacher might frequently utter sentences like *I said to sit down*. Such a sentence would be easily understood from context.

The verb explain is similar to say in that it may exhibit elliptical control as in sentence K (or it might be marked for complement control; see fn. 7). K is still somewhat troublesome at the high proficiency levels. Why K is considerably easier than E might follow from the fact that its associated complements (wh + infinitive, wh + clause, that + clause) all have a high frequency of occurrence. Furthermore, unlike say, the semantics of explain is consistent in that one anticipates a recipient (i.e. a controller) of the explaining.

Sentences M and N are passive like sentence J, but they are different from J since remind and tell both conform to the MDP. In a passive sentence control seemingly reverts to the subject NP.[8] Maratsos (1974) found that 4- and 5-year-old first language learners who were capable of understanding passive sentences were also capable of assigning control properly. The same appears to be true of the adult learners: M and N are interpreted with greater accuracy at the high proficiency levels. The fact that subjects perform better on M and N than on E, J, O might indicate that a passive sentence containing a verb that consistently follows the MDP is inherently less complex than structures containing idiosyncratic ask 'question', or say with an elliptical controller.

Why M is easier than N should follow from the fact that M is a full passive with an explicit by-phrase. N lacks a by-

phrase and contains the confounding relative pronoun whom, which is presumably interpreted as the controlling NP by many of the subjects.

As for the order of difficulty among the predictable sentences--H, F, G, I, A, L, C, B--the second language learners have most difficulty with H and F, both of which contain wh-words. For these subjects the wh-word seems to add to the complexity of the infinitive complement structure. For the deaf subjects, on the other hand, the wh-words do not affect comprehension of H and F. Generally speaking, many prelingually deaf individuals ignore wh-words and other functors in processing English.[9]

4. Concluding remarks. It has been shown on the basis of their judgments on the sentences in Table 1 of section 2 that the adult second language learners and the adult prelingually deaf learners of English in this study overextend the MDP in interpreting the logical subject of the infinitive in infinitive complement structures. An overextension of the MDP to these structures is the same strategy which has been observed among children in first language acquisition studies. Thus three populations of language learners employ the same comprehension strategy for the same structures. Difficulty in the interpretation of Table 1 sentences is similar for the two adult populations, as shown by the relative orders of difficulty in Table 2 of section 3. Seven of the sentences are misinterpreted by more than 15%

of all subjects and are shown to have unpredictable control by virtue of their violation of the MDP. The eight easier sentences all comply with the MDP.

Relative order of difficulty and the fact that subjects still misinterpret most of the unpredictable sentences at the high proficiency levels indicate that certain structures are acquired later than other structures. It can be shown that the inherent nature of the structures themselves is responsible for acquisition orders. Certain forms are marked relative to other marked forms. For example, the verb promise, which violates the MDP, is marked relative to the verb tell, which does not; but ask, which is inconsistent in its violation of the MDP, is therefore more marked than promise. Accordingly, the details of ask are acquired later than the details of promise, a fact which is supported by the results of this study and the results of first language acquisition studies.

In a study on children's acquisition of structures containing the reciprocal pronoun each other, Otsu (1981) found that children began to honor the Opacity Condition, a principle affecting the distribution of each other (see N. Chomsky (1980) for details) only after they had acquired the details of the complementation system. Similarly, details of the assignment of a logical subject for an infinitive (a controller for PRO) can only be acquired after the learner recognizes that an infinitive needs to be assigned

a subject. Learners must also have acquired the syntactic and morphological facts associated with passive and the principles of deletion that yield elliptical structures. At that point they will properly apply the MDP as the unmarked instance of the application of the rule of control, given that marked properties such as subject control are associated with the relevant lexical items.

Many questions regarding the interaction of linguistic phenomena and the impact of this interaction on the acquisition process need to be answered. To answer some of these questions, more production studies need to be conducted. Regarding first language acquisition, Bowerman (1979;303) emphasizes that further research should focus on how and when children begin to produce a variety of linguistic structures including infinitive complement structures. To be sure, there is a need as well for research on production in second language acquisition and in the area of language and deafness. Production data will contribute to a better understanding of the acquisition of infinitive complement structures and the properties and restrictions associated with them.

Footnotes

*A shorter version of this paper was presented at the 56th Annual Meeting of the Linguistic Society of America, New York, December 27-30, 1981. I am indebted to my former colleagues at Boston University's Center for English Language and Orientation Programs for their assistance in gathering data from second language learners and to John Albertini for his assistance in gathering data from students at the National Technical Institute for the Deaf. I am also indebted to Joe Bochner for his valuable comments and to Vince Samar for his valuable comments and for his statistical support. I would also like to thank the numerous students at both institutions mentioned for their participation in this study.

[1]In N. Chomsky's (1980:33-43) theory of control, the MDP includes the notion of nearness, which is based not only on the distance of an NP from the infinitive but also on other structural relations within the sentence. By that account sentences like (a) do not pose a problem for the MDP.

(a) John told the man next to Bill to leave.

Under a definition of the MDP based on distance alone, Bill would be the understood subject of to leave, which is of course not

the case. C. Chomsky (1969) and the studies cited below have not tested sentences like (a), so the simpler definition of the MDP will suffice for now.

[2]Some studies have addressed other, nonsyntactic matters involving verbs like ask and tell. Warden (1981) used a technique involving pictures to test children's knowledge of who is asking, who is telling, who is being asked, and who is being told. Children had to respond, by coloring in their choices, to the various combinations of stimulus sentences such as John is asking/telling Peter where to put the box. Which is John/Peter? Warden's results revealed that 5-year-olds (his subjects ranged in age from 4;10 to 5;9) could successfully identify who was asking, who was telling, and, slightly less successfully, who was being told. But they could identify who was being asked at no better than chance level. He maintains that these results say little about children's lexical knowledge of ask and tell. They show only that 5-year-olds can recognize the relative meanings of the two verbs. Bock and Hornsby (1981) have studied children's ability to distinguish between ask 'request' and tell, both MDP verbs. Interestingly, Bock and Hornsby found that children between the ages of 2;6 and 6;6 do in fact understand the differences between the 'directive' sense of ask and tell. They observed that children were more polite when asking than when telling.

[3]One study, Maratsos (1974), argues against the MDP altogether. Maratsos claims that the MDP fails to account for the interpretation of passive sentences such as (a).

(a) Bill was told by John to leave.

In (a), the subject NP Bill will do the leaving despite the fact that John is immediately to the left of to leave. Using the case grammar framework of Fillmore (1968, 1971), Maratsos (1974:701) suggests that children use a semantic-role principle in interpreting infinitive complement structures. In case grammar terms, John is the Source and Bill is the Goal both in sentence (a) and in sentence 1 above. In these terms, the understood subject of an infinitive complement is the Goal with respect to most verbs, whether the sentence is active or passive. With promise the understood subject is always the Source. Maratsos claims support for the semantic-role principle from an experiment with 4- and 5-year-olds. Those children who were capable of understanding passive sentences could also correctly interpret the subject of the infinitive.

However, this fact does not prove that a theory of control based on the semantic-role principle is superior to a theory of control based on the MDP. Within N. Chomsky's (1980:81-2) theory, the MDP (or the principle of nearness) still holds in a passive sentence, where the understood subject of an infinitive in a structure in which there is complement control is the trace

of the object NP which has been moved to subject position. Assuming trace theory, the MDP may be maintained as a general interpretive principle without the need for two control rules, one for active and one for passive. The semantic-role principle fails to capture any kind of syntactic generalization. Moreover, Maratsos' current work (Wanner and Maratsos 1978) postulates gaps in certain structures like relative clauses which behave very much like the traces of N. Chomsky's framework. Wanner and Maratsos (130) describe a mechanism by which the subject of a passive sentence would have its function label changed from 'subject' to 'object'. Though the authors do not address the question of control, their framework is not incompatible with the kind of control rule which is based on the MDP and which incorporates trace theory.

[4]Tavakolian (1978) identifies a stage during which 3-year-olds give subject-controlling responses to both promise and tell structures. This fact suggests an earlier strategy which may be the converse of the MDP. Specifically, Tavakolian explains the performance of the 3-year-olds in terms of her conjoined-clause analysis, a strategy which children apply when interpreting relative clauses and other complex structures. According to the conjoined-clause analysis, children analyze multi-clause sentences which they have not yet mastered into two conjoined simple clauses and interpret the missing subject of the second clause as identical to the subject of the first clause. Thus

Tavakolian sees a developmental progression in the acquisition of promise and tell from a generalization of the conjoined-clause analysis through a generalization of the MDP and finally to the adult grammar.

[5]As pointed out in Hatch (1978:61), however, there are differences between first and second language acquisition despite the many similarities that have been shown. Gass and Ard (1980), for example, emphasize that first language data are obscured by matters of cognitive development while second language data are not. Accordingly, they show that there is a greater correspondence between language universals and second language acquisition data than there is between language universals and first language acquisition data, and they rely more on second language data to support theoretical linguistic constructs generally.

A specific area in which the two populations differ is in the interpretation of NP conference (i.e. when a noun and pronoun may refer to the same entity). They do not appear to pass through similar stages in the acquisition of coreference principles as they do in the acquisition of infinitive complement structures. Berent (1980) shows that second language learners do not violate certain universal principles associated with coreference, such as the fact that him and Tom may be coreferential in (a).

(a) Next to him, Tom saw a dog.

However, with first language learners, C. Chomsky (1969:102-11) observed among some children a stage in which coreference was impossible whenever a pronoun preceded a noun, a fact which violates universal principles of the adults grammar. Berent (forthcoming) shows that many prelingually deaf adult learners of English actually retain early first language strategies in assigning coreference. So there are indeed ways in which first language learning differs from second language learning and furthermore ways in which language learning by deaf individuals resembles both populations.

[6]I would like to thank Joe Bochner for pointing out this fact to me. See Bochner (1978:182), where it is hypothesized that deaf subjects know more facts about who than they do about that and which.

[7]Following N. Chomsky's (1980:33) rule of control, when there is no controller for PRO, then PRO is assigned the index arb for arbitrary control. This is what happens in structures such as it is unclear what PRO to do. Chomsky assumes +SC (subject control) as the only marked lexical property affecting control. For the verb say in structures like E one could possibly argue for a marked lexical property '+CC' (complement control), where assignment of a controller for PRO would exclude the subject NP. This argument will not be pursued here.

[8]Actually, following N. Chomsky (1980), the controller in a passive sentence is the trace left by an object NP which has been moved to subject position. Under this analysis the generalization captured by the MDP is maintained without the need to specify two control rules, one for active sentences and one for passive sentences. On the details of trace theory as it relates to passive, see N. Chomsky (1977b:81-2).

[9]Kathleen Crandall (personal communication) points out that many deaf individuals disregard a wh-word if a proper noun is contiguous with it. In the absence of a contiguous proper noun, they find another proper noun in the sentence and use it to establish some grammatical relation. Bochner (1978) found that many deaf individuals interpret subordinating conjunctions such as that, which, when, and because as coordinating conjunctions.

[10]Judgments on the sentences of Table 1 were also gathered from a third group, 23 speakers of Greek studying English at Protypo English School Antoniou in Volos, Greece. The data on that group have not been reported in this study since the proficiency levels of the individuals were considerably higher than the levels of the other two groups. There were therefore virtually no errors on most of the sentences. Where there were errors, the Greek speakers did do significantly better on sentence K

(8.7% erring) than on sentence E (43.5% erring), attesting to the greater complexity of [redacted]. The only other sentences misinterpreted were J (69.6%) and [redacted] (13.0%). The fact that J, E, and O were the most difficult is consistent with the findings of this study.

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