

Coherence and Grounding in Discourse

Russell S. Tomlin

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COHERENCE AND GROUNDING IN DISCOURSE

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COHERENCE AND GROUNDING IN DISCOURSE

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PREFACE

In the spring of 1984 a symposium was held at the University of Oregon on the relationships holding among discourse relations like *foreground* and *background information*, linguistic or cognitive units like *events*, and linguistic coding. The basic themes of this symposium derived from early research by Grimes (1972), Longacre (1968, 1974, 1977), Hopper (1979, 1980), Jones and Jones (1979), and others. Their work proposed that some of the information in discourse is more central or significant than other, simply elaborative, information. For narrative discourse, this discourse relation has been argued to be related to the cognitive unit of *event*, and coded by numerous syntactic devices, including tense-aspect, word order, subordination, transitivity, participant coding and voice.

It was our feeling that this research, while an important beginning, was also too simplistic, depending for its insight too much on introspection and argument by example. The purpose of the symposium was to expand our understanding of the relation holding between discourse relations, cognitive units, and linguistic coding and to increase the empirical rigor of our efforts to do so.

Each of the twenty papers in this volume explores one or more of the following themes.

1. How point of view, or the salience of information in discourse, affects the organizational coherence of text and discourse (Carlson, Erbaugh, Flashner, Fox, Givón, Mithun)
2. The concept of cognitive and linguistic *event* and how events are reflected in text and discourse organization (Dixon, Pawley, Szatrowski, Thompson, Tomlin, Wald)
3. The nature of the linguistic coding of events and other kinds of significant information (Carlson, Demuth, Erbaugh, Flashner, Fox, Kumpf, Lambrecht, Marchese, Rafferty, Ramsey, Thompson)
- 4) The cognitive bases or cognitive correlates of the linguistic organization of discourse (Chafe, DeLancey, Dixon, Pawley, Tomlin)

Support for the Symposium was provided by the University of Oregon and by the Shao Lin West Foundation.

We hope that colleagues interested in problems of discourse organization, discourse processing, and functional grammar will find useful the contributions included here.

Russell S. Tomlin

NARRATIVE CONNECTIVES IN SÙPYÌRÉ

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Background

Sùpyìré¹ narrative makes heavy use of sequential connectives and a sequential aspect marker. Generally only the first clause of a narrative is marked for tense. All subsequent main line (ML) clauses² are marked with one of the two sequential connectives *kà* and *ma*, which mean roughly “and then”, and most are marked with the sequential aspect marker *si*,³ without any other tense or aspect marking.⁴ The two sequential connectives also function as switch reference markers. As a first approximation, one might say that *kà*, which must occur with an overt subject, signals change of subject.⁵ *ma*, which must occur with a zero subject (zero anaphora)⁶ signals continuity of subject. While *kà* only occurs in ML clauses in narrative, *ma* also occurs frequently in process texts, where the usual aspect is habitual, and the actions are encoded in chronological order. *ma* also signals same subject in these texts.

The use of these connectives is illustrated in (1) below, the first four clauses from a folk story. Note that when the sequential aspect (SEQ) marker *si* follows a pronoun or the connective *ma*, it loses its [s] and assimilates in quality to the preceding vowel.

- (1) a. *ceè-ŋi wà u mǎ?a pyà si*
woman-DEF/G1s IND/G1s PN/G1s PAST child
give birth to
A certain woman gave birth to a child.
- b. *kà u ú fǎá*
PN/G1s SEQ wilt
And she became paralysed.

- c. *kà u ú nkárá á sà ù wà*
 PN/G1s SEQ go go PN/G1s throw
dù-gé jwò-gé na
 stream-DEF/G2s mouth-DEF/G2s on
 And she went and threw her away (= exposed her) at the edge
 of the stream,
- d. *ma á ntàs⁵ 'yw⁵*
 SEQ toad take
 and took a toad (in her place).

In the above example, the tense is set for the entire narrative in the initial clause, (1a). Subsequent clauses are marked only with *sí*. Although both participants are gender 1 singular, and are thus both referred to with the pronoun *u*, there is no ambiguity of reference. The *kà* in b and c signals that the subject of its clause is different from that of the previous clause. The *ma* in d signals that the (understood) subject of its clause is the same as that of the previous clause.

The use of *ma* after a clause with habitual aspect is illustrated in the following examples, which is a parenthetical meta-comment embedded in a narrative. Exactly parallel examples could be gotten from a process text.

- (2) a. *nànjiì-wè mǎ?a cí-nàmp⁵-ŋɔ jye*
 youth-G1s HAB woman-stranger-G1s see
 Whenever a young man sees a stranger-woman
- b. *ma á jwó*
 SEQ say
 he says . . .

A careful examination of a Sùpyiré narrative will quickly lead to the conclusion that the above picture of the function of *kà* and *ma* is too simple. The switch reference function of *kà* and *ma* works consistently only in sequences of ML clauses. As soon as a non-ML clause intervenes, the situation becomes much more complicated. The most obvious problem for the switch reference system is what is to be the point of reference for the change or the continuity. Will the change/continuity be marked relative to the immediately preceding, non-ML clause, or will it be relative to the previous ML clause, skipping over the intervening non-ML clause? There are, of course, different sorts of non-ML clauses, and it appears that they have different effects on the functioning of the switch reference system. But there are a number of examples where the alternation of *kà* and *ma* does not seem to function as a switch reference sys-

tem at all. The hypothesis put forward here, which I will try to substantiate in the rest of this paper, may be stated as follows:

- (3) a. *kà* marks thematic discontinuity (i.e. begins a new section/thematic paragraph);
- b. *ma* marks thematic continuity.

The above hypothesis is intended not only to cover the problem cases mentioned above (i.e. following a non-ML clause), but also the switch-reference function of *kà* and *ma*. That is, I am making the explicit claim that, in Sùpyìré at least, switch of subject is merely one kind of thematic discontinuity. As well be seen in the final section of the paper, there are some indications that different subject marking in at least some other languages may behave in a similar fashion.

Before continuing, it is necessary to point out that *ma* may occur in three different forms: 1) together with the sequential aspect marker *sí* (*sí* becomes [á] in this environment, yielding [maál]), as in 1d above; 2) alone, as in example (4) below⁷ (note that with this form of *ma*, the sequential aspect is signaled by zero); or 3) a reduced form *à*, as in the middle of 1c above.

- (4) a. *kà u ú sí*
PN/G1s SEQ born
Then she was born,
- b. *má lye*
old
and grew up,
- c. *mà sá nɔ kwɔ̃-mɔ*
go arrive cut-G5
and arrived at the age of marriage.

The reduced form *à* may only occur when it directly follows a verb, and when that verb and the verb following form a closely-knit pair semantically. One of the verbs may be an “adverbial” verb, meaning, e.g. “again”, “finally”, “quickly”, “softly”. Or the two verbs may express one complex event, as in “take and come” for “bring”, or as in “go to throw away” in (1c) above. These pairs are thus equivalent to the serial verb constructions found in so many West African languages. The subject of the verb following *à* is *always* the same as the subject of the preceding verb. Its occurrence can therefore tell us nothing about a function of *ma* beyond same subject marking, and I have chosen to leave it out of the present study. Thus in all discussion below, *ma* refers to the unreduced forms of the conjunction.

Method

The data base for the study reported here consisted of 25 relatively planned narratives (= 2,288 clauses), and a lengthy, spontaneous conversation (= 1,770) clauses). The planned narratives include folk stories, personal narratives, and histories. They were "planned" in the sense that there was ample time between the request for a text and the actual taping for the narrators to think about what they would say. The conversation was between three men, and consists of about two-thirds narrative.

Each *kà* and *ma* clause was tabulated according to the type of clause immediately preceding, and according to whether or not its subject was same or different than the subject of the preceding clause and of the preceding ML clause.

A serious problem for a study of this sort is how to operationalize such notions as thematic discontinuity. I chose to follow the suggestion in Givón (1983b) that a change in time, place, participant, or action is a reliable guide to identifying a break in thematicity. These criteria are not entirely satisfactory: such changes only *tend* to coincide with a thematic break, they are not the break itself. It is not difficult to find instances where there seems to be a thematic break, yet none of the above changes is present. And conversely, there are instances where one or more of the changes are present, yet there seems to be no thematic break. "Seems to be", however, is not a notion that will take one very far in analysis, and so one is forced back to the use of criteria which, although not completely satisfactory, are nevertheless relatively objective.

The above considerations mean that the conclusions presented in this paper must be regarded as tentative. The final test of the hypothesis in (3) above must await an independent, reliable method of determining thematic boundaries, perhaps something like the experimental techniques described in Tomlin (this volume).

All occurrences of *kà* and *ma* which could not be explained by the initial hypothesis of a switch reference function were examined to see if they coincided with any of the changes noted above. The hypothesis in (3) predicts that *kà* should so coincide, whereas *ma* should not.

Findings

As pointed out above, the evidence for the switch reference function of *kà* and *ma* comes mainly from sequences of ML clauses. Table 1 presents this

evidence. In all the following tables, DS and SS mean different subject and same subject from the following *kà* or *ma* clause.

ML clause	<i>kà</i>	<i>maá</i>	<i>mà</i>
DS	345 = 98.6%	2 = .7%	0
SS	5 = 1.4%	287 = 99.3%	176 = 100%

TABLE 1
Occurrences following a ML clause

It is clear from this table that in the great majority of cases directly following a ML clause, the use of *kà* may be explained simply as marking a change of subject.

Of the five cases of *kà* following a SS ML clause, three co-occur with a change in place. In the following example, translated fairly literally, there are other indications as well that there is a thematic break before the *kà* in question:

- (5) a. About midnight, *kà* a python came into the compound.
- b. This found my father
- c. he was with a male dog (= he had a male dog)
- d. This dog had lain down at the door of my father's house.
- e. *kà* he (= the dog) heard the sound of the snake coming
- f. *kà* he got up and went and barked at it.
- g. then return and bark at the door
- i. *ma* scratch it
- j. *ma* return to where the snake was . . .

Here the anterior, background section (5b-d) is followed by a ML clause which relates it to the previous ML clause (5a) (for the use of *kà* in (5e) after the anterior in (5d), see below). The following clause, (5f), in addition to encoding a change in place, serves to begin a new section talking about the dog's repeated barking at the python.

A similar case is seen in the example below:

- (6) a. *kà* I finally stopped
- b. *ma* said
- c. "aa, I had better return from here."
- d. If I don't return from here,
- e. I'm not with anyone here;

- f. if it (= the lion) attacks me
- g. I'll remain here (concerned)
- h. no-one will know where I am."
- i. *kà* I stopped with my loaded gun.
- j. *kà* I returned while the night was coming
- k. When the night had gotten dark,
- l. *kà* it (= the lion) afterwards came . . .

Here, (6i) essentially repeats (6a). The reported speech in (6b-h) gives the reason for the stopping in (6a), and (6i) simply repeats (6a) with an added adverbial phrase. (6j) then begins with *kà*, although it has the same subject. It is obvious that (6i), as a repetition, is "less ML" than a normal ML clause.

In any event, it is certain that a change in time and/or place is not in itself sufficient to trigger the use of *kà*: there are many examples where *ma* is used, as in the following:

- (7) a. *kà* they killed it (= the python)
- b. *kà* my father took it and went to his place.
- c. In the morning, *ma* grilled and cooked it
- d. (for) them to eat . . .

In (7c) *ma* is used in spite of the change of place in (7b) and the time lapse in (7c). Another example of the use of *ma* in spite of place change is (5j) above.

The two cases of *ma* following a different subject ML clause are given below:

- (8) a. *kà* they (= a mother with her infant on her back) bathed
- b. *ma* went and put the beds down
- c. *ma* said . . .
- (9) a. *kà* the one from Sere_i said
- b. the one from Fantere_j should go with the magic powder,
- c. he_i would stay with the land:
- d. he_i was the elder brother,
- e. he_j would stay with the magic powder,
- f. but he_i would stay with the land.
- g. *kà* the land became the possession of the people of Sere
- h. *ma* gave the magic powder to the people of Fantere.
- i. It is for this reason that they go to (help) bury the people of Sere.

In (8a), the subject includes the mother and her obstinate child who

refuses to get down off her back. But the subject of (8c) is the mother only. Although both the mother and child are included in the subject of (8a), only the mother would be actively involved as agent in the action of bathing. The use of *ma* acknowledges this dominance, and continues reference to the mother only. The case in (9) is similar: the elder brother from Sere is the agent in the passage. This agenthood lies behind the event recorded in (9g). What really happened was that the man from Sere kept the land for himself (and thus it became the inheritance of his descendants), and gave the magic powder to his younger brother, the ancestor of the people of Fantere. It seems that in both (8) and (9), *ma* may be used to indicate an agent as subject, although it is not the subject of the previous clause, as long as the reference is easily recoverable from the context. It is to be noted that this is not a very common strategy, only occurring twice in the corpus.

With the addition of intervening non-ML material, the proportion of *kà* clauses which do not simply signal different subject increases. Table 2 gives the numbers of occurrences after indirect reported speech (RS) and Table 3 those after direct RS.

previous ML clause	reported speech	<i>kà</i>	<i>maá</i>	<i>mà</i>
DS		36 = 80%	0	0
SS		9 = 20%	4 = 100%	0

TABLE 2
Occurrences after indirect reported speech

previous ML clause	reported speech	<i>kà</i>	<i>maá</i>	<i>mà</i>
DS		165 = 96.5%	0	0 =
SS		6 = 3.5%	26 = 100%	5 = 100%

TABLE 3
Occurrences after direct reported speech

A comparison of Tables 2 and 3 shows that indirect RS is more disruptive than direct RS: a much higher proportion of *ka* clauses have SS as the previous ML clause when indirect RS intervenes. This is in part due to a special use of indirect RS. In five out of the nine cases of SS *kà* from Table 2, the indirect RS functions not primarily as RS, but as a means of encoding intention. (10)

below is an example:

- (10) a. Once Monkey said
- b. that he would look for and eat a person.
- c. *kà* he went and found a girl . . .

These are the first three clauses of a folk tale. (10a) and (b) introduce the major character and state his intention. In (10c) the story proper begins, with the putting into execution of the intention. Note that the *kà* clause is SS with *both* the previous ML clause and with the intervening RS clause.

In the other four of the nine cases, the *kà* clause coincides with a change in time in two cases, as in (11) below:

- (11) a. *kà* she said
- b. "Okay, take her."
- c. *kà* the man took out 100 francs
- d. *mà* gave (them to her)
- e. (saying) that he had taken her.
- f. The next day, *kà* you ended up going
- g. *mà* entering into negotiations for (obtaining) her in (marriage)
- h. *kà* it became a marriage . . .

Here the time lapse in (f) also coincides with the end of the conversation. This surely could be classified as a "change of action" if anything can. The remaining two of the nine cases from Table 2 do not seem to be as amenable to explanation. One of these is given below:

- (12) a. *kà* Hyena said
- b. "(Although) I'm so important, you jump up and sit on that small box."
- c. *ma* grabbed the cock and put it on a large box
- d. *ma* took that one and went home.
- e. When he had arrived
- f. *ma* called his compound people and put them in the house.
- g. A cripple was there,
- h. *ma* closed the house on him
- i. (saying) that he would not be put in clothes with them,
- j. *ma* said again
- k. that Cripple should lean sticks against the house (to barricade the door)
- l. *kà* Hyena opened the box

- m. *mà* found its whole interior
- n. full of big snakes . . .

In this example, *ma* is used repeatedly to indicate SS after a variety of non-ML clauses, including direct and indirect RS. But in (l) *kà* is used. This may be due to the importance of the action in (l): the rest of the story has been building up to this point, and exists in some sense for the sake of this action, which consequently may be characterized as the peak of the narrative.

Four of the six cases of *kà* following a SS ML clause and direct RS, from Table 3, are parallel to the cases following indirect RS: two coincide with the end of a conversation and a change in place, and two are of the intent-execution type noted above. The other two cases are more difficult to characterize. One of them is in (6) above: (6i) is SS as (6a). As noted above, (6i) is not really ML in the sense that (6a) is, in that it is mostly a repetition of (6a). This use of *kà* for repetition occurs in other contexts. In each case, as in the example (6), a new item of information or clarification is added. Whether the clause functions mainly to give this added information, or if the added information is put in to avoid the tediousness of exact repetition, I don't know. What is clear is that in these cases *ma* would have implied sequence, and must therefore be avoided.

To sum up, 11 out of the total of 15 cases of *kà* following SS ML and RS may be plausibly be said to coincide with a thematic break using the criteria used in this study. There are 7 instances of the intent-execution break (change in action), four cases co-occur with a change in time and/or place, and three of these coincide with the end of a conversation.

Turning now to occurrences following adverbial time clauses, we find a more complicated situation.⁷ Table 4 summarizes the findings:

	previous ML clause	adverbial clause	<i>kà</i>	<i>maá</i>	<i>mà</i>
a.	DS	DS	25		
b.	DS	SS	2		
c.	SS	DS	12		
d.	SS	SS	4	7	1

TABLE 4
Occurrences following adverbial clauses

From Table 4 it can be seen that if either the time clause or the previous

ML clause has a different subject, then *kà* will be used. However, the number of examples following configuration (b) is perhaps too low to permit generalization. The split between *kà* and *ma* following configuration (d) is more interesting. In all four cases of *kà* following (d), the time clause ends in the verb *kwɔ* "finish":

- (13) a. That day, *kà* you went (to the graveyard)
- b. *mà* gathered them (= firewood)
- c. *mà* found the dead there.
- d. When you finished gathering the firewood,
- e. *kà* you said to them
- f. that they should help you put it on your head
- g. *kà* they came up to her . . .

The adverbial clause makes clear that a previous event has come to a conclusion. The narrative moves on to a new episode. This thematic break is signalled by the use of *kà* rather than *ma* even though both preceding clauses have the same subject. By contrast, the thematic disruption in the cases where *ma* is used seems to be less. Following is an example:

- (14) a. *kà* the man got up
- b. *ma* prepared and went.
- c. When he arrived,
- d. *ma* said
- e. "Good evening, sister-in-law."
- f. *kà* she glanced up at him and said . . .

Here the preparing and going are for the purpose of conducting the conversation which follows (14d). The sequence get up — prepare — go — arrive — say is seen as one complex event, the most important part of which (from the point of view of the plot of the story) is the last event, say. The other cases of *ma* after a time clause are similar. The speaker has chosen to background one event, the time clause, in a series which coheres together as one thematic unit, with the *ma* clause merely continuing the narration within the thematic unit.⁸

The situation after high tone complement clauses is rather different. A common type of complement in Sùpyìré is one in which the subject is a high toned pronoun. This pronoun must be coreferential with the direct object of the preceding main clause. Typical verbs taking this kind of complement are verbs of causation and perception, such as the verb "see" in example (15)

below. Table 5 gives the number of occurrences of *kà* and *ma* clauses following this type of complement clause.

	previous ML clause	complement clause	<i>kà</i>	<i>maá</i>	<i>mà</i>
a.	DS	DS	17		
b.	DS	SS	6	6	10
c.	SS	DS	11	9	1
d.	SS	SS			

TABLE 5
Occurrences following complement clauses

All 16 cases of *ma* (*maá* + *mà*) following configuration (b) (that is, when the preceding complement clause is SS), are in reality continuations of the complement. In these cases, the complement has two clauses, the second of which is the *ma* clause. After a SS complement, *kà* must be used to return to ML: it signals discontinuity with the complement. If the preceding complement is DS while the previous ML is SS (configuration (c)), there is an almost equal split between *kà* and *ma*. All of these *ma* clauses are ML — they do not continue the complement. In three of the *kà* clauses there is a change of place, whereas there is none in the *ma* clauses. There is a hint of the more continuous nature of *ma* in three of the 10 cases, where a kind of parallelism makes the *ma* clause in some sense expected. The following example contains two high tone complements of the verb “see”, (15c) and (e). The use of *mà* in (15d) is evidently due to the parallelism between (15d) and (15b):

- (15) a. When you_j arrived in the bush
 b. *kà* they_j saw some bush cows
 c. they had cut them_j off in front
 → d. *mà* saw some
 e. they had cut them_j off behind
 f. *mà* put them_j in the middle now
 g. *kà* the bush cows sang their song
 h. *kà* the father climbed into a tree . . .

Note also in this example the use of a *ma* clause in (f) to continue the SS complement, and the use of *kà* in (g) to return to ML following a SS complement.

It should also be noted that the absence of examples following configuration (d) in Table 5 is systematic: the high tone complement must always be DS from the preceding main clause.

The situation following negative clauses is somewhat more clear, though fewer examples are available. Table 6 gives the relevant numbers.

	previous ML clause	negative clause	kà	maá	mà
a.	DS	DS	11		
b.	DS	SS		2	
c.	SS	DS	5		
d.	SS	SS	2	3	1

TABLE 6
Occurrences after negative clauses

ma following a negative returns to ML, and does not continue the negativity of the preceding clause. Table 6 shows that when the negative clause is DS *kà* must be used. When both the negative and the previous ML are SS, there is again a split between *kà* and *ma*. It is significant that in one of the two cases of *kà* there is a lapse of time, signalled by a time phrase at the beginning of the *kà* clause. With the *ma* clauses, there is no such change in time. The following example has both a *kà* and a *ma* clause following negatives:

- (16) a. One day, a hunter came
- b. *ma* greeted him (= Monkey).
- c. *kà* he bobbed his head up and down.
- d. *kà* the hunter passed.
- e. He didn't speak again.
- f. ^The next day, *kà* he again found Monkey there
- g. praying
- h. *ma* greeted him.
- i. He didn't return the greeting,
- j. *ma* bobbed his head up and down.
- k. *kà* the hunter said . . .

Note the time phrase in (f), the *kà* clause, and the lack of any time lapse in (j), the *ma* clause. Here (j) is not strictly comparable to (f) in that the previous

ML clause is DS — that is, it is following an instance of configuration (b). An example of a *ma* clause with both the negative and previous ML as SS is given below:

- (17) a. *ká* it (= the lion) afterwards came
 b. *mà* again passed through the same place.
 c. It didn't see another (cow)
 → d. *mà* passed under that little baobab [gesture]
 e. *mà* again went down to the stream.
 f. At that time, the stream was really over-grown . . .

Note here, too, the absence of time lapse. Although there is a change in place, this is continuous with the change of place in the previous ML clause. In fact, the lion's passing through the village and out again may be said to be the theme of the entire paragraph.

The use of *kà* and *ma* after anterior clauses provides further evidence that *ma* signals more continuity, although, again, the numbers of examples are very small.

	previous ML clause	anterior clause	<i>kà</i>	<i>maá</i>	<i>mà</i>
a.	DS	DS	10		
b.	DS	SS	2	2	2
c.	SS	DS	6	2	
d.	SS	SS			

TABLE 7
 Occurrences following anterior clauses

Just as with complement clauses, when the anterior clause is SS (configuration (b)), the *ma* clause continues the anteriority of the previous clause, and does not return to ML. Example (18) below shows the use of *ma* (18h) to continue the anteriority of the previous clause. *kà* is used in (18i) to return to ML, even though the previous clause has the same subject. Use of *ma* in (18i) would presumably have implied the continuity of the anteriority of the previous passage. (For another example of *kà* after a SS anterior, see (5e) above.)

- (18) a. *kà* she said "OK."
 b. *ma* went to the stream
 c. *ma* was washing the pants

- d. *ma* throwing water on the people.
- e. A certain old woman was in the village.
- f. She had heard the words of Njible and her mother in the bush.
- g. That day, she had hidden
- h. *ma* watched them.
- i. *kà* she also came to the stream to wash clothes
- j. *mà* found Njible
- k. she was throwing water on the people . . .

Again just as with complement clauses, when the anterior clause is DS (and the previous ML is SS) both *kà* and *ma* clauses are ML. Two of the six *kà* clauses are repetitions of the sort mentioned in the discussion of *kà* following RS above. Two others co-occur with a change of place. The rest are not explicable at this stage. The following example shows the use of *ma* in a ML clause even after a lengthy RS and an anterior. The continuity of action is obvious:

- (19) a. *kà* she (= Monkey, disguised as a woman) went out quickly far into the bush
- b. *mà* took her money skin and put it on
 - c. *mà* ran round the termite mound
 - d. saying
 - e. “Termite mound, termite mound, you said
 - f. that they would know me,
 - g. that they would know me,
 - h. (but) no-one knew me.”
 - i. The man had bought a comb for her, and a scarf, and a cloth,
 - j. *ma* took them off and put them down
 - k. *ma* ran around the termite mound with her monkey skin
 - l. *ma* sang the song . . .

It is obvious from the context that (19i) was inserted as a detail necessary for the proper understanding of the second verse of the song following (19l) (the first verse is (19e-h)). Its intrusion does not greatly disturb the thematic coherence of the passage as a whole.

The use of *ma* to continue the habitual aspect has been mentioned above (see example 2). A *kà* clause following a habitual clause will return to a punctual/perfective aspect. There are only five such *kà* clauses in the data, and only one of these follows a SS habitual clause:

- (20) a. She_i would go out
 b. and go to the graveyard
 c. and gather firewood.
 d. One day, *kà* you_i went . . .

Here the habitual clauses (a-c) as a section are arguably ML: that is, they encode events which are subsequent to the previous ML events (not given here) and which precede the event in (20d). A *kà* clause is used to discontinue the perfective aspect, and to continue the narration with the more usual punctual encoding of ML events.

Discussion

That part of the function of *kà* is to mark DS is clear from the evidence presented above. In this connection, note that in Tables 4-7, only *kà* appears after configuration (a), that is, when both the preceding clause and the previous ML clause are DS. Given the limits of the methodology noted above, a reasonable case can also be made for hypothesis (3) above: in a significant number of cases, where *kà* and *ma* are used with similar preceding environments, the *kà* clause coincides with a change in time, place, or action. *ma*, on the other hand, is used to continue aspects such as habitual and anterior, and the subordination of complement clauses. Some of the unexplained examples could perhaps be resolved if better syntax-independent techniques for determining thematic boundaries were available.

Assuming, meanwhile, that the hypothesis holds, it is interesting to note that the discontinuity signalled by *kà* is relative to the immediately preceding context only. Since *kà* marks a ML clause, it marks continuity of the narration. The set of ML clauses is in some sense what the narrative is “about”. Each ML proposition continues the narrative, and *kà* therefore has an important cohesive function. In a sense, it returns to, or better, begins a new section of the larger or global theme. Thus from the point of view of a macro, text-wide theme, *kà* may be said to fill a function of continuity, or at least development. On a micro, local level, however, as is clear from the evidence presented in this paper, *kà* marks discontinuity with what precedes. Frequently, what precedes is non-ML, i.e. background material. From the text-wide point of view, this material is non-thematic. *ma* may often be used inside such non-thematic material to continue its non-ML status. *kà* is used to “reinstate” the (thematic) narrative.

It is well known that in switch reference systems there are almost always

“exceptions” to the SS/DS marking which pose problems for a simple analysis. For example, Longacre (1972) points out that in many New Guinea languages, the switch reference system skips over temporal clauses as if they weren’t there. In at least one New Guinea language, Timbe, the DS marker is used to introduce a non-ML, background passage, and the SS marker is used to reinstate the ML.⁹

I have found two other cases of the use of a DS marker to mark thematic discontinuity even when there is not a change in subject. The first of the two languages (brought to my attention by Robert Longacre) is Paez, a Macro-Chibchan language of Colombia. Gerdel and Slocum (1976) state that “on the paragraph and discourse levels . . . a change of situation — even without change of subject — can result in the selection of *atsa'* ‘and-DS’.” The sole example given is from a process text, where the sentence introduced by *atsa'* gives an alternative to a particular procedure.

More information is available about the other case, the two closely-related Uto-Aztecan languages Pima and Papago. Scancarelli (1983) states that “*ku-* is not a different-subject marker [as has been asserted by various authors], but rather is a marker of discontinuity, and . . . change of subject is just one kind of discontinuity”. Looking at the specific places where *ku-* marks discontinuity, there are striking parallels with Sùpyiré *kà*. According to Scancarelli, “*ku-* is used to introduce a main clause when that clause represents a shift (in focus of attention, point of view, or time frame) — a discontinuity of sorts — from the previous clause. A change in subject is one kind of discontinuity; others include: . . . a shift from direct or indirect speech or thought to action (i.e., to the sequence of main events in the text); a shift from description or elaboration to action; or a change in time”. In addition “*ku-* . . . is used to introduce a minor flashback, or a recapitulation of events already described.” Note the similarities here to the use of *kà* in Sùpyiré to move to action after a statement of intention in RS, and as a repetition, or recapitulation of a previously mentioned event.

So many and striking similarities cannot of course be accidental. The evidence strongly supports the claim made here (and in Scancarelli, 1983), that change or continuity of subject is just one kind of thematic change or continuity, and this makes the extension of the use of a DS marker to mark other kinds of discontinuity an effective strategy of communication. This corroborates, from a different perspective, the claim made in Givón (1983a) that questions of thematicity are relevant to any understanding of the narrow notion of switch reference.

NOTES

9) Sùpyiré is a Senufo language of the Gur or Voltaic family of Niger-Congo. It is spoken by about 200,000 people in southern Mali. The texts on which this study is based were collected by myself in the village of Farakala, Mali, in 1980-83. The dialect they represent is known as Kam-polondugu. I am not sure how far the findings discussed here are true for other dialects of Sùpyiré. I would like to thank Ely Sanogo of Farkala for helping me in the painstaking task of collecting and transcribing texts.

2) I use main line in the same sense as Hopper (1979), that is, to describe narrative clauses which encode events in their natural chronological order. These clauses constitute the backbone of the narrative, what the narrative is "about". With the exception of adverbial time clauses (see note 6) and some complement clauses, virtually all ML clauses are marked with a sequential conjunction, and most are marked with the sequential aspect marker.

3) Compare the situation in Swahili as reported in Hopper (1979), where the initial verb in a narrative is marked with the preterite prefix *li-*, while subsequent main line verbs are marked with the prefix *ka-*.

4) The sequential aspect marker may co-occur with the progressive aspect marker to encode a durative event. Occasionally such an event is simultaneous, or overlaps with the event encoded in the preceding or following clause.

5) Herber (n.d., vol. 2, p. 12) calls *ma* a "conjunctive substitute particle and says "it functions as a conjunction in connecting one verb to another and . . . as a substitute particle in two ways. It substitutes for the previously introduced subject, and it substitutes for the previously introduced aspectual particle". I am not aware of any possible diachronic pronominal source of *ma*, though given the negligible amount of information available on the history of Senufo languages, such a possibility cannot be dismissed outright.

6) When it occurs alone, *mà* has a low tone. I am uncertain as to the underlying tone of *ma*, as there are no further examples in Sùpyiré of either low tone becoming mid before high, or mid tone becoming low in isolation. *mà* may occur in subjectless clauses with a very limited number of verbs. These clauses, which function as adverbial time clauses for a following ML clause, do not have a zero anaphor subject: they are truly subjectless. Following is an example:

- a. *mà* *ù* *yà?a* *kù-ni* *i*
PN/G1s leave path-DEF/G3s in
While he was still on the path,
(lit. and leave him in the path)
- b. *kà* *u* *ú* *pí* *nyá* . . .
PN/G1s SEQ PN/G1p see
he saw them . . .

There are 17 cases of subjectless *mà* clauses in the corpus.

7) Strictly speaking, most adverbial time clauses are ML, given the (operational) definition of ML use here, since they encode events in their natural chronological order. Syntactically, however, they are subordinate. They always occur to the left of the main clause, they do not take *kà* or *ma*, and they have the perfect aspect rather than the sequential. Finally, they are marked with a clause-final subordinating particle, *ké*.

8) There are 6 cases of a *ma* clause *within* an adverbial, i.e. the adverbial is two clauses long, and the *ké* subordinating particle comes at the end of the *ma* clause. When a *ma* clause *follows* the *ké*

marker, it is always a ML clause.

- 9) This information is from Eileen Gassoway, personal communication.

ABBREVIATIONS

DEF	definite
DS	different subject
G	gender. Sùpyíré has five genders, G1, G2, etc. Genders 1-3 have both singular and plural forms.
HAB	habitual aspect marker
IND	indefinite
ML	main line
P	plural
PN	pronoun
RS	reported speech
s	singular
SEQ	sequential aspect marker
SS	same subject

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COGNITIVE CONSTRAINTS ON INFORMATION FLOW

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Some years ago (Chafe: 1973, 1974, 1976) I tried to find some order among the linguistic devices which I thought of as manifestations of linguistic "packaging", devices having less to do with the content of an utterance than with the way that content is wrapped up and presented to a hearer. What follows is an update and, I would like to think, an improvement on that earlier attempt. It can be viewed as part of a continuing effort to become clearer on what is happening in people's minds when they manipulate "given and new information", "topics and comments", "subjects and predicates", as well as "intonation units", "clauses", "sentences", and "paragraphs". I assume that the linguistic phenomena which have been given names like these are manifestations of basic cognitive processes, and that we can never understand them fully until we understand the psychological phenomena underlying them.¹

Whatever new things I may say here are based partly on interactions with other discourse scholars in the intervening years and partly on exposure to, and reflection upon much new data, notably the "pear stories" (Chafe: 1980) and materials collected to investigate differences between spoken and written language (Chafe: 1982, 1985; Chafe and Danielewicz: 1986).² I will restrict the discussion here entirely to spontaneous spoken language. In a longer work there would be much to say about parallel phenomena in more planned varieties of spoken language, as well as in writing of various kinds.

It seems especially difficult to establish a satisfying terminology in this area. Terms like "old" or "given" information, "new" information, "topic", "comment", and so on have been especially prone to misinterpretation, and have been used in a confusing variety of different ways. I have wondered whether to keep using them here, and thus invite continued misunderstanding, or whether to sweep the decks clean and introduce other, perhaps more appropriate terms and invite the disadvantages of terminological prolifera-

tion. I have finally decided on a mixture of the two strategies. I will retain the terms "given" and "new", while defining them in quite specific cognitive ways for which the labels "already active" and "previously inactive" will be seen as appropriate alternatives. I will introduce the notion of "accessible" or "previously semi-active" information as a third type which is in a sense intermediate between given and new. With respect to a different opposition, I have settled on the term "starting point" for what has sometimes been called a "topic", along with "added information" for what has sometimes gone been called a "comment". I believe that my intentions with these various labels will become clear as we proceed.

Intonation Units

I assume to begin with that our minds contain very large amounts of knowledge or information, and that only a very small amount of this information can be focused on, or be "active" at any one time. It is intuitively obvious that our capacity to activate information is severely limited. The active portion of our knowledge has sometimes been said to reside in short-term memory, and from that point of view there is relevance in the idea that short-term memory can hold only seven plus or minus two items (Miller: 1956). Whether or not that figure is exactly right, and exactly what an "item" might be, need not occupy us just now. The important thing is that short-term memory does not hold very much. In the long run it is better not to think about a *kind* of memory, but about a certain limited amount of information in our minds being temporarily lit up. From that point of view the term "activated" seems appropriate.

When a speaker is speaking, her or she verbalizes one piece of temporarily active information after another. Each such piece is expressed in what I will call an "intonation unit" (cf. the "tone unit" of Crystal: 1975 and elsewhere). An intonation unit is a sequence of words combined under a single, coherent intonation contour, usually preceded by a pause. An intonation unit in English typically contains about five or six words, and new intonation units typically begin about two seconds apart. Evidently active information is replaced by other, partially different information at approximately two second intervals.

To show the nature of intonation units, and also to provide an ongoing example for the discussion to follow, I am going to quote a small part of a conversation that was tape-recorded during an informal dinner party. At one point in the evening one of the participants remarked that it was important for

university teachers to have personal contact with their students. The husband of the person who had made that remark then contributed the following anecdote.

I have segmented the transcription into intonation units, giving each a number. Two dots indicate a brief break in timing, three dots a full-fledged pause. Two hyphens indicate lengthening of the preceding segment. The acute accent shows intonation peaks. Contributions by another participant are given in parentheses.

1. ... It's funny though,
2. ... I do think that makes a difference .. but,
3. ... I can recall ... uh-- ... a big undergraduate class that I had,
4. ... where .. everybody loved the instructor,
5. ... and .. he was a ... real .. uh .. old world ... Swiss-- ... guy,
6. ... this was uh .. a biology course,
7. ... and he-- ... left all of the-- sort of uh-- ... real contact with students .. up to .. his assistants.
- (8. ... Mhm,)
9. ... And .. he would come into class,
10. ... at .. uh-- you know three or four
11. ... precisely one minute after the hour,
12. ... or something like that,
13. ... and he-- .. would .. immediately open his .. notes up,
14. ... in the front of the room,
15. ... and he sat
16. ... and every .. every lecture,
17. ... after the first,
18. ... started the same way.
19. This was .. up-- at Wesleyan,
20. when Wesleyan was still ... a man's school.
21. ... So every lecture after the first would begin,
22. ... Gentlemen,
23. ... at last time,
24. ... we were talking about,
25. ... and then he would
- (26. (laughter))
27. ... But then .. you know he would just .. give a lecture,
28. ... and .. there was no .. real interaction with the-- .. the students,
29. ... and then .. at .. at the end,

- 30. .. he would close his notes,
- 31. .. and walk out of the room.
- (32. .. Hm.)
- 33. ... And he was the
- 34. .. I guess that is the .. old world style,
- (35. Yéah.)
- 36. ... of lecturing.
- 37. But he was the .. the most extreme example I had .. I ever had as student.
- (38. .. But he was interesting.)
- 39. And he was very good,
- 40. .. yéah.

Looking at the general format of language production in this way, we get a picture of alternating pauses and vocalizations that is schematically representable as follows:

... xxxx᷑, ... xxxx᷑, ... xxxx᷑, etc.

where, of course, the number of words in an intonation unit as well as the number and position of intonation peaks is variable. I will call the pauses in this picture "initial pauses" to differentiate them from any pauses that may occur during the periods of vocalization (cf. the "planning phases" of Butterworth: 1975).

The pauses as well as the vocalizations are of interest. Although we may hope that more evidence on this score will eventually be available, it is fruitful to speculate that what happens during these pauses has something to do with changes in the activation states of information in the speaker's mind. Such changes probably require a certain amount of time-consuming cognitive effort, which may be a chief reason for the periods of silence. Not only is certain information becoming newly activated in the speaker's mind, but also, if the total amount of information that can be active at any one time is severely limited, there must be other information that is passing out of the active status, being replaced by other, newly activated material. By the end of the initial pause, at least under ideal conditions, all the information to be expressed in the upcoming period of vocalization will have become active in the speaker's mind. This is not to say that changes in activation states never occur while a speaker is speaking, but that when such changes do occur they represent a kind of disfluency, or deviation from the ideal.

It is also interesting to consider what may be happening in the mind of

the hearer. Presumably the periods of vocalization function to activate certain information for the hearer, while other information leaves the active state. In fact, the speaker's purpose in speaking is precisely to bring about changes in the activation states of information in the hearer's mind. There is, then, a speaker-hearer alternation associated with the pauses and vocalizations, with changes in activation states taking place in the speaker's mind during the pauses, and in the hearer's mind during the periods of vocalization:

Speaker:	change	change	change
	...	xxxx̄, ...	xxxx̄, ...
Hearer:	change	change	change

The Three Activation States

We cannot suppose that each intonation unit expresses a single, indivisible chunk of information. Much of our discussion from now on will have to do with pieces of information within those chunks, and the kinds of activation to which those pieces are subject. We will be looking more closely at the way the pieces are activated and deactivated in the speaker's and hearer's minds during the pauses and periods of vocalization, and we will be led to identify more than one state of activation.

Some of what is expressed in intonation units involves people's ideas of objects, events, and properties. These are the ideas that are typically expressed in noun phrases, verb phrases, and adjective phrases. (Also expressed in intonation units are hedges, epistemic attitudes, tenses, aspects, and the like, but they will not be the focus of our attention here.) I will refer to the ideas of objects, events, and properties as "concepts". The important point is that when we talk about states of activation, these are not states that apply to the larger chunks of information expressed in intonation units. Rather, they apply to the separate concepts that reside within those chunks.

There is evidence that a particular concept, at a particular time, may be in any one of three different activation states, which I will call "active", "semi-active", and "inactive". An active concept is one that is currently lit up, a concept in a person's focus of consciousness. A semi-active concept is one that is in a person's peripheral consciousness, a concept of which a person has a background awareness, but which is not being directly focused on. An inactive concept is one that is currently in a person's long-term memory, neither focally nor peripherally active.

Active Concepts (“Given Information”)

Let us imagine a point in time at the end of the initial pause, when the speaker is about to utter a new intonation unit, as indicated by the caret:

... xxxx̄,
 ^

At this point, under ideal conditions, all the concepts about to be verbalized in the upcoming intonation unit are, for the speaker, in the active state. But at this point the speaker will also have assessed which of these concepts are already active in the mind of the hearer as well. Those concepts which are already active for the speaker, and which the speaker judges to be active for the hearer as well, are verbalized in a special way, having properties which have often been discussed in terms of “old” or “given” information.

The general thing to say is that given concepts are spoken with an attenuated pronunciation. The attenuation involves, at the very least, weak stress. Typically, though not always, it also involves either pronominalization or omission from verbalization altogether (the maximum degree of attenuation). A few examples are in order. In each example I italicize the words which express given concepts. In 2:

2. ... *I* dó think *that* makes a dífference .. but,

the speaker referred to himself with the weakly stressed pronoun “I” because he assumed that the concept of him was already active in the consciousness of the hearer(s), and he made that assumption because he was a participant in the conversation. First and second person referents acquire the given status naturally from the conversational context itself (Chafe 1974: 123-124). The word “that” is a weakly stressed pronoun because it refers to the idea that good teachers interact with their students, an idea that had been expressed by another speaker just before this narrative began, and that could thus be assumed to be still in the active consciousness of all the conversational participants.

Once the concept of the instructor had been introduced into everyone’s consciousness in 4:

4. ... where .. éverybody lóved the instrúctor,

this concept came to be treated as given for the remainder of the narrative. Thus, it was referred to with the weakly stressed pronoun “he” in 5:

5. ... a--nd .. *he* was a ... real .. uh .. óld world ... Swíss-- ... guy,

as well as in 7, 9, 13, 15, 25, 27, 30, 33, 37, 38, and 39.

Another straightforward case of given information was the referent of “this” in 6:

6. ... *this* was uh .. a biology course,

a referent that had been activated through its introduction shortly before in 3:

3. ... *I* can recall ... uh-- ... a big undergraduate class that *I* had,

The word “that” in 34 provides a similar example:

34. ... I I guess *that* is the .. old world style,

The referent of “this” in 19 is the sequence of events set forth immediately before:

19. *This* was .. u--m at Wésleyan,

“Wesleyan” itself then came to be treated as given in the immediately following intonation unit 20, where it was weakly stressed:

20. when *Wesleyan* was still ... a mén's school.

This referent was not pronominalized in 20 because it represented a change in “starting point” from the preceding intonation unit, as will be discussed below.

There are a few less straightforward instances of given concepts. For example, in 1:

1. ... *It's* funny though,

the “it” referred to a given concept whose nature is difficult to specify. This was not, apparently, the dummy “it” of “it's raining”, since someone might conceivably have asked, “What's funny?” (“What's raining?” would be peculiar.) But its referent can perhaps be characterized no more precisely than “what I am about to say” — not a concept, strictly speaking, that was already active in the hearer's mind, but one that was formulaically pretended to be so.

In intonation unit 3:

3. ... *I* can recall ... uh-- ... a big undergraduate class that *I* had,

there are two occurrences of “I”, both of which show strong, not weak stress. The first person referent must have been active in both the speaker's and the hearer's minds, but it was also contrastive, and for that reason stressed. The speaker was contrasting his own understanding with that which had just been

verbalized by the preceding speaker (Chafe 1974: 117-119, 1976: 33-38).

The referent expressed by the entire object noun phrase in 3:

a big undergraduate class that I had,

was also given. In Chafe (1974: 125-127) I noted that when a particular instance of a category has been activated, all other instances of the category are simultaneously activated too. Here the speaker assumed, because of the preceding conversation, that everyone was already thinking about big undergraduate classes. It would not have been sufficient simply to pronominalize this referent:

I can recall one that I had,

because the referent of “one” would not have been clear. The example is useful in showing that a referent may be given even when it needs to be spelled out in a full noun phrase.

Semi-Active Concepts (“Accessible Information”)

What follows will appear in clearer perspective if we keep in mind a hypothetical frame of reference in which, for the speaker, the initial pause is occupied by changes in the activation states of one or more concepts, each such change belonging to one of three types:

- (1) a change of a previously inactive concept to an active one.
- (2) a change of a previously semi-active concept to an active one.
- (3) a change of a previously active concept to a semi-active one.

We can speak of types (1) and (2) as the “activation” of an inactive or semi-active concept respectively. There is really no difference between (1) and the psychological notion of “recall”. To say that a speaker is recalling something from long-term memory is equivalent to saying that he is activating something that was previously inactive. We can speak of (3) as the “deactivation” of an active concept. Because of the limited capacity of focal consciousness, deactivation takes place as frequently as activation.

It will be instructive now to look at our narrative for some examples of concepts that were recalled by the speaker from the semi-active into the active state (type 2). I will call them “accessible” concepts. We can at the same time consider how these concepts came to be semi-active. I hope in this section to clarify what it means to be accessible information, but the specifically linguistic consequences of accessibility will not become clear until we have taken up some additional aspects of verbalization.

There seem to be two ways in which concepts become semi-active. One way is through deactivation from an earlier active state, typically through having been active at an earlier point in the discourse. A concept does not remain in the active state very long unless its activation is refreshed. But as concepts become deactivated they do not immediately become fully inactive, but may remain in the semi-active state for some time. The properties of semi-active consciousness have never been systematically studied, but it clearly is not subject to the same capacity and time limitations as active consciousness. Later I will suggest that "paragraph" boundaries are evidence of major changes in peripheral activation.

In our narrative, intonation unit 5 introduced the property of being "old world":

5. ... a--nd .. he was a ... real .. uh .. óld world ... Swíss-- ... guy,

This "old world" property was not mentioned again until 34, by which time it must have passed out of activation, but not out of semi-activation:

34. ... I I guess that ís the .. old world style,

During the initial pause of 34, then, the concept of "old worldness" must have been recalled from the semi-active state.

The other way in which concepts may become semi-active is amply illustrated in this narrative. These are concepts which belong to the set of expectations associated with a schema (Bartlett: 1932, Mandler and Johnson: 1977, Schank and Abelson: 1977, Tannen: 1979, etc.). A schema is usefully regarded as a cluster of interrelated expectations. When a schema has been evoked in a narrative, some if not all of the expectations of which it is constituted presumably enter the semi-active state. From that point on, they are more accessible to recall than they would have been as inactive concepts.

The narrative at hand began by evoking the schema of an undergraduate class. If we disregarded the conversational context of the narrative, we could suppose that this schema was evoked by mention of the class in intonation unit 3:

3. ... I can recall ... uh-- ... a big undergraduate class that I had,

Evidently, however, the referent of "a big undergraduate class" was already being treated as an active concept because of prior talk about such classes. It seems, therefore, that the class schema had already been evoked by the earlier conversation, and that at the beginning of this narrative various concepts

associated with it were already semi-active or accessible in the minds of those present.

Schemas can be characterized in part by listing the participants and events included in them. In the class schema these include at least the following:

- students
- an instructor
- teaching assistants
- the instructor's notes
- a classroom
- a lecture

Concepts of this sort must then have been in the semi-active state throughout the narrative, except during the periods when they were fully active. We can look at the intonation units in which these semi-active concepts were expressed. In the following examples the words that verbalize such accessible concepts are given in boldface italics.

In 4 there were two accessible concepts: the students (verbalized as "everybody"), and the instructor. Thus:

4. ... where .. *everybody* lóved *the instructor*,

In 7 the students and the teaching assistants were accessible:

7. ... a--nd he-- ... left áll of the-- sort of uh-- ... real cóntact with *stú-dents* .. up to .. *his assistants*.

In 9 it was the class itself:

9. ... A--nd .. he would come into *cláss*,

In 13, the instructor's notes:

13. ... a--nd he-- .. wou--ld .. immédiately open *his* ... *nótes* up,

In 14, the room:

14. ... in the front of *the róom*,

In 16, the lecture:

16. and *every* ... *every lécture*,

In 27, the event of giving a lecture:

27. ... But then .. you know he would just .. *give a lécture*,

In 30, the instructor's notes again:

30. ... he would close *his notes*,

In 31, the room again:

31. ... and walk out of *the room*.

and in 36, the lecturing again:

36. ... of *lecturing*.

Before we can appreciate the consequences of accessibility, however, we need first to look at the third state that concepts may be in.

Inactive Concepts (“New Information”)

Another type of change that takes place during the initial pause is the change of a concept from the inactive to the active state. Such concepts will not have been active or semi-active because of anything that was said earlier in the discourse, nor will they have become semi-active through the evocation of a schema. In the following selected examples, those words that expressed previously inactive, or “new” concepts are given in boldface:

1. ... It's **funny** though,
2. ... I do think that **makes a difference** .. but,
5. ... a--nd .. he was a ... real .. uh .. **old world** ... **Swiss**-- ... guy,
6. ... this **was** uh .. **a biology** course,

This kind of change, which amounts to the recall of a concept from long-term memory, evidently exacts a greater cost in terms of cognitive effort than any other kind. Deactivation of a concept from the active to the semi-active state probably exacts no cost at all; it is an automatic consequence of the limited capacity of focal consciousness. Activating a semi-active concept probably exacts only a minimal cost. But the change we are now considering shows evidence of being cognitively more difficult.

One piece of evidence is the initial pause itself. A principal reason for this pause is the very process we are considering. To activate something that was previously inactive evidently takes time. Another piece of evidence is not as obvious, but it is crucial to our present concern. Simply stated, it is the finding that only one concept can be changed from the inactive to the active state during any one initial pause. If we ignore the possibility that activation may occasionally take place during vocalization itself, this amounts to saying that a single intonation unit can convey no more than one previously inactive, or new concept. By analogy to the not unrelated “one clause at a time con-

straint" of Pawley and Syder (1983: 564-565), I will call this the "one new concept at a time constraint". (Something quite similar was suggested by Givón (1975: 202-204) in terms of "one [new] unit per proposition".) This constraint results naturally from what I take to be the cognitive basis of an intonation unit: the expression of a single focus of consciousness. Such a focus can evidently contain no more than one previously inactive concept.

To see the effect of this constraint, it will be useful to have a list of how all the concepts in this narrative were verbalized, with columns separating them into (1) concepts that were already active for the speaker before he uttered the next intonation unit, and that were assumed to be already active in the mind of the hearer as well ("given" concepts), (2) concepts that the speaker, during the initial pause, transferred from the semi-active to the active state in his own mind ("accessible" concepts), and (3) concepts that the speaker, during the initial pause, transferred from the inactive to the active state ("new" concepts). As in the examples above, I will cite expressions of these three types in italics, boldface italics, and boldface respectively. Certain of the expressions in the lefthand column are given in parentheses, for a reason that I will come to shortly.

	Given Concepts	Accessible Concepts	New Concepts
1.	(<i>it</i>)		is funny
2.	(<i>that</i>)		makes a difference
3.	(<i>I</i>) <i>can recall</i> <i>a big under-</i> <i>graduate class</i> <i>that I had</i>		
4.		(<i>everybody</i>) <i>the instrúctor</i>	líved
5.	(<i>he</i>) <i>guy</i>		was a real old world Swiss
6.	(<i>this</i>) <i>course</i>		was a biology
7.	(<i>he</i>)	<i>stúdents</i> <i>his assistants</i>	left all of the real contact with-- up to--

9.	(he)	<i>cláss</i>	would come into
10.			at three or f
11.			precísely one minute
13.	(he)	<i>his nótes</i>	after the hour,
14.			would immédiately
15.	(he)	<i>the róom</i>	open -- up
16.			in the front of
17.			st
18.		<i>every lécture</i>	áfter the first
19.	(this)		stárted the same
20.	(Wesleyan)		wáy
	<i>school</i>		was at Wésleyan,
21.		(<i>every lecture after</i> <i>the first</i>)	was still a mén's
22.			would begin
23.			Géntlemen,
24.	(ve)		ze lás time
25.	(he)		vere tálking about
27.	(he)		would
			would just give
			a lécture
28.	<i>the students</i>		was no real inter-
			áction with--
29.			at the énd
30.	(he)	<i>his nótes</i>	would close
31.		<i>the róom</i>	walk out of
33.	(he)		was the
34.	(that)	<i>is the old world stýle</i>	
36.		<i>oflécuring.</i>	
37.	(he)	<i>as a stúdent</i>	was the most extreme
			exámple I ever
			had
38.	(he)		was ínteresting
39.	(he)		was véry góod

The one new concept at a time constraint dictates that each of the expressions in the righthand column must express a unitary concept. It would be disconfirmed by expressions in that column which could be shown to express more than one concept. I am not, of course, talking about the number of words contained in these expressions, but rather about whether the concepts expressed by these words are unitary or not. It is important to realize that there is no consistent relation between the status of being a unitary concept and the length or syntax of the verbalization of the concept. Thus, "Mildred", "opened the door", or "the house I used to live in" may equally well express unitary concepts. Given the evident importance of this notion, we can hope that useful tests for "unitariness" can be devised. For the time being I rely on the reader's intuitive appreciation of this property.

A single word like "loved" in 4 is the simplest case:

4. ... where .. **éeverybody lóved the instrúctor,**

Even though this intonation unit contained three stressed words, two of them expressed accessible concepts and only one, "loved", expressed a new concept.

One clear type of word *sequence* that may express a single new concept is the construction that consists of a copula followed by either an adjective, a propositional phrase, or a noun phrase. Examples from this narrative include "is funny" (1), "was interesting" (38), "was at Wesleyan" (19), or "was still a men's school" (20). In many such cases one can imagine the concept in question being expressed by a single word in some other language, where it has become institutionalized. Similar in nature is a copular phrase which contains a stressed noun or adjective modifying a concept that is given, as in "was a biology (course)" (6), or "was a real old world Swiss (guy)" (5).

The last example raises the question of whether, since "old world" and "Swiss" both carried intonation peaks, they did not express two separate new concepts. A reasonable reply is that they actually expressed one and the same property, not two separate ones. Having said "old world", the speaker hesitated and then said "Swiss", evidently in an attempt to clarify the same concept through two different verbalizations.

When an entire intonation unit functions as an adverbial modifier of a preceding or following clause, it too can be assumed to convey a unitary concept: for example, "ze last time" (23), or "at the end" (29). A similar example, "in the front of the room" (14), seems in fact to have conveyed new information only with the prepositional sequence "in the front of", since the con-

cept of "the room" was accessible.

There were several cases in this narrative where a unitary concept like "one minute after the hour" (11) or "was good" (39) was accompanied by a stressed degree adverb like "precisely" or "very". Evidently such an adverb does not convey a separate concept, but only expresses the degree of the concept to which it is attached. Intonation unit 13, "he would immediately open his notes up", also contained a stressed adverb of this sort in the word "immediately". The only new concept in this intonation unit was, then, the verb-particle combination "open -- up". The object of this verb was the concept expressed by "his notes", which was accessible.

We need to give more thought to those cases where a single new concept was expressed with a verb-object combination. Of course, those cases where the object expressed accessible information, as in "would close his notes" (30) or "walk out of the room" (31) are no problem for the one new concept at a time hypothesis. In such cases it was only the verb which carried new information. But what about cases like "makes a difference" (2) or "give a lecture" (27), where both the verb and the object appear to have expressed new information? To maintain the hypothesis, we need to suppose that in those cases the verb-object combination as a whole expressed a unitary concept. Often, in fact, the combination is clearly a lexicalized one. "Make a difference" is certainly a lexicalized expression, as is "give a lecture". It may even be generally true that the verb-object construction is a way of presenting an event as if it were conceptually unitary.

There were several cases here where a construction that expressed new information contained a noun followed by one or more prepositions, and where the object(s) of the preposition(s) expressed given or accessible concepts. For example, in "there was no real interaction with the students" (28), the unitary concept "interaction with" expressed new information, but "the students" were given. A more complex case of this sort was "he left all of the sort of real contact with students up to his assistants" (7). If there were one intonation unit in this narrative which might be thought to violate the one new concept at a time constraint, this would probably be the one. However, we can easily interpret the concept expressed by the construction "leave contact with — up to —" as unitary. It consisted of a verb-object "leave contact", where "leave" was supplemented by the preposition sequence "up to", and "contact" was supplemented by the preposition "with". If this construction was conceptually unitary, there is no problem with the rest, since "students" and "his assistants" both expressed accessible information.

Another example of new information expressed in a long sequence of words was "he was the most extreme example I ever had as a student" (37). The conceptual essence of this intonation unit, however, was conveyed by "was the — example". The expression "most extreme — I ever had" functioned as a degree adverb modifying this concept, and was thus in the same category as "precisely", "very", and "immediately", as discussed above.

There seems, then, to be nothing in this narrative which contradicts the hypothesized constraint: that no more than one concept can be changed from the inactive to the active state during an initial pause, and that intonation units, therefore, do not ordinarily express more than one "new" concept of this kind.³

Starting Points and Added Information

There are various cognitive factors that interact to determine the content and shape of an intonation unit. So far we have considered how distributions of, and changes in activation states can affect pronominalization and the placement of intonation peaks, and how they can affect the amount of information an intonation unit can contain. We come now to another factor, different from but related to the distribution of activation states. It has to do with the manner in which newly recalled information is linked to other information.

A speaker does not simply thrust concepts forward out of nowhere. The usual technique for presenting information is to choose some concept, typically some referent, as a starting point and then to add information about it. As a speaker proceeds to verbalize one focus of consciousness after another, each added piece of information is attached to some other piece that is in some sense already present. The linguistic manifestation of this formatting strategy is the familiar subject-predicate structure. Many information units conform to this structure, employing a subject to express the starting point and proceeding with a predicate which adds information about that starting point.

There are 23 starting points in this narrative, including such varied referents as what was just talked about (expressed by the "that" in 2), the speaker himself (the "I" in 3), and "Wesleyan" in 20. Most of these referents enjoyed the starting point status only once, although "every lecture", which first appeared as a starting point in 16, was reselected as a starting point in 21 after the digression concerning Wesleyan. The referent "the instructor", however,

appeared as a starting point 12 times, thus constituting about half the starting points in the narrative. On that basis it is natural to regard the instructor as the referent which this narrative was "mostly about".

How do starting points and added information relate to the three states of activation discussed earlier? Certain things can be hypothesized about both the starting point and the added information in this regard. Taking the starting point first, we might call the following the "light starting point constraint":

- (1) A starting point is usually a given referent.
- (2) Occasionally a starting point is an accessible referent.
- (3) A starting point is rarely a new referent, and then only at the beginning of a major section of a discourse (a possibility not illustrated in the excerpt we have been examining).

We can look back at the three-column division of the narrative into the three activation states to see how this constraint is supported. In that list I put those words or expressions which expressed starting points in parentheses. In almost all cases, expressing a starting point coincided with being the subject of a clause. The one exception was in 28, where the word "there", if it was indeed syntactically a subject, did not convey a starting point:

28. ... a--nd .. there was no .. real interáction with the-- .. students,

The function of the "there" construction is precisely to introduce a new referent, often one that will be used subsequently as a starting point. But an intonation unit containing this construction evidently does not itself contain any starting point as such.

Of the 23 starting points in the narrative, 20 were given, three (4, 16, and 21) were accessible, and there were none that were new. It may be typical for about one out of eight starting points to be accessible, rather than given.

But what about the added information? There seems to be a "heavy added information constraint" which is the converse of the light starting point constraint just described:

Added information typically contains one new concept, though it may also contain some accessible concepts, or even some given concepts.

In the three-column list above it can be seen that every instance of added information (the nonparenthesized material), with the exception of intonation units 3 and 34, did contain one new concept. About half of the examples of added information also contained accessible concepts, and in three cases

(5, 6, and 28) there was some given information.

Intonation units 3 and 34 thus appear to be exceptions to the heavy added information constraint, in that their added information contained no information that was new. What is special about these two intonation units is the fact that both were contrastive. In 3 the speaker was contrasting his own recall with that of the previous speaker:

3. ... I can recall ... uh-- ... a big undergraduate class that I had,

In 34 he was contrasting his statement about the “old world style” with the possibility of its negation:

34. ... I I guess that is the .. old world style,

Thus, we might add a qualification to the heavy added information constraint to the effect that “added information need not contain a new concept if the intonation unit expresses a contrast”. We can suspect that the reason for this qualification is that the expression of a contrast is itself cognitively costly, so that a speaker cannot introduce both a contrast and a new concept simultaneously.

What Intonation Units Do

It will be interesting now to look at intonation units with the thought in mind that they may perform varied functions in furthering the flow of information in a discourse. The single most common type of intonation unit is the kind that takes a starting point and adds information about it, in other words an intonation unit that exhibits the classic subject-predicate structure. Eighteen of the 40 intonation units in our example were of that kind; specifically 1-7, 9, 13, 19, 20, 27, 28, 30, 34, and 37-39. These intonation units were, that is, “clauses”. We will now see that most of the other intonation units were in some way parasitic on, or ancillary to clauses. The clause appears to be the prototypical intonation unit type, from which most other types are derived, or are deviations.

There were some intonation units that were pieces of clauses. For example, an intonation unit may express nothing but a starting point; that is, it may consist of nothing more than a subject, lacking a predicate. Intonation unit 16 was of that sort:

16. and évery ... évery lecture,

This is a case where the starting point conveyed accessible information. In such cases, where somewhat more cognitive effort is called for than would be

necessary just to maintain a given referent as the starting point, a speaker may produce an accessible "starting point only" intonation unit like this one.

Unless the speaker has a change of plan, such an intonation unit will sooner or later be followed by another which adds information about that starting point; that is, which consists of nothing but a predicate. In the present case this function was performed by 18:

18. ... stárted the same wáy.

A different kind of clause fragmentation appears when there is a verb of saying whose object is a quotation, so that the speaker must focus separately, first on the clause introducing the quotation, and then on the quotation itself:

21. ... So évery lecture after the fírst would begin,
22. ... Géntlemen,

Because of the one recall at a time constraint, spoken language does not easily support two or more conjoined items within a single intonation unit if both items express concepts that are new. For that reason, the second part of such a conjunction will appear in an intonation unit of its own, as in:

30. ... he would close his nótes,
31. ... and walk out of the róom.

I believe that this is a plausible cognitive explanation for the frequent occurrence of structures like this one, preferable to the usual explanation in terms of a deleted subject and auxiliary in the second clause. Speakers are unlikely to conjoin two verb-object combinations in a single intonation unit if both are cognitively costly to produce.

Another common function of an intonation unit is to provide what can be called an "orientation" for a preceding or following clause. The orientation may be temporal, spatial, or epistemic. That is, the information expressed in an intonation unit may provide a time, a location, or an epistemic background for the information in an adjacent clause. Such an intonation unit may take the form of a prepositional phrase or of some other adverbial construction. Examples of temporal orientations in our narrative included:

10. ... a--t .. uh-- you know three or f
11. ... precísely one minute after the hóur,
17. ... áfter the fírst,
23. ... ze lást time,
29. ... and then .. at .. at the énd,

An example of a spatial orientation was:

14. ... in the front of the róom,

And of an epistemic orientation:

12. or something like thát,

Other non-clausal intonation units fall into the category of “disfluencies”. Some are false starts: beginnings of clause structures that were then reformulated, interrupted, postponed, or abandoned:

15. ... and he st (reformulated with a different starting point)

25. ... and then he would (interrupted by laughter)

33. ... And he was the (postponed to 37)

Others are afterthoughts: material added after a premature closure of some kind:

34. ... I I guess that ís the .. old world style,

- (35. yéah.)

36. ... of lécuring.

One last kind of intonation unit which appeared in this narrative was an expression of agreement of understanding, expressed either by the interlocutor:

8. ... Mhm,

32. .. Hm.

35. Yéah.

or by the main speaker:

40. ... yéah.

Extended Clauses

We have seen that the intonation units in this narrative were of the following types:

Clauses

Pieces of clauses (subjects alone, predicates alone)

Orientations for clauses (temporal, spatial, epistemic)

Clausal disfluencies (false starts, afterthoughts)

Expressions of agreement or understanding

Except for the last, all of these types are centered around the clause. When an intonation unit is not itself a clause, it is likely to be either a piece of one, an orientation for one, one that was falsely started, or a piece tacked onto a

prematurely finished one.

It is instructive to take the original version of the narrative, formatted as a list of intonation units, and to reformat it by attaching those intonation units which were not clauses to the clauses with which they were associated. I will call the new units thus arrived at “extended clauses”. They are as follows (retaining the original numbering):

1. ... It's funny though,
2. ... I do think that makes a difference .. but,
3. ... I can recall ... uh-- ... a big undergraduate class that I had,
4. ... where .. everybody loved the instructor,
5. ... a--nd .. he was a ... real .. uh .. old world ... Swiss-- ... guy,
6. .. this was uh .. a biology course,
7. ... a--nd he-- ... left all of the-- sort of uh-- ... real contact with students .. up to .. his assistants.
8. (... Mhm,)
- 9-12. ... A--nd .. he would come into class, ... a--t .. uh-- you know three or f.. precisely one minute after the hour, or something like that,
- 13-14. ... a--nd he-- would .. immediately open his ... notes up, ... in the front of the room,
- 15-18. ... and he stand every ... every lecture, ... after the first, .. started the same way.
19. This was .. u--m at Wesleyan,
20. when Wesleyan was still ... a men's school.
21. ... So every lecture after the first would begin,
- 22-24. ... Gentlemen, .. ze last time, we were talking about,
25. .. and then he would
26. (laughter)
27. ... But then .. you know he would just .. give a lecture,
28. .. a--nd .. there was no .. real interaction with the-- .. the students,
- 29-31. ... and then .. at .. at the end, .. he would close his notes, and walk out of the room.
32. (... Hm.)
- 33-36. ... And he was the .. I guess that is the .. old world style, (Yéah.) ... of lecturing.
37. But he was the .. the most extreme example I had .. I ever had as a student.
38. (... But he was interesting.)
- 39-40. And he was very good, .. yéah.

One thing that is interesting about this reformulation is the number of extended clauses that began with a connective of some kind. By far the most common connective was "and", which appeared at the beginning of 5, 7, 9-12, 13-14, 15-18, 25, 28, 29-31, 33-36, and 39-40; that is, in 10 out of the total of 22 extended clauses (including the false start). This proportion of about 50 percent appears to be typical for clause-initial "and" in spoken English. Two of the extended clauses (27 and 37) began with "but", as did the interlocutor's contribution in 38. Clause 2 ended with "but", a pattern more common in some other languages, but by no means absent in English. One clause (21) began with "so". "And", "but", and "so" appear in general to be the three most common connectives in spoken English. In the same category of particles which link an extended clause to what precedes, we can include subordinating conjunctions like the "where" in 4 and the "when" in 20.

It is these extended clauses, then, which are the units speakers explicitly fasten together with overt markers of connection. That in itself makes them appear to be important building blocks of language. They are, as it were, the subassemblies to which the overt fasteners of language are applied. Since every extended clause is built around a subject-predicate construction, we are led to suppose that that construction, or the starting point plus added information format on which it is based, is crucial to language design. Clauses may have their satellite orientations and disfluencies, but such other intonation units remain just that: satellite to the basic subject-predicate construction. Language thus consists in a basic sense of a series of predication. That is perhaps a trivial and obvious thing to say, but its relevance to spoken language can become clearer through studies of this kind.

Paragraphs

There is another level of segmentation which falls out of our narrative quite naturally, and which it is natural to associate with a division into "paragraphs". I have written elsewhere (Chafe 1980: 40-47) about the spoken analogs of written paragraphs, and we have good examples before us here. Within most narratives one finds certain places where the speaker pauses longer than normally, where there is likely to be an increase in fumbling and disfluency, and where an interlocutor is especially likely to contribute some encouraging noise or remark. When one looks at the content of the narrative at such places, one usually discovers a significant change in scene, time, character configuration, event structure, and the like. I have suggested that these are places in a discourse where the speaker has to make a major change

in his or her peripheral consciousness. If such changes are costly in terms of cognitive effort, that explains the unusual amount of pausing and disfluency.

Within the framework of this paper, we can see these points as the places in a narrative where the speaker introduces a major shift in the set of concepts which are semi-active. Whereas configurations of active concepts change rapidly from intonation unit to intonation unit, configurations of semi-active concepts probably undergo major changes only at these more widely spaced points. Just as the pauses between intonation units are the change points for the active state of concepts, these greater disfluencies between paragraphs appear to be the change points for the semi-active state.

There were just two places within the present narrative where the speaker paused longer than otherwise, and where one of the interlocutors injected little noises of encouragement ("mhm" and "hm"). Segmenting the narrative on these grounds we are led to identify the following three major segments:

- 1- 7. ... It's funny though, ... I do think that makes a difference .. but, ... I can recall ... uh-- ... a big undergraduate class that I had, ... where .. everybody loved the instructor, ... and .. he was a ... real .. uh .. old world ... Swiss-- ... guy, ... this was uh .. a biology course, ... and he-- ... left all of the-- sort of uh-- ... real contact with students .. up to .. his assistants.
8. (... Mhm,)
- 9-31. ... And .. he would come into class, ... at .. uh-- you know three or four .. precisely one minute after the hour, or something like that, ... and he-- .. would .. immediately open his .. notes up, ... in the front of the room, .. and he stood every ... every lecture, ... after the first, .. started the same way. This was .. up at Wesleyan, when Wesleyan was still .. a men's school. ... So every lecture after the first would begin, ... Gentlemen, .. the last time, we were talking about, .. and then he would (laughter) ... But then .. you know he would just .. give a lecture, .. and .. there was no .. real interaction with the .. the students, .. and then .. at .. the end, .. he would close his notes, and walk out of the room.
32. (...Hm.)
- 33-40. ... And he was the .. I guess that is the .. old world style, (Yeah.) ... of lecturing. But he was the .. the most extreme example I had .. I ever had as a student. (.. But he was interesting.) And .. he was very good, .. yeah.

It is rewarding to look at the content of each of these paragraph-like segments. We can notice that the first of them provided both a background and a summary of the entire narrative. It supplied a background orientation of the unexpectedness of what was to come, it introduced the biology class and the instructor, and it told that the instructor was loved, at the same time that he had no contact with his students. That seeming contradiction was the story's point.

During the pause and the interlocutor's noise of encouragement that followed, the speaker shifted his orientation from the generalities of the first paragraph to a specific instantiation of the instructor's classroom behavior. A shift from a general to a specific orientation necessitates a shift in the set of concepts which are semi-activated, and that is evidently a process which takes time.

The third paragraph wrapped things up with a final evaluation of the instructor's old world style, paradoxically combined with his positive evaluation. It required a return from the specific to the general stance, and again that reorientation was time-consuming.

There is one other observation worth making with regard to this tripartite division. We have here, it seems, the major elements of a certain narrative schema:

- (1) summary
- (2) instantiation
- (3) wrap-up

It is my suspicion that such patterns result, not from a top-down application of a branching tree structure, but rather from a speaker's awareness of what it is appropriate to verbalize as he or she proceeds through a story. Initially this speaker knew he needed to orient his listeners by providing the kinds of information included in his first, summary paragraph. Having done that, during the following pause he settled on describing a typical class as a concrete example. Having done that, during the next pause he decided it would be appropriate to wrap things up as he did. In other words, a manifestation of a story schema develops naturally out of the ongoing creation of a narrative in real time, more than as the stuffing of recalled experience into a preformed mold (cf. Chafe: 1979).

Spoken paragraphs, then, result from major shifts in a speaker's semi-active consciousness, including shifts from a general to a specific orientation and back again, as here. These shifts may be dictated by a schema which

guides the speaker in knowing what is appropriate to think of and verbalize next. It is interesting that hearers recognize such shifts, as shown here by the interlocutor's expressions of understanding. Undoubtedly there are clues for the hearer in both the speech signal (Lehiste: 1979), and in the recognition of major breaks in content.

Sentences

But what has happened to sentences in all of this? In jumping from extended clauses to paragraphs we seem to have ignored a discourse unit of a familiar and supposedly important kind. There is, to be sure, another way of segmenting this narrative by dividing it at those points where the speaker introduced a sentence-final falling pitch. We arrive in that way at the version which follows:

- 1- 7. ... It's funny though, ... I do think that makes a difference .. but, I can recall ... uh-- ... a big undergraduate class that I had, ... where .. everybody loved the instructor, ... and .. he was a ... real .. uh .. old world ... Swiss-- ... guy, .. this was uh .. a biology course, ... and he-- ... left all of the-- sort of uh-- ... real contact with students .. up to .. his assistants.
- 8. (... Mhm.)
- 9-18. ... And .. he would come into class, ... at .. uh-- you know three or four .. precisely one minute after the hour, or something like that, ... and he-- .. would .. immediately open his .. notes up, ... in the front of the room, .. and he stood every ... every lecture, ... after the first, .. started the same way.
- 19-20. This was .. um at Wesleyan, when Wesleyan was still ... a men's school.
- 21-25. ... So every lecture after the first would begin, ... Gentlemen, .. at the last time, we were talking about, .. and then he would
- 26. (laughter)
- 27-31. ... But then .. you know he would just .. give a lecture, .. and .. there was no .. real interaction with the .. the students, .. and then .. at .. at the end, .. he would close his notes, and walk out of the room.
- 32. (... Hm.)
- 33-36. ... And he was the .. I guess that is the .. old world style, (Yéah.) ... of lecturing.

37. But he was the .. the most extreme exámples I had .. I ever had
as a stúdent.
38. (... But he was ínteresting.)
- 39-40. And he was véry góod, .. yéah.

The function of sentences in spoken language is intriguing and problematic (cf. Chafe 1980: 20-29). There is a useful distinction to be made between those linguistic units which are determined by basic cognitive phenomena such as memory and consciousness, and those which result from passing decisions regarding coherence and rhetorical effect. In the former, cognitively determined category belong intonation units, extended clauses, and paragraphs. Sentences, on the other hand, seem to belong to the category of phenomena which are under more rhetorical control, and are more independent of cognitive constraints.

One obvious property of spoken sentences, as defined by the falling pitch intonation, is their variability in length. This property, clearly evident in this narrative (compare the lengths of sentences in the list above), is one bit of evidence that sentences are independent of cognitive limitations. There is nothing that holds them to a particular size, as there is for intonation units.

It is interesting that the first sentence in our sample coincided exactly with the first paragraph. If all sentences were like this one, there would be no need to distinguish between sentences and paragraphs. However, the next four sentences together constituted only a single paragraph. If we look at the structure of what was being conveyed, it is clear how these four sentences came to be separated. They expressed, in effect, the major constituents of the second paragraph. First there was a sentence that reported the instructor doing three things: entering the classroom, opening his notes, and beginning the lecture. Then came a digression to make it clear that all this had happened at Wesleyan. Then came the climax of the paragraph: the speaker's imitation of what the instructor said at the beginning of each class. The paragraph ended with a sentence describing how the instructor performed the very same actions listed in the first sentence in reverse order: finishing the lecture, closing his notes, and leaving the classroom. The schema for the paragraph was thus:

- (1) the instructor's arrival
- (2) a digression locating the event at Wesleyan
- (3) quoting the instructor
- (4) the instructor's departure

Each of these four divisions ended with a sentence-final intonation. Thus, the segmentation of this paragraph into sentences was neatly determined by the paragraph's own internal schema.

Sentence 33-36 gave the speaker's encapsulated evaluation. It was quickly followed by another idea: an attempt to put this instructor in perspective as an extreme case. Presumably the speaker would have stopped here, except that the interlocutor wanted to reiterate the initial point that, in spite of the instructor's style, he was a successful teacher. The speaker then added a final sentence confirming this point.

It appears, then, that the sentences in this narrative were determined by the speaker's rhetorical decisions as to how to present the content of the narrative as it unfolded. Beginning with a long sentence that coincided with the first paragraph, he then gave impact to the symmetric patterning of the second, climactic paragraph by devoting one sentence to each of its major constituents. He then finished off with a series of brief encapsulations of the story's moral, aided in this by the interlocutor. This division of the narrative into sentences, as signalled by the sentence-final intonation, had nothing to do with the activation states of information, or with starting points and added information, but was determined rather by the speaker's (no doubt intuitive) decisions as to how most effectively to present what he was saying.

The Narrative

A few words ought to be said here at the end regarding the narrative as a whole, as a coherent unit of discourse in itself. There are several kinds of evidence that the excerpt we have been examining was a self-contained segment of the conversation. Most obviously, it was preceded and followed by contributions from other speakers; it thus constituted a single "turn". It ended with a significant pause, after which the wife of this speaker — the person who had made the original point to which this narrative was a kind of counterexample — added:

... I think you have to be an áwfully good lécturer to máke up for thát
(laugh) ányhow.

thereby providing a closure to the frame within which this segment of the conversation had unfolded.

Underlying these external indications is the likelihood that the main speaker verbalized here what it is intriguing to regard as an island of memory. It seems intuitively right to suppose that what is retrievable from our minds

consists of a set of islands rather than a continuous record of past experience. We remember only "a collection of moments" (Salaman: 1970), with vast blank spaces in between.

It is of some interest that this speaker was telling, not of a single event, but rather of an event type. Many old memories appear to be of this nature. We remember kinds of things we used to do or used to have happen to us, not particular instantiations of them. In looking through some materials of the Berkeley Oral History Project a few years ago, I was struck with how few cases there were in which one of the interviewees told about a single particular happening. The characteristic incident was of the type "my father used to . . .," not of the type "I remember the time my father . . ." The narrative we have been considering belongs to the same genre.

Summary

I have tried to present a picture of what was happening in the mind of this speaker as he produced this narrative, and its effect on the linguistic form which the narrative took. It is more rewarding, I think, to interpret a piece of discourse in terms of cognitive processes dynamically unfolding through time than to analyze it as a static string of words and sentences.

I began by pointing out how a piece of spoken language naturally segments itself into a series of initial pauses followed by periods of vocalization, each such "intonation unit" expressing a single focus of the speaker's consciousness. I then noted that the information conveyed by an intonation unit is not indivisible, but contains within it ideas of objects, events, and properties, which I lumped together under the term "concepts". Basic to the picture I tried to construct is the idea that a concept may be in any one of three states of activation at a particular time: active, semi-active, or inactive. A speaker normally makes changes in the activation states of certain concepts during the initial pause, changes which determine the content and form of the following intonation unit. The effect of an intonation unit on the hearer is to activate all the concepts it contains, while others are deactivated.

If a speaker assumes, prior to uttering an intonation unit, that a concept is already active in the hearer's mind, he will verbalize that concept in an attenuated manner, giving it weak stress and probably pronominalizing it. I showed which concepts in the narrative had this "given" property, and why.

I then described and exemplified the ways in which a concept may become semi-active; specifically, though having been fully active at an earlier point in the discourse or through having been evoked by a schema. I pointed

out how the “class” schema evoked in this narrative had caused certain concepts to be semi-active at certain points. I introduced the term “accessible” for concepts which are recalled from the semi-active state.

Turning to inactive concepts, which I called “new”, I pointed out how a speaker is able to recall only one such concept per initial pause, and how that normally means that an intonation unit will express no more than one new concept. I called this the “one new concept at a time constraint”.

I then discussed the organization of concepts within an intonation unit into a referent that expresses a starting point, together with a concept or concepts that add information about that starting point. I introduced the “light starting point constraint”, to the effect that a starting point is usually a given referent, occasionally an accessible referent, but never a new referent. I mentioned also a “heavy added information constraint”, to the effect that added information typically includes one new concept. Contrastive environments provide exceptions to this constraint, since apparently an intonation unit cannot easily express both a contrast and an item of new information.

Having shown that most intonation units are either clauses or satellite to clauses, I reformulated the example narrative in terms of extended clauses (clauses plus their satellites). That reformulation illuminated the fact that it is these extended clauses that are fastened together with connectives, suggesting that the extended clause is an important building block of language, either equivalent to or an elaboration of the intonation unit.

I showed also how the narrative neatly divided itself into paragraphs through pausal evidence as well as though the location of responses from the interlocutor. These paragraphs represented major shifts in the speaker’s semi-active consciousness, and at the same time they manifested the major schematic structure of the story.

I then reformulated the narrative in terms of sentences, as defined by falling pitches. I noted that sentences seem to be independent of the activation factors so important to the other devices discussed in the paper. Instead, they appear to have been determined by the speaker’s decisions based on rhetorical effect.

Finally, I pointed out that the entire narrative was readily isolable from the rest of the conversation, and that it could be thought of as expressing an island of memory. I mentioned that many such islands appear to be generic rather than particular in nature, consisting of event types rather than individual events.

I should point out in conclusion that I intended the particular narrative

discussed here to be illustrative of some very general principles that apply to all spontaneous spoken language. Of course it will take a lot of additional work to demonstrate the universality of these principles, but I have seen enough samples to feel comfortable in claiming that they are by no means unique to this one case. On the other hand, they may be considerably modified in written language (and to a lesser extent in more formal kinds of spoken language) by a greater freedom from ongoing cognitive constraints. That, however, is another story.

NOTES

- 1) I will not deal here with "definiteness", another topic discussed in Chafe: 1976, since its function of expressing "identifiability" belongs to a somewhat different domain from the interaction between consciousness and verbalization discussed here.
- 2) The pear stories research was sponsored by NIMH Grant MH25592, the work on spoken and written language by NIE Grant NIE-G-80-0125.
- 3) One difference between written and spoken language is that writers have the opportunity to dispense with this constraint, an opportunity which can and does lead to cognitive difficulties for readers. My impression at the moment, however, is that writers adhere surprisingly closely to the one new concept at a time constraint, although they verbalize accessible information significantly more often than speakers do.

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TRANSITIVITY IN GRAMMAR AND COGNITION

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1. Introduction

The purpose of this paper is to consider the significance to linguistic and cognitive theory of the complex of semantic and morphosyntactic parameters which Hopper and Thompson (1980) and Lakoff (1977) have shown to be intimately connected with, if not to constitute, the phenomenon of transitivity. Both Lakoff and H&T, working with very different data and assumptions, suggest approximately the same list of transitivity parameters, and point out that generally speaking a clause which has one of a short list of semantic features will be morphosyntactically more like a canonical transitive clause than an otherwise identical clause which lacks that feature. In Hopper and Thompson's well-known list, the canonical transitive clause has two participants, reports a kinetic event, is punctual and perfective, has a definite, referential, individuated, and wholly affected patient and a volitional agent which ranks high on the animacy hierarchy, and is affirmative and realis. All available data support the inclusion of all of the listed parameters, though it is probable that a few more will need to be added to the list. (I will suggest below that the person of the agent and the evidential value of the clause are also relevant).

Lakoff and Hopper and Thompson differ, however, on the correct direction in which to look for an explanation of the transitivity phenomenon. Lakoff points out the parallel between this list of non-criterial features taken as a definition of transitivity and the prototype approach to semantics suggested by Rosch's work on categorization. Hopper and Thompson, on the other hand, express some scepticism about the possibility of a semantic explanation for the transitivity phenomenon. They point out, however, that transitivity, as defined by these parameters, shows a high degree of correlation

with foregrounded information in narrative and procedural discourse, and suggest a functional explanation according to which the transitivity complex exists in order to function as a means of coding foregrounded information in discourse. My purpose here is to argue for the viability of a semantic interpretation of the transitivity phenomenon along the lines suggested by Lakoff, and to suggest that it is easier to explain the discourse phenomena identified by Hopper and Thompson in terms of a prototype semantic model than to explain the semantic facts in terms of a discourse-functional theory of transitivity.

I will further suggest, however, that it is shortsighted to attempt to simply invert Hopper and Thompson's argument and claim that some linguistic semantic level can provide the explanation for the behavior of morphosyntax in connected discourse. An extreme discourse functional theory of morphosyntax must assert that the interpretation of a single sentence requires that it be treated as though it were in discourse context. In actual language use, of course, interpretation of any utterance is in fact based at least in considerable part on real-world context; I will suggest that the use of discourse context in interpreting sentences in connected discourse amounts to using the discourse context as a substitute for real-world context. Thus we can argue that the semantics of both clause- and discourse-level constructions are rooted in a level of cognitive representation prior to either — that, rather than being derivative one from another, both semantic and discourse-functional facts are reflections of underlying cognitive schemata, the illumination of which must be the ultimate goal of both semantics and discourse analysis.

2. Transitivity in discourse

There is no doubt that the facts upon which the discourse-functional explanation for the transitivity phenomenon are based are correct — i.e. that cross-linguistic morphosyntactic data demonstrate the universality of the phenomenon, and that in general in narrative discourse there is a strong correlation between transitive morphosyntax and foregrounded information. Thus the important issue here is one of directionality of explanation. We must decide, first, whether there is any alternative to the discourse-functional explanation, and second, if there is, whether the alternative explanation can predict the facts of discourse patterning of transitivity. To begin with, we must note that while the statistical correlation of transitivity and foregrounding certainly seem to hold cross-linguistically and at least across those genres which have been adequately investigated, it is quite clear that there is not a

constant coding relation between any one of the transitivity parameters and foregrounding. In the English data analyzed by Hopper and Thompson (1980:288) we see the more transitive value for each parameter occurring in a significant number of background clauses, and for all except mode and affirmation we see the more transitive value absent in a significant number of foregrounded clauses. For example, Hopper and Thomspn report that while 88% of the foregrounded clauses in their sample showed the predicted perfective aspect, so did 27% of the background clauses. The average for all of the transitivity parameters is 78% occurrence in foreground clauses, but a huge 39% occurrence of high transitivity features in background clauses as well. As Tomlin (1983ms) has pointed out, if there were a direct causal relationship between foregrounding and the presence of any transitivity feature, the figures for that feature should approximate 100% and 0. (Tomlin's paper further demonstrates the absence of a coding relationship between aspect and foregrounding in unrehearsed on-line descriptive English narrative).

In their discussion of the individual transitivity parameters, Hopper and Thompson suggest a less direct relationship to discourse structure, identifying the semantic distinction coded by a particular morphosyntactic distinction, and then suggesting why clauses characterized by the more transitive value might be expected to constitute foreground information in a narrative. They argue, for example, that agentivity and volition are associated with foregrounding because "story lines are typically advanced by people who perform actions" (1980:286). We can elaborate their argument by applying the same type of explanation to the transitivity complex as a whole, arguing that the various transitivity parameters cohere in the way that they do because they code aspects of a coherent semantic prototype, and that transitivity in morphosyntax is associated with foregrounding in discourse because events which approximate the transitive prototype are more likely to be of interest, and thus inherently more likely to constitute foregrounded information.

3. Natural and discourse context

The general argument is based on the assumptions that human beings categorize events according to various relevant features, and that particular morphosyntactic constructions code particular event categories in precisely the same way that lexical items code other cognitive categories. Thus, as suggested first by Lakoff, prototypical transitive morphosyntax codes events which are close to a semantic transitive morphosyntax. (For further discus-

sion and supporting data see DeLancey 1984a, 1984b, 1985c). If we find that transitive clauses tend to occur as foreground in discourse, this reflects the cognitive salience of the event type coded by such clauses. It is therefore not the case that the morphosyntactic expression of transitivity is informed by its discourse function, nor that the discourse patterning can somehow be explained in terms of linguistic aspects of the clause type, but rather both directly reflect aspects of cognitive categorization.

The nature of the argument can be illustrated with what I think is an uncontroversial example. In most languages the simplest motion verbs either are lexically or can be morphologically specified for deictic orientation. In English, for example, the difference between the motion verbs *come* and *go* is that the former typically describes a motional event involving motion toward the location of the speech act, or some other location associated with the speaker or hearer, while *go* describes motion oriented in any other direction (cf. DeLancey 1981). Thus the basic difference between *come* and *go*, and their analogues in other languages, has to do with the actual context of the speech act, i.e. with an actual spatial relationship between the location of the speech act and the event being described. Now, in many languages (and, I suspect, in all languages where this deictic distinction is marked) ‘*come*’ and ‘*go*’ have a discourse function in which they are used to indicate the relative importance of various locations in a narrative. For example, an English ballad begins:

- (1) Earl Richard is a-hunting *gone*.

The second stanza begins:

- (2) He rode till he *came* to his lady’s house.

and it is at the latter location that the rest of the action of the ballad takes place. The use of *go* and *come* here marks locus of action; a location to which the protagonist *comes* is one where the audience’s attention should remain for a while, as significant action will transpire there. (Detailed and very informative discussion of this function of ‘*come*’ and ‘*go*’ in two Tai languages can be found in Mundhenk 1967 and Bickner 1978ms). In discussing the semantics of the motion verbs one can posit a “general meaning” of ‘*come*’ something like ‘motion toward some contextually recoverable center of attention’, applying by default to situations where the location of speaker and hearer counts automatically as such a center. Certainly this would be an appropriate dictionary definition, as it encompasses the various important uses of the word. It is intuitively clear, however, that the fundamental meaning of ‘*come*’

is 'motion toward *here*, where you and I are right now', and that the use of deictic specification in discourse where it does not refer to the speech situation is a secondary elaboration of this primary function. The use of 'come' (or 'here', etc.) in narrative to establish a center of attention should be seen as an instruction to the hearer to accept the specified location as his own point of view from which to metaphorically watch the further unfolding of the story.

4. Transitivity as a semantic prototype

Lakoff (1977) argues from English data for the existence of a semantic prototype for the category of events coded by transitive clauses which is characterized by a set of parameters substantially paralleling those identified by Hopper and Thompson. The cross-linguistic evidence assembled by Hopper and Thompson for the transitivity complex suggests that this prototype (or some prototype of which it is a subcategory) is universal in language. In DeLancey 1984a I have demonstrated the utility of such an analysis in describing the morphosyntax of Lhasa Tibetan. Briefly, the argument concerns the problem of characterizing the distribution of ergative case in Lhasa. In perfective clauses, ergative case marks the subject of most two-argument clauses, and of single-argument clauses with volitional actors, as in:

- (3) *na-s dkaryol bcag-pa-yin*
I-ERG cup break-PERF/VOLITIONAL
'I broke the cup (deliberately).'
- (4) *na-s dkaryol bcag-son*
I-ERG cup break-PERF/NONVOLITIONAL
'I broke the cup (inadvertently).'
- (5) *na-s dkaryol mthoñ-byuin*
I-ERG cup see-PERF/GOAL ACTOR
'I saw the cup.'
- (6) *na-s nus-pa-yin*
I-ERG cry-PERF/VOLITIONAL
'I cried.'
- (7) *na si-byuin*
I die-PERF/GOAL ACTOR
'I died.'

From just these few examples it is clear that it is impossible to describe the distribution of ergative case marking in terms of a single syntactic or semantic feature of the clause. Either a volitional actor or the presence of two argu-

ments is sufficient in a perfective clause, but neither is necessary. If we make the assumption that grammatical morphemes and syntactic constructions have meaning, then the meaning of Lhasa ergative case must be an example of Fillmore's (1982) CLIMB-type prototype meaning, in which the best exemplars of the category have both defining features, but the presence of either feature alone is sufficient to qualify an instance as a member of the category.

The picture is further complicated by the pattern of case marking in non-perfective clauses. With imperfective and future verb endings, the ergative marking of the subjects of two-argument clauses is optional, which is consistent with Hopper and Thompson's observation that non-perfective clauses are less highly transitive than perfective clauses. Single argument clauses cannot have an ergative argument unless they are perfective; which shows that while both volitionality and transitivity in the traditional sense are among the defining features of the category coded by ergative case, the presence of two arguments is the stronger determinant, since the presence of two arguments is itself sufficient to qualify a clause as transitive, while volitionality alone is not sufficient without the support of either perfective or the presence of two arguments.

It is clear, then, that a semantic characterization of Lhasa ergative marking is possible only in a prototype framework, in which the category is defined by a bundle of differentially-weighted features, no single one of which is criterial. The more of the relevant features that occur in particular instance, the better an instance it is of the category, but an instance can lack many of the defining features and still count as an exemplar of the category of transitive event. And, since the features which characterize the category are drawn from Hopper and Thompson's list of universal transitivity features (in fact more of Hopper and Thompson's features are relevant in Lhasa than I have discussed here; see DeLancey 1984a for further details) we have some basis for inferring the universality of this semantic prototype. The next problem is to find the explanation for the existence of such a universal category.

The cluster of attributes associated with transitivity define a semantic construct which approximates the notion of EVENT as opposed to STATE. The extreme version of the discourse-functional hypothesis I would interpret as asserting that these are purely discourse-based notions, with no independent semantic content; the somewhat less extreme version suggested by Hopper and Thompson is that only plausible reason for the grammatical prominence of this distinction is the discourse function of treating foreground mate-

rial as a sequence of events, and background material as more stative. I would argue instead that hypotheses about the cognitive process of category formation suggested by Rosch (e.g. 1978) and others would predict just such a semantic distinction. Rosch argues that cognitively optimal categories are maximally distinct from one another, and suggests that the process of category formation may operate in such a way as to maximize such distinctiveness:

[T]he more prototypical of a category a member is rated, the more attributes it has in common with other members of the category and the fewer attributes in common with members of the contrasting categories. ... [F]or natural language categories... the extent to which items have attributes common to the category was highly negatively correlated with the extent to which they have attributes belonging to members of contrasting categories... [S]uch structure may be a result of the human tendency once a contrast exists to define attributes for contrasting categories so that the categories will be maximally distinctive. (Rosch 1978:37)

Thus, given that human beings do categorize types of interaction of entities in the outside world, we would expect the categories which develop to cluster around prototypes which are maximally distinct from one another. We might, for example, anticipate the development of a category of events the prototypical exemplar of which is a kinetic event in which a human actor, acting in the most specifically human possible way, that is, volitionally, causes some perceptible change of state in a perceptible object, which would involve contrast with another category the prototype of which would involve no actors and no change in anything — typified perhaps by environmental statements such as *it's cold*. And, once such a categorial distinction was established, Rosch's hypothesis would predict that any further attributes which might be associated with either category would be those which would further maximize their distinctiveness:

[T]he same laws of cognitive economy leading to the push toward basic-level categories and prototypes might also lead to the definition of attributes of categories such that the categories once given would appear maximally distinctive from one another and such that the more prototypical items would appear even more representative of their own and less representative of contrastive categories. Actually, in the evolution of the meaning of terms in languages, probably both the constraint of real-world factors and the construction and reconstruction of attributes are continually present. Thus, given a particular category system, attributes are defined such as to make the system appear as logical and economical as possible. (1978:42)

Thus we might expect, for example, the association of perfectivity with the transitivity prototype, since ongoing processes are more like states than are completed events; similarly, transitive events with individuated patients are more time-bounded and thus more event-like than events involving multiple, seriated, or mass objects.

5. The experiential basis of the transitivity prototype

In the actual investigation of natural (as opposed to experimentally induced) categories carried out by Rosch and her co-workers, it turns out that the maximization of distinctiveness is not simply a result of the nature of the cognitive process of category formation, but rather seems to reflect the structure of the real world:

The second principle of categorization asserts that unlike the sets of stimuli used in traditional laboratory-concept attainment tasks, the perceived world is not an unstructured total set of equiprobable co-occurring attributes. Rather, the material objects of the world are perceived to possess high correlational structure...combinations of what we perceive as the attributes of real objects do not occur uniformly. Some pairs, triples, etc., are quite probable, appearing in combination sometimes with one, sometimes another attribute; others are rare; others logically cannot or empirically do not occur. (1978:29)

In other words, in categorizing natural objects it often is not necessary to select out those attributes which will form nice maximally distinct clusters, for the available — or at least the most salient — attributes cluster naturally. The fact that dogs and pine trees have relatively few attributes in common is a fact of biological nature, and not merely something imposed by human categorization; thus we can predict that most languages will have a category which includes dogs and cats but not pine trees, while few if any will have a category which includes dogs and pine trees but not cats.

Of course, the categories labelled by morphosyntactic constructions of the sort we are discussing here are not categories of material objects, but of event schemata; nevertheless the universality of the transitive prototype shows that it is somehow an extremely natural category, and not simply a cognitively economical one. I think it can be shown that the natural basis for the transitivity prototype is the universal human understanding of the physical fact that events have causes, i.e. that the basis of the transitivity prototype is a simple CAUSE -----> EFFECT schema which owes its universality to its universal utility in dealing with the real world. (Cf. Lakoff and Johnson 1980,

Lakoff 1982 for other discussions of the prototype nature of the linguistic and conceptual schema for causation, and DeLancey 1984b, 1984c, 1985a, 1985b, 1985c, for further discussion of its structure).

6. Deviations from the prototype

The event schema represented by the prototypical transitive clause can be analyzed as a sequence of two events: a volitional act on the part of the agent, and a subsequent and consequent change of state on the part of the patient. This causation schema, which has been widely discussed in the linguistic and philosophical literature, underlies a great many semantic/morphosyntactic categories. One class of deviation from this prototype is that in which these two events are less than optimally distinct. Thus, for example, reflexives are less transitive than ordinary events, as is reflected in the partial or complete syncretism of the expression of reflexivization and detransitivization in many Indo-European and many other languages (cf. Hopper and Thompson 1980:277-8). Single-argument clauses with volitional actors, such as *She jumped*, are even less transitive because in such events the CAUSE and EFFECT are not perceptually distinct.

More complicated classes of deviation from the prototype are those in which either the CAUSE or the EFFECT event is not fully accessible to an observer. This is at least part of the reason why imperfective clauses count as deviations from prototypical transitivity (the case of partitive objects can probably be considered here as well); for the event which is described in an imperfective clause is one in which the change of state of the patient has yet to be accomplished. Here we also find the reason for the inclusion of such characteristics of the agent as volition and animacy. To take an extreme example, we may consider the fact, documented and discussed in detail in DeLancey 1984b, that in some (and probably many) languages, events involving disease tend to be coded as deviations from prototypical transitivity, so that in English, for example, (8) is a much more natural sentence than (9) or (10), and the construction exemplified in (8) occurs only in connection with a small class of events involving drastic effects of physical or emotional states:

- (8) Somebody/my brother died of pneumonia
- (9) ?Somebody/my brother was killed by pneumonia.
- (10) ?Pneumonia killed somebody/my brother.

The nature of the deviation is the imperceptibility of the CAUSE event; only

the effect on the patient is directly accessible to an observer. I would suggest that such event schemata are difficult to categorize (and hence are coded with unusual morphosyntax) because their cause is not directly perceptible (DeLancey 1984b).

I have argued elsewhere (1981, 1984c, 1985a,b,c; cf. also Givón 1979:334-44) that it is here that volitionality enters into the prototype, in that volitional acts can be traced to an ultimate cause — the “act” of volition — while non-volitional acts cannot. Thus non-volitional acts, like events involving disease and similar causes, represent defective instances of the CAUSE --> EFFECT schema, and hence deviations from the cognitively more coherent prototype. Following out the connections between volitionality and evidentiality as semantic categories noted in DeLancey 1981, 1985a,b, we might expect to find evidence that the category of evidentiality is also connected to the universal transitive prototype; this suggestion of course awaits empirical verification (See Watanabe 1984 for some suggestive Japanese data).

7. **Transitivity, volitionality, and person**

This interpretation of volitionality is also closely intertwined with another transitivity parameter not discussed by either Hopper and Thompson or Lakoff — that of the person of the agent. Hopper and Thompson point out the support given their analysis of aspect and its place in the transitivity complex by the well-known split ergative case marking pattern in which perfective clauses have ergative case marking, and imperfective clauses accusative. In languages exhibiting this pattern we will obviously want to interpret ergative case as an index of high transitivity; from our earlier discussion of Lhasa Tibetan ergative marking we can see that at least in that language this interpretation is quite consistent with other facts about the distribution of ergative marking.

There is, however, another well-known split ergative pattern in which first and second person agents (hereafter SAP agents, for Speech Act Participant) are in nominative/absolutive case, while third person agents are marked as ergative. Analogizing from our earlier argument and the suggestions of Hopper and Thompson, we would tend to interpret this as evidence that clauses with SAP agents are less transitive than those with non-SAP agents. This does not seem particularly plausible on the face of it, and there is little or no other evidence for such a conclusion, and considerable evidence for the opposite claim. In at least some languages with direct/inverse marking systems or analogues thereof (DeLancey 1981), inverse forms — i.e. verbs in

transitive clauses with SAP patient and non-SAP agent — are morphologically explicitly marked as lower in transitivity than direct forms (i.e. with SAP agent and non-SAP patient). A clear example is the Coast Salish language Lummi, discussed by Jelinek and Demers (1983; similar patterns occur in some other Salish languages). In Lummi, direct clauses must be in what Jelinek and Demers analyze as active voice, while inverse clauses are obligatorily in a form which they label passive. That is, there is no “passive” counterpart to (11) or (12), and no “active” counterpart to (13) or (14):

- (11) *xči - t - sən* *cə swəy?qə?*
know-TRANS-1st the man
'I know the man.'
- (12) *xči - t - sx^w* *cə swəy?qə?*
know-TRANS-2nd the man
'You know the man.'
- (13) *xči - t - y - sən* *ə cə swəy?qə?*
know-TRANS-INTER-1st by the man
'I am known by the man.'
- (14) *xči - t - y - sx^w* *ə cə swəy?qə?*
know-TRANS-INTER-2nd by the man
'You are known by the man.'

What is particularly relevant to our present concerns is the fact that the *y* morpheme which characterizes the passive or inverse forms is explicitly identifiable as a detransitivizing morpheme, so that (13) and (14) are morphologically marked as lower in transitivity than (11) and (12). Obviously, then, the agent marking preposition must be considered an index of lowered transitivity, like the oblique agent marking in other voice alternations such as that of English. Analogizing from this pattern to the SAP/3rd split ergative pattern (arguments for this analogy are given in Silverstein 1976, Heath 1976, Dixon 1979, and DeLancey 1981), we can conclude that there too the presence of ergative case is an index of lower rather than of higher transitivity.

We now require an explanation for the apparent fact that a non-SAP agent represents a deviation from the transitive prototype. At least a partial answer is suggested by the pattern of volitionality marking in Lhasa Tibetan, where the morphosyntactic indication of volitionality is restricted to clauses with first person participants (Jin 1979; DeLancey 1985a,b) similar patterns occur in some other Tibetan dialects (Schöttelndreyer 1980) and in the Tibeto-Burman language Newari (Hale 1980, Genetti 1985ms)):

- (15) *na-s deb der bzag-pa-yin*
I-ERG book there put-PERF/VOLITIONAL
'I put the book there.'
- (16) *na-s deb brlags-soñ*
I-ERG book lose-PERF
'I lost the book.'
- (17) *kho-s deb der bzag-son*
he-ERG book there put-PERF
'He put the book there.'
- (18) **kho-s deb der bzag-pa-yin*
he-ERG book there put-PERF/VOLITIONAL

I have demonstrated elsewhere (DeLancey 1985, 1986) that this distinction is in fact an integral part of the Lhasa evidentiality system, and the reason for its restriction to clauses with first person actors is that one can have direct knowledge of the volitionality or non-volitionality only of one's own acts; volitionality is a mental state not observable by others. (I suspect that more cross-linguistic evidence of this sort can be found than I have in hand; cf. the active-type Caucasian language Bats, in which the active case marking pattern — i.e. the formal indication of control — occurs only with SAP subjects. The relevant data are discussed in DeLancey 1981). Thus the complete transitive prototype can only be clearly perceived in the subjective observation of one's own actions; the attribution of volitionality, a crucial parameter of the prototypical transitive event, can only be inferred elsewhere. (The ambiguous position of second person in this hypothesis, and in the available data, merits further consideration; some preliminary discussion can be found in DeLancey 1981. It is interesting to note that in Tibetan and Newari volitionality is distinguished for second person actors in direct yes/no questions).

8. Syntax and discourse

While the preceding argument certainly leaves large gaps, which I hope will prove tempting to other investigators, I think it is clear that a cognitively-based semantic account of the transitivity complex is feasible, and can offer a plausible explanation for a wide range of cross-linguistic morphosyntactic tendencies. Our suggested basis for the semantic prototype also should satisfy Hopper and Thompson's demand for

a satisfactory answer to the obvious ... question: what is so important about Transitivity, and why does it figure so prominently in the grammars of language after language? (1980:280)

However, it remains to be shown how this hypothesis can account for the correlation between transitivity and foregrounding in discourse. At this point an answer to this problem can only be suggestive and programmatic, although there is increasing reason to believe that the empirical investigation of actual discourse production will soon make it possible to adduce evidence for or against (undoubtedly for) the suggestions made here. (See, for example, Tomlin's paper in this volume for an illustration of techniques for investigating the psychological basis for event structure in discourse).

We can take the basic instance of narrative discourse (at least logically, and no doubt also ontogenetically and phylogenetically) to be the eyewitness account, i.e. a narration of an event or series of events which the speaker has observed first-hand, and the basic purpose of such a narration to be to recreate in the hearer's mind something like the speaker's mental representation of the event. (Cf. Goffman 1974:504ff. for further discussion of this genre of narrative). A good example is a sportscaster's play-by-play commentary (cf. Tomlin 1983), especially when intended for a radio audience. Any other type of narrative — fictional, speculative, dishonest, or whatever — is just a step or two further removed from reality. Any type of narrative discourse is (perhaps among other things) an attempt to present a series of events as though it actually happened, and to induce in the hearer's/reader's mind a representation which simulates the representation which would be created by actually perceiving the events in reality.

Now, considering narrative as a recreation of actual experience, we can hypothesize that those events will be foregrounded which in actual perception of the event were perceptually or psychologically most salient — which is to say that, in telling a true story, one concentrates on the most interesting parts. Thus, in considering such reality-based narrative, we can rephrase a number of Hopper and Thompson's statements about the discourse function of various transitivity parameters as psychological rather than purely linguistic claims. For example, in explaining the discourse relevance of the kinesis feature, Hopper and Thompson point out that "Foregrounded clauses typically narrate events ... It follows that the verb in a foregrounded clause is normally one which signals such a change". The probable reason for this correlation is that kinetic events, involving changes of place or condition, are perceptually and cognitively highly salient; this ensures their prominence in the perceptual and cognitive analysis and representation of a series of events, and this in turn guarantees them foreground status in a report of the event. Coding such events as salient amounts to telling the hearer that if he had seen the action he too would have found these the most salient events, and that he

should so consider them in building his own mental representation which the speaker's narrative is intended to help him create.

By this line of argument, arguments such as Hopper and Thompson's for the discourse prominence of highly transitive clauses are in fact arguments for the psychological salience of events close to the cognitive prototype which is coded by transitive morphosyntax. It is this notion of psychological salience which will explain the behavior of grammatical transitivity in discourse. Our ultimate goal, in the study of discourse as well as of semantics and morphosyntax, should be to find explanations for our data at an extralinguistic cognitive level. The reason why it turns out to be difficult to explain the discourse patterning of morphosyntax in semantic terms, or to explain morphosyntax in terms of discourse function, is that there is no direct causal relationship in either direction. Rather, both are informed by cognitive and perceptual structures. We may hypothesize that, at least to a considerable extent, the semantics and discourse behavior of a given morphosyntactic construction reflect the same underlying cognitive representation, so that the results of the study of discourse and of semantics should tend to converge; comparison of the prototype interpretation of transitivity developed here and by Lakoff with the discourse-functional argument of Hopper and Thompson will show an example of such convergence.

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ACTIONS AND PROCEDURAL DIRECTIONS

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1. Introduction

Procedural directions have a unique property among discourse types: people often act on them to accomplish some task. In keeping with this property, I will argue in this paper that the appropriate unit of analysis for directions is the action, rather than the clause, proposition, or event. This conclusion was reached primarily on the basis of psychological research on the comprehension process and psychological theories of mental representation. However, despite these psychological origins, the approach taken here seems to have some implications for the structure of the directions themselves, and thus touches on a number of linguistic concerns. In this paper, I will describe and test a model of how directions are comprehended, and will then consider how the model is relevant to the structure of the directions.

The first section will discuss a general framework I have used for studying directions. The central point of that framework is that directions are understood by constructing a mental representation, or plan, for performing a task. The next section will describe some current psychological notions about how such mental plans might be organized. When combined with a model of the comprehension process, the notions make some clear predictions about how directions will be processed. These predictions are then tested by looking at the patterns of reading times for different forms of a direction. Finally, I will conjecture about some of the linguistic properties of directions based on the reading time results.

2. A Framework for Studying Directions

In this section I will describe why the structure of mental plans seems to be of critical importance in the study of procedural directions. The domain of interest here is the use of written directions for performing a given task.

Directions may be presented in forms other than written text (e.g., with speech or with pictograms). Although analogous processes may occur with direction forms other than written (cf. Marcel & Barnard, 1979), I will limit this discussion to the written form only. It is also possible for directions to be used for purposes other than performing a task. For instance, they could be used to help understand how a particular device works, they could be used to find out a specific fact (e.g., an ingredient in a recipe), or they could be read simply for general interest. However, I am concerned only with the case where the reader intends to perform a particular task on the basis of the directions. This intent should have an effect on the nature of the internal representation constructed from the directions. Specifically, the reader must be sure to construct a representation that would be adequate for performing the task. This is not necessarily the case when the same sentences are read for other purposes. For instance, Dixon (1984) found that the comprehension process was quite different when subjects merely had to recall directions instead of carrying them out.

When directions are used to perform a task, their mental representation can be thought of as a plan for carrying out that task. Although other representations might be constructed as well, a mental plan must be present in some form if one is to do the task. That is, the fact that one can read a set of directions, put them down, and then perform a task correctly indicates that a mental representation of those directions must have existed and that that representation was adequate for performing the task. Such a representation will be referred to as a mental plan for the task.

The relationship between a set of directions and its mental plan may be somewhat different than the one usually assumed to exist between a text and its mental representation. It is often assumed that the representation generally reflects the information present in the text, rather than the way in which the representation may eventually be used. For instance, the distinction between foreground and background information in discourse is motivated by the assumption that this distinction affects the mental representation (e.g., Hopper & Thompson, 1980). That is, a piece of information will be represented as either foreground or background depending on how it is stated in the text. Similarly, Omanson (1982), Kintsch and van Dijk (1978), and Meyer (1975) present methods of analyzing a text to infer the mental representation that should be acquired from reading it. Although these authors do consider how the mental representation might vary with the readers' intentions and goals, it is still the case that the structure and content of the representation is

determined primarily by the structure and content of the text. Thus, the main criterion for the appropriateness of a mental representation would be the discourse itself.

In contrast to other discourse forms, the appropriateness of a mental plan is determined primarily by the task, not by the directions from which it was constructed. That is, a plan is appropriate if it allows one to perform the task correctly and efficiently. If the task cannot be done on basis of the plan, then the plan is inappropriate, and the reader cannot really be said to have understood the directions. While the mental representation of other forms of discourse may reflect the structure and content of the discourse, mental plans are constrained first of all by what has to be accomplished. This follows from the assumption that understanding a set of directions involves constructing a plan that is adequate to perform the task.

The ultimate measure of understanding would then be whether the readers of the directions can perform the task or not. If they can, then it seems reasonable to suppose that they had possessed an appropriate mental plan and had understood the directions. On the other hand, failing to perform the task does not necessarily mean that they did *not* understand. It is also possible that their failure was due to limitations other than those of the mental plan. For instance, subjects in a study by Dixon (1982) read three sentences describing how knobs and buttons should be adjusted, and then carried out the steps. Subjects made a large number of errors in this task. However, no difficulty was encountered at all when each step was read and performed in isolation. The logical inference is that performance was poor in the first case because subjects had difficulty remembering all the steps in the plan, not because the plan itself was inadequate. In order to assert that someone fails to understand a direction, it must be clear that they could have performed the task if they *had* constructed an appropriate mental plan.

A working assumption in this approach is that there is only a single appropriate plan for a given task. This assumption seems plausible for the fairly simple and straightforward tasks I have used in my experiments (e.g., turning a knob to adjust a meter, pressing a button to turn on a light, or drawing simple schematic pictures). In each of these cases there would seem to be only a single reasonable and efficient way to do the task, and there may be little variation in how that strategy is represented. The assumption seems less appropriate for tasks that are complex or that can be accomplished in a number of different ways. For example, to get to Manhattan from New Jersey, one could take the Holland Tunnel, the Lincoln Tunnel, or the George

Washington bridge. Since each route has its own advantages and disadvantages, there would be no single best plan for making the trip. However, this situation may not be typical of many of the tasks people perform from directions, and I will at least start off by assuming that there is only one correct plan.

A second assumption is that a reader of a set of directions will generally be able to construct the appropriate plan regardless of how the directions are stated. In other words, readers will take information from the directions and use it to construct the best plan for performing the task. Since the plan is designed specifically for the task, it may not depend on the form of the directions themselves. This assumption would seem to be true when the optimal plan structure is readily apparent. That is, the plan may be independent of the form of the directions when the task is similar to other known procedures, or when the reader can infer the best plan representation based on other world knowledge.

For instance, suppose that someone is using a set of directions for changing a light bulb. If the steps are presented in reverse temporal order, the form of the directions would be clearly inappropriate for an optimal plan:

1. A new bulb will have to be screwed into the socket.
2. The old bulb will have to be removed.
3. A ladder will be needed to reach the socket.

It may be awkward to use this form for the mental plan because the information needed first would actually be at the end of the representation. The proposal here is that the plan would instead represent these steps in the correct temporal order. Because they are not presented in this order, the steps would have to be rearranged mentally in order to construct the plan.

Clearly, there are some situations in which this assumption would not hold, and the plan representation would be strongly affected by the form of the directions. For instance, if the task was completely novel to the reader, he or she would have difficulty in deciding what the best plan would be, and would have to use whatever clues could be found in the directions. Or if the directions were especially poor and misleading the reader may have difficulty in rearranging the information appropriately. (For example, this might occur if the example above had ten or fifteen steps instead of three; readers would probably have trouble reordering the steps, and the mental plan would be inefficient or inaccurate.) However, cases such as these may be exceptions; most of the variations in form one is likely to encounter may have little effect

on one's ability to construct an appropriate mental plan.

In summary, directions are understood by constructing a mental plan for performing the task, and the appropriateness of that plan can be judged by looking at how well the task is performed. In my approach I have made two additional assumptions about the nature of these plans: For most tasks there is only a single appropriate plan representation, and readers of directions can generally construct that representation regardless of the form of the directions. Together, these assumptions mean that the process of understanding directions is tied closely to the structure of mental plans. In the next section I will describe one view of mental plans, and will discuss how the comprehension process is affected by them.

3. The Hierarchical Plan Model

According to the previous analysis, the key to understanding how directions are processed lies in understanding the nature of mental plans and how they are constructed. This section will present an approach to plans and plan construction that I have referred to previously as the hierarchical plan model (Dixon, *in press*). The balance of the paper will then consider the model's implications for written directions.

The first assumption of the model is that plans are organized hierarchically. This idea is common in cognitive psychology and artificial intelligence (e.g., Miller, Galanter, & Pribram, 1960; Sacerdoti, 1977). Consider for example the artificial intelligence system described by Sacerdoti (1977). In this system, a plan is represented as a hierarchy of actions. The action at the top of the hierarchy is a general description of what has to be accomplished. The level below that describes each of the major component steps involved. Levels below that break up each component into more specific actions, and so on. For instance, the top level of a plan might be the action, "Go home." At the second level might be its component steps: "Leave office," "Go to car," and "Drive home." Furthermore, "Leave office" might be broken down into "Put on coat," "Turn off light," and "Lock door." Thus, each level of the plan hierarchy becomes more detailed and specific than the previous one.

The present approach will also assume that each element in the plan hierarchy is an action, and will represent each action as an action schema (cf. Schmidt, 1975). In this context, a schema can be thought of as a prototypical description of an action, but containing variables or "slots." By filling in different values in these slots, an action schema can be adapted to particular situations. For instance, one might have a "measure ingredient" schema for use

in following recipes. The schema might say something like, "Pour [ingredient] into measuring cup until it reaches [amount]." Here, "[ingredient]" and "[amount]" are variables that can take on different values. After filling in the appropriate value, the schema could be used to measure a half cup of milk, three quarters cup of boiling water, or any other combination of ingredient and quantity.

The use of schemas here is similar to that of Norman (1981) in his discussion of action errors. He assumed that schemas for performing actions are stored in long-term memory, and are activated under the appropriate circumstances to accomplish a given task. After the schemas are activated, values for each of the variables in the schema have to be selected. Some of the errors Norman discussed may in fact occur because the incorrect value is filled in. For example, an error of putting the lid to the sugar container on the coffee cup instead of back on the sugar container may be caused by using the wrong value in a "replace lid" schema.

Two principles will be borrowed from Norman's (1981) theory of action schemas. The first is that the action schemas are already present in long-term memory before an action is planned or carried out. The process of creating a plan on the basis of a set of directions consists of selecting the appropriate schemas from those already known, rather than constructing each schema afresh. In order to accomplish a given task, a collection of schemas would have to be selected and organized to perform the component steps in sequence. The second principle is that the preparation of a schema proceeds in two stages. First it must be selected from those in memory, and then values for each of its variables must be chosen. In other words, each component step in the task is performed by reference to prior knowledge of similar steps, which is then adapted to the task at hand.

Plans with this type of organization may have to be constructed from the top down. That is, the top levels of a plan hierarchy may have to be activated and filled in first, followed by the lower, more detailed levels. This corresponds to how a lot of explicit and deliberate planning is done. For instance, when writing a paper, one may first write an outline which describes the paper at a high level, and only afterwards go on to work on the details. Or when planning a trip, one may first work out the general itinerary, and then later decide the details such as where one might eat dinner. The present assumption is that this general-to-specific sequence also applies to understanding written directions.

A final issue in plan construction concerns how information about differ-

ent plan components is obtained from a set of directions. My assumptions here are largely borrowed from current models of reading (Rumelhart, 1977; Just & Carpenter, 1980). To begin with, I will assume that the analysis of written text takes place at a number of levels simultaneously. These levels include the perception of individual letters and words, the retrieval of appropriate word meanings, and the analysis of the syntactic structure of the sentence. Information obtained at each level would be available to all the other levels. For instance, if the syntactic analysis expected the next word to be a noun, that information could be used at the lexical level to help select a word meaning.

The process of constructing a mental plan would operate simultaneously in this same environment. Whenever a piece of information relevant to the evolving plan is found in the sentence, it would be used by the planning process to add another plan component. Thus, by the time the end of the directions is reached, most of the plan would already be finished. In this view, plan construction generally overlaps with the perceptual, lexical, and syntactic processes used in reading. As will be seen below, longer reading times can result when this overlap cannot occur.

In summary then, constructing a mental plan consists of first finding information in the directions about the major component steps in the task. In parallel with other reading processes, this information is used to activate schemas in memory, and adapt them to the task at hand by putting appropriate values in their variable slots. This procedure then continues with the lower levels of the plan hierarchy. The completed plan can finally be used to perform the task. This model already has some support from a series of experiments on how long it took to read directions of different forms (Dixon, in press). The next section will describe and test another prediction of this model.

4. A Test of the Hierarchical Plan Model

The model as described so far makes a simple prediction about the time it takes to understand a direction: The direction should be easiest to understand when the high-level information precedes the low-level information. As reading proceeds from left to right, the high-level information will be encountered first. The information can be used immediately to begin constructing the mental plan. Subsequently, the low-level information will be found and that can be put into the plan as well. But when the high-level information comes after the low-level information, the direction will be more dif-

ficult to understand. This is because the low-level information cannot be incorporated into the plan as soon as it is encountered. Rather, it must be held in working memory until the upper parts of the hierarchy are completed, and only then put in the plan.

This may lead to comprehension difficulties in two ways. First of all, the additional information may tax working memory beyond its capacity limits. And when information is lost from working memory there may be gaps or inaccuracies in the mental plan. A second possibility is that longer comprehension times may result because the plan can be completed only after the end of the direction is reached. That is, there would be less overlap between the plan construction process and other reading processes, and it would take longer overall to read the directions and construct the plan.

An example may make this prediction more concrete. The direction, "To make a house draw a square and put a triangle on top" contains two kinds of information. The first is a high-level description of the task to be performed: "Make a house." The second is the component steps involved in making a house: "Draw a square" and "Put a triangle on top." To construct a plan from this direction readers would first search memory for a schema for drawing a house. The schema would presumably contain information about the component parts of a house (e.g., walls and roof), and the relationships among them. Then, at a lower level, schemas for drawing squares and drawing triangles would be activated. These schemas would contain variables determining their size and orientation. Information from the top-level house drawing schema could be used to fill in these size and orientation variables.

When the high-level description comes first in the sentence, each one of these processes could occur as soon as the relevant information is encountered in the sentence. But when faced with a direction such as, "Draw a square and put a triangle on top to make a house," the reader would have to save the component step information until he or she reaches the end of the sentence and finds out what is being drawn. That is, schemas for the lower-level components cannot be activated until the top level of the hierarchy is completed. Since plan construction will not overlap with other reading processes in this case, comprehension time should be longer. And, since working memory is being taxed, more errors should result.

An experiment was performed to test this prediction. Sixty directions were constructed describing how simple schematic drawings of common objects could be made. Subjects were then timed while they read and carried out the directions. The hypothesis would be supported if directions stating

the high-level information first led to shorter reading times and fewer errors than those that began with the component steps.

Method

Sixty sentences were constructed using the following model: "To make a draw a". The first blank contained a common object that subjects should be familiar with, such as house, bowling ball, or umbrella. The second blank contained the component steps for making a simple schematic drawing of the object (e.g., "To make a house draw a square and put a triangle on top"). There were always at least two component steps, and they were described in a way that was unrelated to the object being drawn. For example, a direction such as, "To make a house draw a square and put a roof on top" was not allowed because "roof" is related to "house."

Each direction was written in two forms. In *object-embedded* sentences the object being drawn was embedded in a subordinate clause (e.g., "To make a house draw a square and put a triangle on top"). In *component-embedded* sentences the component steps were embedded in a subordinate clause. This form followed the model, "You can make a ... by ..." (e.g., "You can make a house by drawing a square and putting a triangle on top"). In addition, an object-first and a component-first version was constructed from each sentence by simply switching the order of the two clauses (see Table 1).

The directions were presented to subjects one at a time on a video monitor under the control of an Apple II microcomputer. The procedure for each sentence was as follows. When subjects were ready to read a direction, they pressed and held down a button labeled "sentence." After a short delay, one of the directions appeared on the screen. It stayed there as long as the subjects continued to hold down the button. When they had read and understood the direction, they released the button and the sentence disappeared. At this point subjects drew the object in a numbered box in an answer booklet.

Reading time was defined as the length of time the sentence was on the screen; drawing time was the time from when the button was released to the time the subjects pressed the button again to read the next sentence. Subjects were asked to press the button with their preferred hand to insure that reading and drawing did not overlap. A drawing was judged correct if it was a reasonable depiction of the object and was consistent with the component steps in the direction. Accuracy was scored without any knowledge of the form of the direction seen by the subject.

Each subject read 30 embedded-object sentences and 30 embedded-component sentences. Half of each were presented with the object first, and half were presented with the components first. Which of the sixty objects was described with each form was randomly determined for each subject. The data analysis was performed on the median reading and drawing times on correct trials for each subject and sentence form.

Results

The median reading times averaged across subjects are shown in Figure 1. As can be seen, the directions were read much more quickly when they began with the object to be drawn, rather than the component steps ($F(1,22)=44.37, p<.001$). The order of the subordinate and main clause had no reliable effect on reading time. There were also no statistically significant effects on drawing time or percent correct (see Table 1).

Discussion

These results clearly support the assumptions of the hierarchical plan model. The model assumes that plans are hierarchical and constructed from the top down, and that plan construction generally occurs as soon as the relevant information is available. Together these assumptions predict that directions should be read faster when they present information in the order in which it is used. Thus, object-first sentences should have shorter reading times because the object is used to activate the top-level schema in these directions.

This experiment could have conceivably turned out quite differently. For instance, one possibility is that reading time would have been determined by the syntactic structure of the sentence, not by the nature of the information in the two clauses. One might have expected simply that sentences would be read faster when they began with the main clause. Another possibility is that sentences would have been read faster when the information was in the correct temporal order (Spoehr, Morris, & Smith, 1983). In this case, the object being drawn might be viewed as a consequence of the component steps. For instance, a picture of a house is the consequence of drawing a square and putting a triangle on top. Thus, it might be argued that the directions should be read faster when the information is in the correct temporal order with the object being drawn at the end of the sentence. The fact that neither of these arguably plausible predictions occurred is support for the hierarchical plan model.

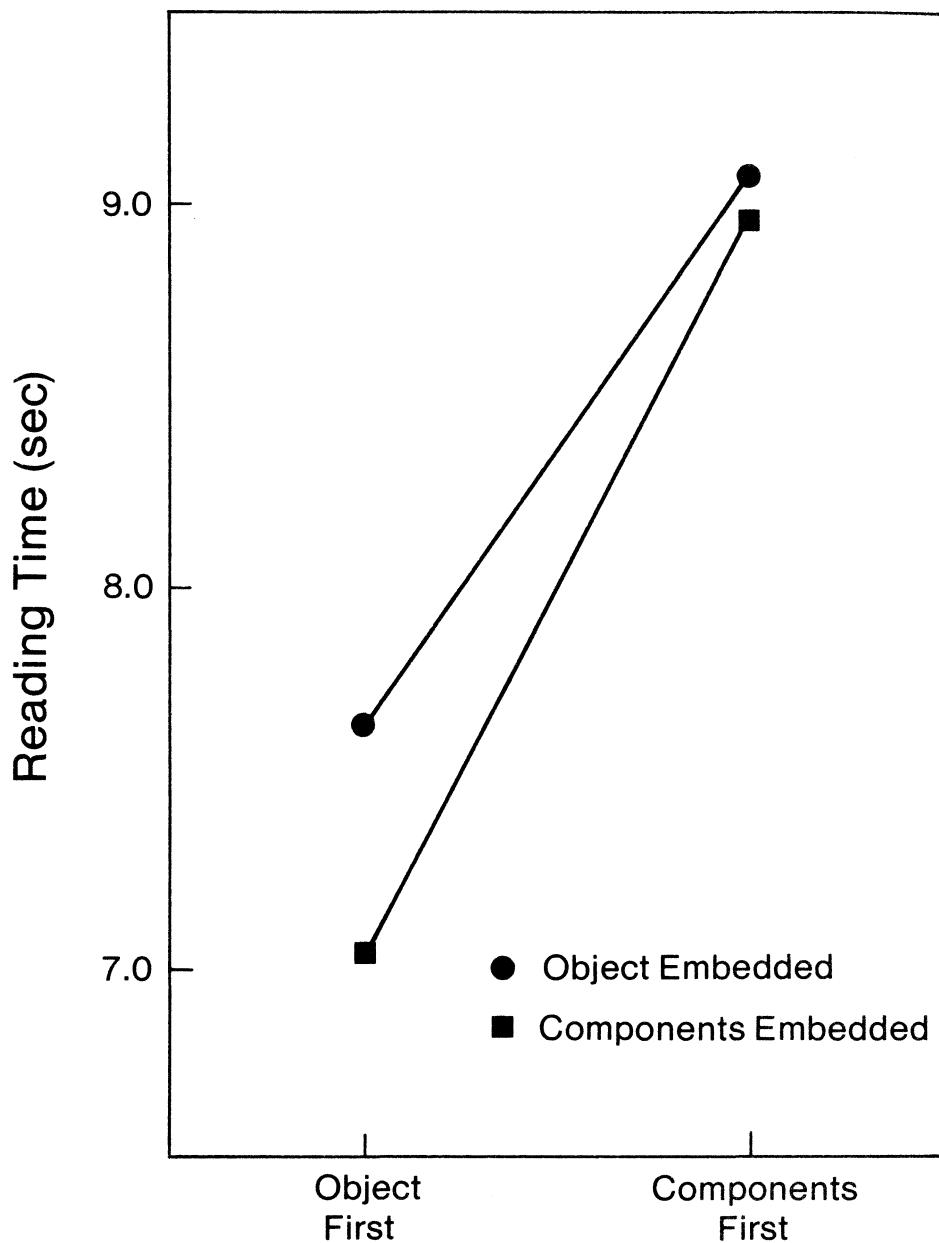
Contrary to the predictions made above, there was no effect on error

TABLE 1
Mean Drawing Times and Percent Correct

Sentence Form		Drawing Time (sec)	Percent Correct
Object First, Object Embedded	"To make a house draw a square and put a triangle on top."	10.45	85%
Object First, Component Embedded	"You can make a house by drawing a square and putting a triangle on top."	9.84	83%
Component First, Object Embedded	"Draw a square and put a triangle on top to make a house."	10.29	84%
Component First, Component Embedded	"By drawing a square and putting a triangle on top you can make a house."	10.04	81%

rate. The hypothesis was that holding on to the component steps while reading the rest of the sentence would tax working memory and lead to an incorrect or inadequate plan. The fact that an effect on error rate did not occur suggests that working memory was not a limiting factor in this task. Although there were a substantial number of errors, they may have been due to other causes, such as misinterpreting words or phrases. It is possible that the error rate effect would be obtained if the sentences were made more demanding, for instance by adding more syntactic complexity.

With the present materials it is clear why hierarchical plans would be constructed from the top down. The high-level action of drawing a particular object exerts a strong influence on the features and relationships of the component steps. For instance, the fact that a house is being drawn affects the size and shape of the triangle used for the roof, and how it should be related to the square. In other words, how a particular component step fits into the plan is not clear until after the high-level information about the object being drawn



organizes the overall plan structure. This is consistent with the proposal made by Norman (1981) that lower-level schemas receive many of their variable values from the schemas on the upper levels. In part, plans are constructed in a top-down manner in the present model because the top levels impose constraints and conditions on the lower levels.

This experiment has provided clear evidence for the hypothesis that plans are organized hierarchically. Moreover, the results indicate that directions are understood more quickly when they reflect that hierarchical structure. That is, reading time is shorter when information at the top of the plan hierarchy comes first in the sentence. In the following section I will propose another way in which the form of directions may indicate a plan's structure.

5. The Role of Action Statements in Directions

The hypothesis I will suggest in this section is that explicit action statements in a set of directions often signal a piece of information that is near the top of the plan hierarchy. From a logical point of view, many pieces of information in a plan can be described either as an action, or in terms of the states or conditions that surround that action. For instance, one can say either, "Start the motor before proceeding further," or equivalently, "The motor should be running before proceeding further." In one case the action is stated explicitly, while in the other it must be inferred from the statement of the desired state. Thus, the writer of a set of directions generally has a choice of how to express a component of a plan hierarchy. The hypothesis is that when the component is at a high level in the hierarchy it will be stated as an explicit action; when it is lower it will be stated implicitly as a state or condition. The writer uses this device to signal hierarchical height to the reader.

. This hypothesis is reminiscent of the distinction between foreground and background information in discourse (e.g., Hopper, 1977). Foreground information describes the sequence of events that define a narrative, while background information often describes states or conditions that are present while the events are taking place. Given the nature of the foreground information, it is more likely to be expressed with an action clause than is the background information. For instance, Hopper and Thompson (1980) found that 88% of the foreground clauses in their corpus were active, while only 41% of the background clauses were. Presumably, this correlation between action and foregrounding is caused by the nature of the information: the narrative events that make up the foreground are most easily described in terms

of actions.

High-level information in a plan hierarchy is similar to foreground information in narrative in that both consist of the most central or important elements in the discourse. Consequently, the present hypothesis simply restates the Hopper and Thompson (1980) findings in terms of written directions. However, the reasons action statements indicate high-level information may be quite different for directions than for other discourse types. The hierarchical plan model assumes that information is represented by action schemas at all levels of the hierarchy. In the experiment described above, component steps such as, "Draw a square and put a triangle on top" are just as much actions as the object information, "Make a house," even though the former is lower in the plan hierarchy. Moreover, the component steps would probably still be represented as actions even if they were not stated as such. For instance, I would expect the same mental representation for sentence in which the component actions were not stated at all, as in, "Make a house with a square and a triangle on top." Thus, the use of actions for high-level information may be purely conventional, and not related at all to the nature of the information being conveyed.

The hypothesis that high-level information in directions is signaled by explicit actions helps make sense of a previous series of reading time experiments (Dixon, 1982, *in press*). The sentences used in those experiments were divided into action information and condition information. For instance, in the direction, "Press button A while light Z is on," the first clause states an action (pressing the button), while the second clause states a condition that should be true before the action is performed. A consistent finding in those experiments was that sentences were read faster when they began with the action clause. Table 2 shows some representative sentences, and the reading times for the action-first and action-second order.

Each of these results fits with the hierarchical plan notion developed here. For example, consider the direction, "Turn the left knob to set the alpha meter to 20." The main, central action is to turn the knob. However, turning the knob actually has a number of more specific components: one has to move one's hand to the knob, grasp it, twist it until the alpha meter reads 20, and then release it. The action of checking the alpha meter would then occupy a subordinate position in the action hierarchy because it is simply one component of the more general action of turning the knob. Thus, the action-first version is read faster than the action-second version because the action information is higher in the plan than the condition information.

The present hypothesis explains why it is always the action information that is at the top of the hierarchy in these experiments. The hypothesis states that actions will most naturally be used for high-level information. Since in each case the direction was intended to be a natural and straightforward description of the task, the action may have ended up describing information higher in the plan hierarchy than the conditions did. For example, when the task involves checking a meter during the course of turning a knob, the most natural way to express it would be with an explicit action for turning the knob, and an implicit action for reading the meter, as in, "Turn the left knob to set the alpha meter to 20." Since checking the meter is only a subordinate component of turning the knob, it would be odd to state it as an explicit action. Thus, it is possible that by trying to state the directions naturally, these experiments unintentionally confounded the action/condition distinction with height in the hierarchical plan representation.

It would be interesting to consider how planning would proceed if these two factors were unconfounded. According to the present view, sentences that begin with the high-level information should be read more quickly regardless of whether the high-level information is stated as an action or not. Since the same task is being performed, the same plan would have to be constructed, and the same information would be needed at the top level of the plan. For instance, consider a sentence such as, "You can draw a house with a square and a triangle on top." Here the high-level information is stated as an explicit action and the low-level component are only implicit. However, this situation could be turned around as in, "After drawing a square and putting a triangle on top you will have a house." In this version, the component actions are explicit and the high-level information is stated as a condition. Thus, the low-level information is marked incorrectly as high in the hierarchy.

I would predict that a person actually trying to carry out the direction would realize that the information about a house should go at the top of the hierarchy, regardless of how the sentence is phrased. Sentences with an inappropriate structure may take longer to understand, but they would still be read faster when they begin with the high-level information. However, this prediction may be limited to cases in which there is a single hierarchical organization for the plan that is obvious to the reader. When the task can be done in a number of different ways or with different plan organizations, stating an action explicitly may cause it to be put near the top of the plan hierarchy. In other words, the way in which directions are phrased may affect the

TABLE 2
Effects of Information Order on Reading Time (sec)

Sentence Form	Action-First Order	Action-Second Order
1. The left knob should be turned in order to set the alpha meter to 20. ^a	3.58	4.18
2. As a result of turning the left knob the alpha meter should read 20. ^a	3.80	3.96
3. Hold the left button down to get the gamma meter above 20. ^b	4.56	5.18
4. Hold the left button down if the gamma meter is above 20. ^b	4.80	5.03
5. Before pressing button A light Z should be on. ^c	2.50	2.60
6. Press button A while light Z is on. ^c	2.25	2.35
<p>a. Sentence 1, Immediate Performance Condition in Experiment 1, Dixon (1982)</p> <p>b. Sentence 3, Immediate performance Condition in Experiment 2, Dixon (1982)</p> <p>c. Antecedent conditions in Experiment 1, Dixon (1984)</p>		

plan representation if there are few semantic and pragmatic constraints on its organization.

Several previous results seem to support the hypothesis that the relationship between explicit actions and hierarchical height is only conventional rather than causal. For instance, in Experiment 2 of Dixon (1984) sentences like (5) and (6) in Table 2 were used, but the experimental task was arranged so that the condition clause contained a piece of information needed at the top of the plan hierarchy. It was argued in that study that turning a light on and turning a light off were accomplished with two different action schemas. So a direction such as "Press button A to turn light Z on" would use a "turning on" schema, while "Press button A to turn light Z off" would use a "turning

off" schema. Thus the word "on" or "off" in the sentence was needed to decide which top-level schema should be activated. Since the word occurred in the condition part of the sentence, the condition-first sentences were read faster. In this case, the action statement did not indicate the most important or central piece of information.

Another experiment in which action statements may have failed to indicate the most important information was reported by Spoehr, et al. (1983). They had subjects read and carry out directions such as, "If the sigma indicator light is on turn the right knob so that the gamma meter reads 20." The first part of this example ("If the sigma indicator light is on") is an antecedent condition that should be true before starting the action. The second part is the main action to be performed ("turn the right knob"). Finally a condition is stated that should be the consequence of the action ("the gamma meter reads 20"). Spoehr, et al. found that the directions were read fastest when they stated the antecedent condition first, then the action, and then the consequent condition. Action-first sentences were read more slowly (e.g., "Turn the right knob if the sigma indicator light is on so that the gamma meter reads 20").

This result can be explained by considering how the antecedent, action, and consequence might fit into a plan for performing the task. At the top level of the hierarchy would be a general action to be accomplished, such as "Adjust meter." Below that would be two component steps, "Check sigma indicator light," and "Turn right knob." The action of checking the consequent condition would be a subcomponent of turning the right knob. I have assumed here that the antecedent and the action would be represented at the same level in the plan hierarchy. This may be appropriate in the Spoehr, et al. (1983) task because the antecedent and the action were not causally or logically related. Thus, it is reasonable to think of them as two independent actions. Since the action clause would not be higher in the hierarchy than both of the other clauses, there would be no reason to predict that action-first sentences would be read faster.

This analysis leads to what seems to be a more natural way of stating the the Spoehr, et al. (1983) directions. By hypothesis, high-level information should be stated as actions. Since there are two major component steps ("check indicator" and "turn knob"), each should be stated as an explicit action. Only the subordinate consequence should be stated as a condition. The direction thus becomes, "Check that the sigma indicator is on and then turn the right knob to set the gamma meter to 20." This seems less awkward

than the Spoehr, et al. (1983) version, despite being a little longer.

In summary, the hypothesis that explicit actions signal information near the top of a plan hierarchy accounts for a number of previous reading time results. Since directions are read more quickly when they begin with high-level information, it could account for the finding that action-first sentences are read more quickly in Dixon (1982) and Dixon (in press). Moreover, since action statements are only correlated with high-level information by convention, it is possible to construct examples where lower-level information is stated as an action, and the high-level information is stated as a condition. In these cases the action-first order is read more slowly, as predicted by the hierarchical plan model.

6. Conclusions

In this paper I have argued that understanding directions involves constructing a mental plan for performing a given task. According to the proposed model of comprehension, a set of directions will be easy or difficult to understand depending on how well the directions reflect the structure of the mental plan being constructed. I have focused here on one aspect of a plan's structure, the hierarchical arrangements of actions. Since plans are constructed from the top down, sentences will be easier to understand (i.e., read faster) when they begin with high-level information and continue with the lower-level information. This prediction was confirmed experimentally. It was also conjectured that high-level information may often be stated as explicit actions, while less important information would be conveyed more implicitly. Although an experimental test of this conjecture has not yet been performed, it does seem to make sense of a number of previous reading time results.

Even though most of the results and examples described so far have been limited to manipulations within sentences, I would anticipate that the same conclusions would also apply to larger sets of directions. For instance, in an experiment by Dixon and LeFevre (1984), an effect of high-level information was obtained with extended sets of directions for drawing pictures. Subjects were asked to follow a series of ten steps such as:

1. Draw a horizontal line across the page.
2. Draw a tall thin rectangle just above it on the left-hand side of the page.

When the steps were followed correctly, a picture such as a city scene or a landscape would be drawn. In one condition subjects were told the nature of

the scene before they started (e.g., "This is a landscape"). This information may have activated a schema which could be used to organize the subsequent steps. Thus, it may be similar to the high-level information used in Section 2. Compared to a second condition in which this information was not given, subjects read and carried out the directions faster and with fewer errors when they knew what was being drawn. The results suggest that at least under some circumstances the effects described in the present paper may also occur with directions larger than single sentences.

The model proposed here is related to the linguistic hypothesis that discourse contains multiple levels of information. To begin with, the distinction made here between high-level and lower-level information is similar to the distinction between backbone and background information made by Longacre (1979), and the distinction between foreground and background made by Hopper (1979). The present analysis leaves open the possibility that there could in principle be more than just two levels (cf. Jones & Jones, 1979). The number of levels in procedural directions may be constrained only by the complexity of the mental plan representation.

Secondly, the notion that high-level information is conveyed by explicit actions is consistent with the finding that foreground clauses are more active than background clauses (e.g., Hopper & Thompson, 1980). However, in the present view of directions, the structure of a plan is constrained in part by the task being performed. Thus, the level of a piece of information in a mental plan may also be a function of how it is used in performing the task, not only how it is stated in the directions. Consequently, it would still be possible for an item of low importance to be stated as an action.

In summary, the present paper provides some evidence that mental plans are organized hierarchically and that directions are read more quickly when they take that organization into account. Although I have not attempted to analyze the structure of directions generally, the results do suggest that directions that are clear and easy to understand will often begin with high-level information in the form of an explicit action.

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DISCOURSE FUNCTIONS OF WORD ORDER IN SESOTHO ACQUISITION¹

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1. Introduction

Word order has been a topic of great interest since the onset of systematic language acquisition studies (Slobin 1966, Bloom 1970, Bowerman 1973, Brown 1973). Such study, it was thought, might provide evidence for competing theories of what is innate and what is learned in the process of language acquisition. Additional research has examined later points in discourse development where children use three or more constituents in an utterance, with potential for the use of several different word orders. When data concerning children's word order is compared in different languages, the story becomes more complex. It appears that most children tend to use a fairly fixed word order in initial word combinations (English - Maratsos & Chalkley 1980, Turkish - Slobin 1982, Mandarin - Erbaugh 1982), even in languages that have case marking and allow great flexibility in word order (Russian - Slobin 1966) and even in cases where adult input contains varied word order. In Finnish (Bowerman 1973), however, one child followed adult variable word order at a very early stage. Further investigation has revealed a tendency to delete subject and/or order constituents in a new-old information sequence (Italian - Fava & Tirondola 1977, Dutch - Snow 1978). Such data suggests a 'functional' approach to language (Bates & McWhinney 1979), where the child assumes the hearer is privy to the same background information with which he or she is operating. It is only later, with increased discourse sensitivity and awareness, that children begin to provide the hearer with the background information necessary for the effective development of a discourse topic.

It appears that several variables are involved in what word order a child may use in a given language. Some languages have more fixed word order

(English, Chinese), while others are extremely flexible (Cayuga, Walpiri). Some languages rely mainly on word order to indicate grammatical relations and shifts of focus (English). Others rely primarily on inflection (Russian), while still others rely on both (Serbo-Croatian). It appears that mixed systems (i.e. Serbo-Croatian), where both word order and inflections are involved in constructing discourse, are harder to master than systems which use only either word order or inflectional strategies. There may, of course, be individual variation between children which would make the pattern of one system more accessible than another.

This chapter examines acquisition data from Sesotho,² an SVO Bantu language with inflected subject-verb and noun-complement agreement, where alternative word orders are used for different discourse functions. Sesotho speaking children initially use SVO word order. Then, at about 2½ years, they begin to use some different word orders. In this chapter we will discuss the functions of these word orders in spontaneous child speech, with special attention given to the linguistic and discourse environments where children make maximum use of the word order possibilities in this language. We conclude with some hypotheses concerning the nature of cognitive processes involved in learning to manipulate word order.

2. Discourse Context and Word Order Strategies

Many linguists have noted the large number of possible word orders used in Bantu languages (Aghem-Watters 1979, Makua-Stucky 1985), Chichewa - Bresnan and Mchombo 1986). The discourse functions of some of these constructions have been described for the related Bantu language Haya (Tenenbaum 1977, Byarushayo & Tenenbaum 1978). These constructions and their uses correspond closely to those of Sesotho.³ As in Haya we find word order shifts used mainly to clarify a misunderstanding or a misreading of what was intended.⁴ Adult-child interaction is frequently beset with 'communicative breakdowns' and is therefore precisely the kind of context in which we would expect maximum manipulation of word order to occur. We predictably find that Basotho adults use a great number of word order shifts when speaking to young children (aged 2-3). Basotho adults and caregivers talk animatedly with children even before youngsters can verbalize (Demuth 1983). Once they begin to talk, children are prompted to answer questions and assume an active role in conversation. In trying to make themselves understood, Basotho caregivers use the wide repertoire of Sesotho grammatical forms available for discourse strategies.

Children, on the other hand, have much of the burden of communication lifted from them when they are communicating with such accommodating adults.⁵ In fact, few of the word order shifts we find used by children occur during interactions with adults. Instead, we find that the more challenging communicative contexts for the child are those involving interactions with sibling or peers, where the hearer is less linguistically accomodating than the adult. It is in daily play situations that we find most of the young child's (and even 5-6 year olds') use of word order shifts, and it is these context which we examine in this chapter.

In the following sections we discuss the most relevant word orders in Sesotho, and then proceed to consider how adults use these constructions when speaking to children. Finally, we examine children's developmental changes in word order manipulation as a discourse strategy, from about 2 until 6 years of age.

3. Word Order in Sesotho

Basic Sesotho word order is SVO, with object pronoun cliticized before the verb, as seen in examples (1) and (2) below (sc = subject concord, foc = focus marker,⁶ obj = object pronoun). Each subject concord and object clitic agree in noun class gender with their co-referent noun. The *q* is the subject marker for humans, *ɛ* is the object clitic for nouns such as 'dog', etc.

- | | |
|--|---|
| (1) (<i>Thábo</i>) <i>q batla ntjá</i> | (2) (<i>Thábo</i>) <i>q-a ɛ-bátla</i> |
| sc V O | sc-foc ⁷ obj-V |
| (Thabo) he want dog | (Thabo) he it want |
| (Thabo) he wants a/the dog. | (Thabo) he wants it. |

Lexical objects are occasionally preposed, especially in case of a reintroduced or contrastive discourse topic.

- | |
|-------------------------------|
| (3) <i>ntjá q-a ɛ-bátla</i> |
| O sc-foc obj-V |
| dog he it want |
| The dog, he (Thabo) wants it. |

Preposed subjects are also used, again primarily as reintroduced contrastive topics of conversation.

- | |
|------------------------------|
| (4) <i>'ná kɛ batla ntjá</i> |
| pn sc V O |
| me I want dog |
| As for me, I want the/a dog. |

The use of postposed lexical object plus preverbal object clitic has been characterized in other languages as an afterthought. It is said to be used to clarify the object clitic when the speaker realizes that the referent is not in the 'active memory' (*Chafe, this volume*) of the hearer. It is also supposed to be used as an expression of surprise, doubt, emphasis or contrast, or to de-emphasise the assertion and emphasise the postposed element (Tenenbaum 1977). In Sesotho, however, postponed lexical objects are frequently used even in cases where the lexical object has just been specified (verbally or otherwise) and is apparent to both speaker and hearer. Postposed object constructions (realized nominally or by demonstrative pronouns) function in Sesotho primarily to emphasize or contrast the object or additionally to emphasize the verbal argument, the only 'new' information in the sentence.

- (5) *q-a g- bátla ntjá*
 sc-foc obj-V O
 he it want dog
 He (Thabo) wants it, the dog.

As with postposed objects, postposed subjects are also used to focus attention on the verbal assertion rather than on the already specified, emphatic or contrastive subject. These constructions are found in contexts where the subject referent has already been identified. Thus, in the following example, various aspects of *ntjá* 'dog' have already been mentioned.

- (6) *e-a tsamáea ntjá*
 sc-foc V S
 it leave dog
 It's leaving, the dog.

In each of these cases, the shifted lexical referent has been previously identified in the discourse. These constructions are not used to introduce a new referent, but may contrast a referent with others which are also active in the discourse context.

In addition to extraposition, clefts and passives also play a role in the pragmatics of Sesotho discourse and reference. Below we examine the use of these constructions in question formation.

The unmarked form of questions in Sesotho places the question word at the end of the sentence, as seen below:

- (7) *ntho éq ké êng? motho êq ké māng?*
 thing this cop what person that cop who
 This thing is what? That person is who?

Thábo q̄ káę?

T. he where

Thabo is where?

Questions are phrased in this manner when an already salient referent is being brought into the discourse for the first time, or when one referent is being contrasted with another. In addition to this unmarked question form, there is also a cleft question or 'preposed' form which is used only in cases where the referent has already been specified:

- (8) *ké éng nthɔ́ éq? kέ máng mqthq̄ éq?*
 cop what thing this cop who person this
 It's what, this thing? It's who, this person?
q̄ káę Thábo?
 he where T.
 He's where, Thabo?

These are the only two ways to form questions with copular constructions; there is no separate pseudo-cleft form.

It is frequently the case that unmarked and cleft questions will be used in sequence: the unmarked form is used first to establish the referent; after this both forms can be used interchangeably. Such sequences occur not only in repeated turns by the same speaker, but also in consecutive turns by different speakers, as seen in the following interaction between child and grandmother. Here the child uses the unmarked question form to verbally introduce the referent, while the grandmother uses the cleft question form once the discourse topic has been established.

- (9) Hlobohang (36 months) and grandmother MM are identifying items on a food chart.

- H *Nthóe kέ éng?*
 N-dem cop wh-
 thing-this is what
 This thing is what?
 MM *É, kέ éng eɔná nthɔ́ éq?*
 cop wh- pn N dem
 yes, it's what that-one thing that
 Yes, it's what, that thing?

Unmarked and cleft questions also occur with full verbal predicates, where they then use a relative construction. Here again, the unmarked form

is used with first mentions or reiterations of the referent, while the cleft form is used only once the referent has been specified.

- (10) éa q-f-ilé-n̩ ntjá k̩é māng?
 rel obj-v-prf-rel O cop wh-
 who you gave dog is who
 The one that gave you the dog is who?
- (11) k̩é māng éa q-f-ilé-n̩ ntjá?
 cop wh- rel obj-V-prf-rel O
 it's who who you gave dog
 It's who that gave you the dog?

Examples (7)-(11) illustrate the active forms of questions. Passive forms are used when the subject is questioned.

- (12) q f-il-ó-e ntjá k̩é māng?
 sc V-prf-pas O cop wh-
 you given dog by who
 You were given the dog by who?

In passive question forms, the direct object is frequently preposed, resulting in questions like that in (13) below - similar to the preposed object construction in (3) above.

- (13) ntjá q q-f-il-ó-e k̩é māng?
 O sc obj-V-prf-pas cop wh-
 dog you it were-given by who
 The dog, you were given it by who?

While permutations of word order between cleft and passive options⁸ are not frequently employed within the same speech event by children, they are often used by adults in their attempts to communicate effectively with young interlocutors. We now examine how adults manipulate these constructions to achieve effective communication with children.

4. Adult Uses of Word Order in Talking with Children

As might be expected, adults and caregivers possess a much larger repertoire of variations in word order than do children. Further, adults frequently use several different pragmatically motivated word orders within a single

communicative episode. Thus, we find complex word reordering such as that in (14) where there are shifts from passive to cleft constructions (a & b, c & d), a minor tense/aspect shift (a & b) a postposed subject (d), and final resorting to an unmarked question form (e). The great aunt here is persistent in trying to extract an answer from her grandniece:

- (14) Great aunt J is engaging grandniece 'Neuoe (30 months) in conversation, pressing her for information concerning which child (affectionately called 'grandmother' here) hit 'Neuoe.
- a. *Q 'la shátj-ó-a ké māng?*
sc pst V-pas cop wh-
You were lashed by who?
 - b. *Ké māng a n'a q shápa? (2x)*
cop wh- rel pst-cont sc V
is who who were you lash
It's who that was lashing you?
(Another child tries to prompt N in between J's repetitions)
(N tries to respond)
 - c. *Q n'q shátj-ó-a ké nkhónq māng?*
sc pst-cont V-pas cop N wh-
you were lash by grandmother who?
You were being lashed by which old lady?
 - d. *Ké māng a n'a q-shápa nkhónq?*
cop wh- rel pst-cont obj-V N
is who who you lash grandmother
It's who that was lashing you, the old lady?
(N tries to respond)
 - e. *É? Nkhónq a n'a q-shápá ké māng? É?*
wh S rel pst-cont obj-V cop wh- wh
uh grandmother who you lassis who uh
Uh? The old lady that was lashing you is who? Uh?
(N finally answers)

Notice here again the ordering of 'unmarked' passive before the more emphatic cleft. The introduction and postponing of *nkhono* 'grandmother' lends further emphasis to the agent of the action. This shifting back and forth from one construction to another reflects an apparent attempt on the part of the adult to help the child understand the question and produce the desired response.

during interaction with young children. A possible interpretation for the use of these constructions is that they represent efforts to help direct the child's attention to what the speaker considers to be salient in the discourse.

5. Children's Use of Word Order

The data on rural Basotho children's speech is selected from 93 hours of spontaneous verbal interaction between 4 children, their peers, siblings and older family members. Each of the children was audio recorded every 5-8 weeks over a period of 12-14 months. The youngest child was 25 months at the initiation of the study, while the older siblings were 5-6 years old. As noted above, Basotho adults initiate verbal interaction with young children with great enthusiasm. They introduce the majority of discourse topics and are largely responsible for topic continuity and topic shift. It is only after the age of 2½ or so, when young children start to spend more time with their peers, that they begin to initiate topics of conversation, introduce contrastive topics and maintain discourse topics which have already been initiated. It is precisely at this time that Basotho children begin to manipulate word order. Here we examine the conversational strategies used by children of two years of age and trace that development until the age of 6.

Young children do not control all the word order possibilities discussed above. Instead, two year old children use the alternative strategies of repetition, gesture and prosodic intensity to make themselves understood. Example (15) below illustrates a case where a young child is interacting with a 'less than competent speaker'. He uses the same construction repeatedly, resorting to the use of prosodic intensity when communication fails.

- (15) Hlobohang (27.3 months) has just pointed to the tape recorder, asking researcher K whose it is. He then tries unsuccessfully to ask who bought the tape recorder for her.

H a rekélá é māng?
 (q ɛ-rek-éts-o-ɛ kɛ māng)
 you it-buy- cop who
 ben/prf/pas

You were bought it by who?

(K doesn't understand)

K \hat{M} .

Yes.

H *a rekélá é māng?*
 (q ɛ-rek-éts-ó-ɛ kék māng)
 you it buy- cop who
 ben/prf/pas

You were bought it by who?

K *Ké éa-ka.*
 cop my
 It's mine.

(H is indignant - his question is not being answered)

H *a rekélá lé māng?!*
 (q ɛ-rek-éts-ó-ɛ kék māng)
 you it-buy- cop who
 ben/prf/pas

You were bought it by who?!

Note here that the construction used is the passive, and that there is no attempt, when communication fails, to switch to the (grammatically more complex?) cleft form *kék māng ea o rekétséng eona?* 'It's who that bought it for you?' Such a shift might have helped the hearer clarify what the child intended. At this early age Hlobohang apparently does not possess the linguistic knowledge or discourse skills necessary to switch from passive to cleft and vice versa. The use of cleft constructions becomes quite noticeable only a few months later, about 2½ years of age.

Manipulation of unmarked and cleft questions, however, is already productive by the age of 25 months, as seen in the following example:

- (16) Hlobohang (25 months) and Mololo (4.5 yrs) are playing with tin can 'cars'.
- É káké é'ngoq?*
 sc wh- S
 It's where, another one?
 - É'ngóq q káké?*
 S sc wh-
 Another on is where?
 - É kaqé é'ngoq éla?*
 sc wh- S dem
 It's where, that other one?

In this interaction Hlobohang is trying to elicit a response on the part of the

hearer. The first question (a) takes the form of a cleft. In adult speech we would expect an unmarked question to be used upon first mention, so that the referent could be specified. Here the child apparently assumes that the referent is known to the hearer and he uses the cleft form. This is consistent with observations that Dutch and Italian children (Snow 1972, Fava & Tirondola 1977) initially tend to order new information first, assuming the hearer is privy to the background upon which the utterance is based. In (b) the child switches to the unmarked question form. After no response from the hearer again, he shifts back to the cleft form in (c), providing further specification of referent with the addition of a demonstrative pronoun. Although the child makes an unwarranted assumption here about the recoverability of the referent, he is able to manipulate cleft and unmarked question forms from a very early age.

While children do use occasional cleft constructions with full predicates by 2 years of age, there is a dramatic increase in the use of this construction at 30 months (Demuth 1983). The function of clefts at this time was to clarify misunderstandings, but also to specify *who* or *what* was responsible for a particular action or state of affairs. Concurrently we find that postposed subject constructions begin to be produced with extreme frequency. As discussed above, these postposed constructions are not the result of an afterthought or clarification (as proposed for adult speech in other Bantu languages), or even for emphasis or contrast (as in adult Sesotho). Rather they are used to focus on the assertion or activity of the referent which has already been specified. Postposed subjects are very commonly used at 2½ years of age in contexts such as the following:

- (17) Mololo (5 yrs) and Hlobohang (30 months) are playing cars.

- a. Mol *Éré kę bonę koloi*.
hort sc V O
Let me see the car.
- b. H *Ę-a tsamáea koloi éa:-ka*.
sc-foc V S pos
it go car my
It's going, my car.
- c. *Ę phethq-ilé lękhalé-ng koloi éa-ka*
sc V-prf N-loc S pos
it turned-over aloe-at car my
It turned over at the aloe, my car.

In (a) the first speaker specifies the referent. In (b) and (c) the second speaker elaborates on the *action* in which the referent is involved. Postposed subject constructions of this kind present new verbal information first, again preserving new-given order of presentation frequently found with young children.

Postposed subjects are commonly used at 2½ years. At this time, postposed *objects* start to be produced. Between 3 and 4 years postposed objects are frequently used, then taper off to more adult-like usage in particular contexts. Once again, postposed objects have been already introduced into the discourse and are used either for emphasis, or to illuminate the action to which the object is subjected.⁹

- (18) Mololo (5-6 years) tells grandmother that Hlobobhang (36 months) has his (Mololo's) book. Grandmother says she will give Mololo 'her' book, which is actually Hlobolang's. Hlobolang then complains whinily to Grandmother in turns (a) + (b) and tells Mololo to take back his book in turn (c)
- Tliá buka ena éaka.*
V O dem poss
bring book that my
Bring (me) that/my book.
 - 'Ná ke-a e-batla buka éa:ka*
pn sc-foc obj-V O poss
me I it-want book my
As for me, I want it, my book.
 - É-nke, ha ké é-tsotélle buka émpe.*
obj-V neg sc obj-V O adj
it-take neg I it-care book ugly
Take it, I don't care about it, the ugly book.

Turn (a) introduces the *book* in object position. In utterances (b) + (c) the lexical form of *book* is postposed, while in the main clause it takes the form of an object clitic. As with postposed subjects, we find postposed objects in contexts where the lexical form has already been introduced in immediately previous discourse and is postposed in subsequent utterances to give it emphasis. Such constructions became increasingly frequent about 3 years of age.

Notice here also the preposing of the independent subject pronoun '*na*' in (b), used for contrastive emphasis (Kunene 1975). Preposing of this independent pronoun is extremely common and occurs frequently as the sole

subject 'marker', with no subject concord marker (usually before the age of three, but occasionally even with 5 and 6 year olds). A complete analysis of the functions of '*na*' and other preposed subjects in children's speech is the topic for another paper (see Demuth, in preparation).

Preposed objects, however, were not generally used by very young children. They become productive around the age of 3, but only frequently used by 5 or 6 year olds. This construction, variously referred to as fronted, topicalized or left dislocated, is also acquired relatively late in other languages (English (Gruber 1967), Mandarin Chinese (Erbaugh 1982)). Preposed objects emphasize a reintroduced or contrastive topic, as seen in example (19) below. Here the older child uses a preposed object (a), no lexical object in (b) and a postposed object in (c):

- (19) Mololo (4.6 yrs) has been talking to himself while playing with a flashlight (*torch*), turning it off and on while Hlobohang (26.2 months) is roasting potatoes in the ashes from the fire. Mololo tells Hlobohang:

- a. *Tʒ:ch ea-haɸ kɛ ɛ tímme,*
o pos sc obj V-prf
flashlight your I it turned-off
Your flashlight, I'm turning it off.
- b. *Kɛ ɛ tímme hóre,*
sc obj V-prf interj
I it turned-off like-this
I turned it off like this.
- c. *Kɛ ɛ tímme tʒ:ch*
sc obj V-prf O
I it turned-off flashlight
I turned it off, the flashlight.

Note again the particular progression in use of constructions. The referent is initially preposed in an effort to draw the hearer's attention to the 'reintroduced' discourse topic, in part, perhaps, to contrast the *torch* with the *potatoes* which Hlobohang has been playing with. In so doing, it is the discourse referent which is ordered first. Once the referent has been established, it is repeated in the form of an object clitic. When it is lexicalized again in (c), it is postposed with the propositional emphasis on the verb. This sequence of word orders seems once again to support the new-given ordering pattern across turns of a discourse unit. By the age of 3, children begin to use post-

posed object constructions with increased frequency. Preposed objects, however, become more frequently used only by 5-6 year olds and are used quite often by adults.

6. Discussion

In sum, there is a specific developmental trend in the learning of different word orders in Sesotho. Initially, SVO word order is used. Before two years of age gesture, repetition and prosodic intensity serve discourse functions later accomplished by the manipulation of word order. Around 2 years copular questions in unmarked and cleft form are used in sequence, with the cleft often preceding the unmarked adult-introductory form. By 2½ years postposed subjects are very commonly used once the discourse referent has already been specified. Clefts become productive at this age, emphasizing or contrasting the referent. By 3 years the use of postposed subjects has diminished, while postposed objects become much more frequent. Preposed objects are rare at 3 years while 5 and 6 year old children and adults in speech to children use them frequently. After an experimental stage with each of these constructions children seem to store them away for future use when discourse situations require them. Such use, analysis and 'retention' of grammatical form, has been contrasted (Keenan & Schieffelin 1976a, b) with other language learning that children experience, where overgeneralized forms, as with irregular plurals or verbal paradigms, are eventually discarded. In the case of Sesotho word order the child retains each new construction, gradually compiling a set of grammatical devices to be used when required by the discourse situation.

Data from this study indicate a predisposition for presentation of new propositions before old information during the period between 2-3½ years. Thus, subjects and objects are postposed once they have been introduced in lexical form. Verbal information is then presented first. This is consistent with findings from Dutch and Italian youngsters (Snow 1972, Fava & Tirondola 1977). It also appears that certain forms, such as postposed objects or subjects, do not function primarily as afterthoughts or as clarification devices for children, but rather as grammaticized ways of encoding discourse information. Adults rarely make use of these word orders, except in cases of contrast or clarification. One of the productive environments for the use of these constructions is adult-child interaction. Thus, we see a much larger proportion of word order shifts in adult-child discourse than adult-adult conversations. Children likewise use alternative word orders more often when speak-

ing to other children and talking to themselves than they do in talking with adults.

The following table graphically illustrates the incremental progression by which Sesotho speaking children acquire a working facility with distinct word orders. Notice how the onset of usage of a given construction is gradual, as indicated by the dotted line. There is a marked increase in the use of the construction at the beginning of the solid line. The solid line indicates continued frequent usage of the form, while a return to the dotted line indicates a relaxation in usage to those discourse contexts in which adults would also be expected to use the construction.

Constructions

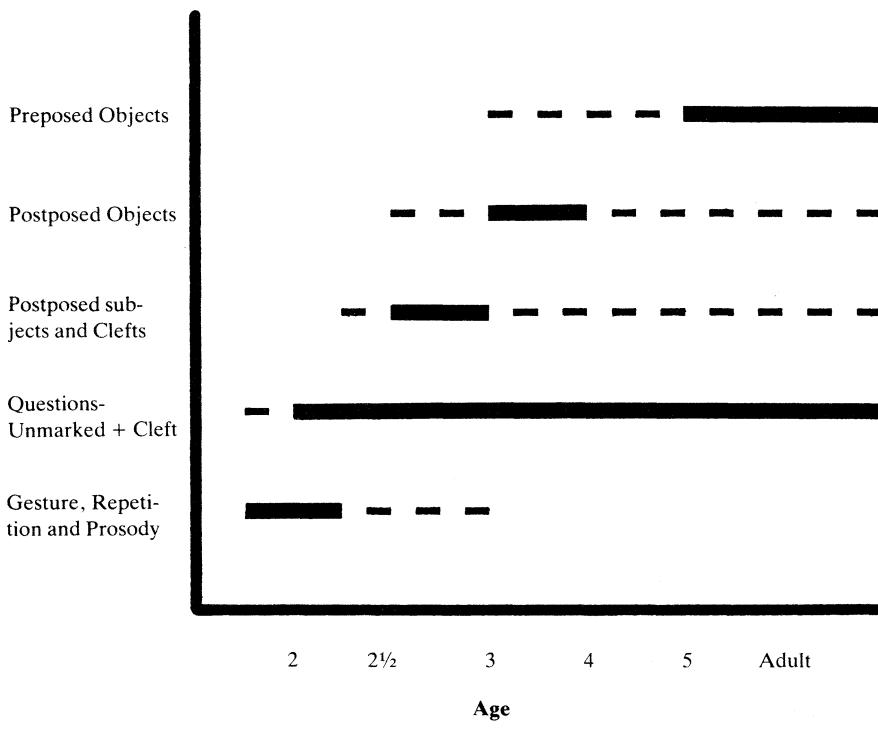


TABLE 1

It is important to note that Basotho children, along with children from other language studies, never order words in an ungrammatical way, even at initial stages of development. Why this should be, in a language which has the

potential for several different word orders, and in which adults use these orders freely in speech to children, is cause for speculation. The fact that children appear to 'experiment' with different constructions at various stages in their development may provide additional evidence for positing some kind of canonical shape (Slobin 1982, Slobin & Bever 1983) or template construct (Erbaugh 1982, Demuth, Faraclas & Marchese 1986) which helps the child organize language. There is a tendency for children across languages to use some sort of basic word order initially. Once that shape has been firmly established, a child then experiments with another. Only after that option has been thoroughly explored does a child incorporate yet another canonical/template form, and so forth. Language acquisition evidence from an extremely free word order language such as Cayuga (Mithun, *this volume*), or Walpiri (Bavin 1985), might provide us with evidence of variation in strategies children employ in learning such languages.

NOTES

1) Data collection for this paper was supported by Fulbright-Hays and Social Science Research Council doctoral dissertation grants. This manuscript was prepared while supported by NICHD Training Grant #5732 HD07181 administered by the University of California at Berkeley. Acknowledgements go to Knud Lambrecht, Mark Johnson and Russel Tomlin for comments, while I take full responsibility for the material presented here.

2) *Sesotho* is a southern Bantu language spoken by the *Basotho* people in the countries of *Lesotho* and South Africa.

3) See Demuth & Johnson 1986 for thorough discussion of the discourse and grammatical functions of word order in Sesotho and Setswana.

4) This contrasts with Spoken French (Lambrecht, *this volume*), where certain postposed constructions are actually the unmarked case.

5) This expectation might not be upheld in societies such as Samoa (Ochs 1982), Kaluli (Schieffelin 1979) or Maya Quiche (Pye 1980) where adults are minimally 'accommodating' (Ochs & Schieffelin 1983) in their physical and verbal interactions with children.

6) Many Bantu languages have a 'focus' marker (Givón, 1975) which is generally suffixed to the subject-verb agreement marker (subject concord). Languages differ in the extent to which this marker is grammaticized. The function of this particle in Sesotho is completely grammaticized, providing focus only a verb (i.e. in verb final constructions such as intransitives or transitives with preverbal pronominal object clitic. Focusing and topicalizing other grammatical constituents in Sesotho are primarily achieved through the reordering of words.

7) The focus marker *-a* in Sesotho is restricted to verb final indicative constructions like that in example 2. (with some temporal adverbs permitted postnominally) and negative perfective constructions: ha kę-a pheha lijɔ - neg sc-foc cook food 'I didn't cook (the/any) food'.

8) For more detail on passive constructions see Demuth (1985).

9) As noted in examples (3) and (4), and seen once again here in examples (18) and (19), extraposed objects require the use of the preverbal object clitic. Preverbal information (subject concord, focus marker, tense/aspect, object clitic) becomes progressively more phonologically differentiated between ages 2 and 3, but it is especially from 2½ years onwards that object clitics become more distinct. It is possible that this process might be a 'prerequisite' for being able to extrapose objects - an additional factor to be considered in the explanation for why these two constructions became most productive only after extraposition of subjects.

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A UNIFORM PAUSE AND ERROR STRATEGY FOR NATIVE AND NON-NATIVE SPEAKERS

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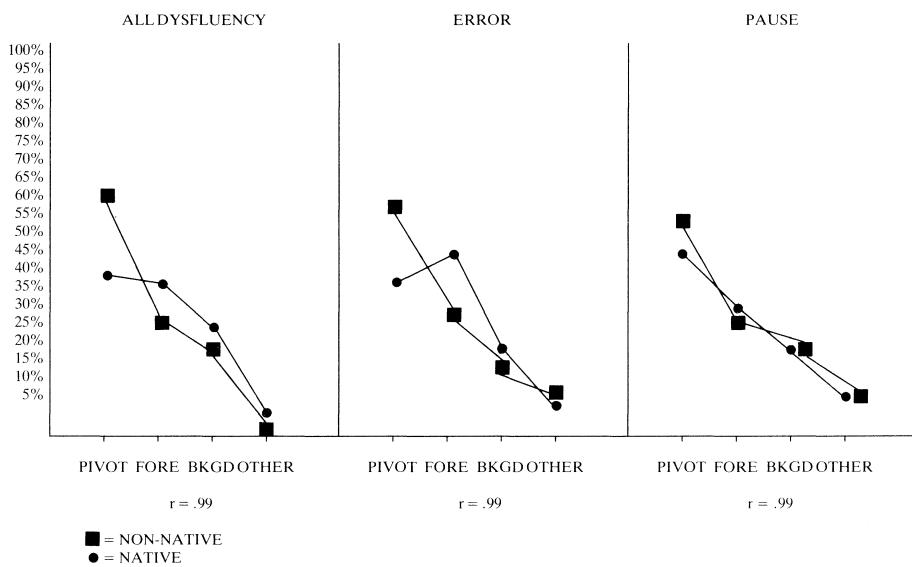
1. Overview of the Foregrounding Hierarchy

Both native and non-native speakers of English pause and err at the same places in their oral descriptions. The relative importance of the event being described is critical in prompting speakers to pause, err, or correct themselves, while language background has astonishingly little influence. Although non-native speakers pause more and make more errors, both natives and non-natives have the most difficulty at precisely the same points in their descriptions of an animated cartoon. These pivotal points were the most important events in the story, which would not make sense without them. Regardless of language background, all speakers mentioned the same core set of events.¹

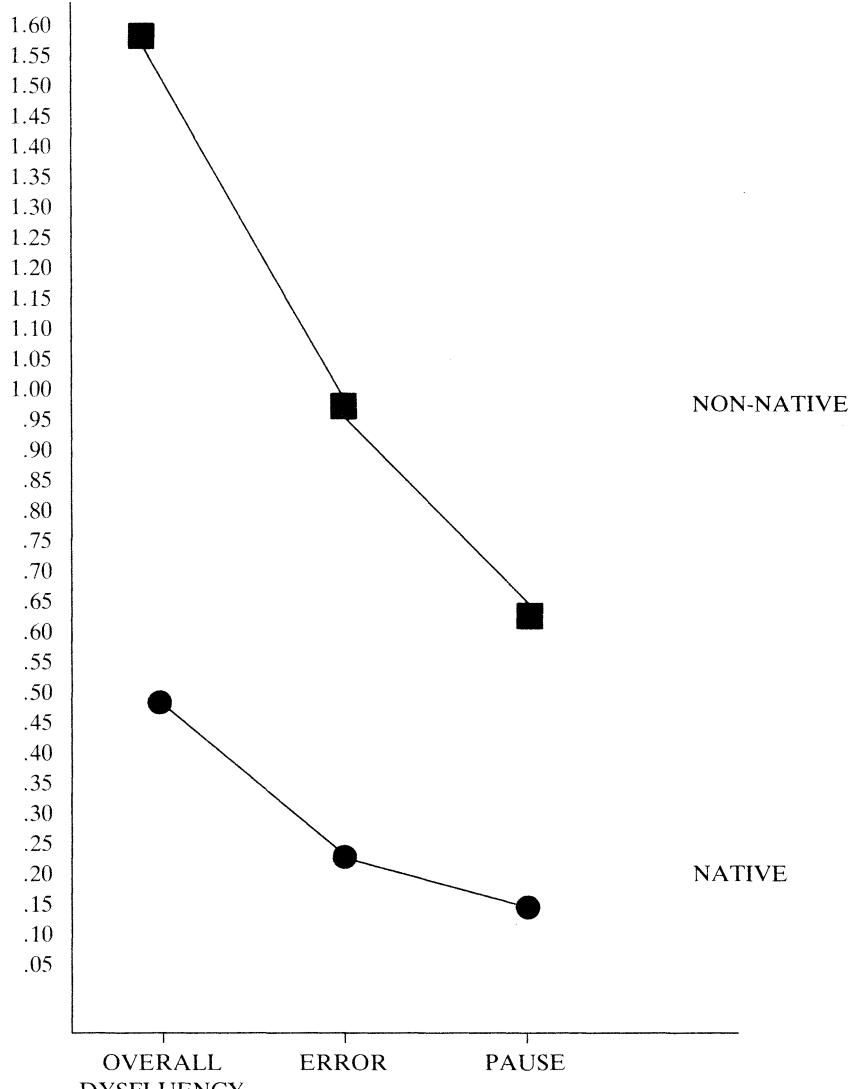
Paradoxically, the pivotal events were also the most difficult for people to describe fluently. More peripheral, backgrounded events, and editorial comments which were outside the plot line, were described more fluently. This indicates that all speakers share a common, cognitively-based strategy for choosing which actions in an ongoing scene are most worthy of mention. In this study, thirty native and non-native speakers described a simple cartoon of a crab chasing a goldfish. All human beings perceive such prototypical events in a similar way. Naturally, more deliberate or artistic speech is often available to embellish the basic descriptions.

Framing a description of the pivotal events in a narrative requires the greatest amount of planning and effort. The difficulty in overall planning depletes the reservoir of energy available for fluent speech, so descriptions of pivotal event are relatively error-prone. All speakers share a common monitor which rations their linguistic energy; they only add background and editorial comments if they have an energy surplus. If they do, then their

GRAPH 1
DYSFLUENCY RATES FOR PIVOT, FOREGROUND, BACKGROUND, AND OTHER
(as a percentage of all dysfluencies, all errors, and all pauses)



GRAPH 2
TYPES OF DYSFLUENCY
(In number of dysfluencies per proposition)



$r = .98$

background and editorial comments will generally be fluent, and remarkably free of pauses and errors.

Regardless of language background, all speakers allocate their scarce linguistic planning, production, and monitoring energy according to a common, cognitively-based Foregrounding Hierarchy:

PIVOT>FOREGROUND>BACKGROUND>OTHER

As Graph 1 shows, both pause and error patterns are almost identical for native and non-native speakers, ($r = .99$). The Foregrounding Hierarchy overrides language background.

Both natives and non-natives were far more likely to pause for more planning time than to err, as Graph 2 demonstrates. While non-natives had three times as many dysfluencies as natives, both groups shared the same 3:2 ratio of pauses over errors. Natives and non-natives not only share the same preference for pausing rather than committing an error, they share the same cognitively-based set-point for determining when to pause longer or more often rather than commit an error.

Language repair is also rationed to the Foregrounding Hierarchy. Pivotal information is the most important, the most error-prone, and also the most likely to be corrected. Foregrounded information is less likely to be repaired, and background information the most unlikely.

If the Foregrounding Hierarchy had no psychological reality, we would see error and pause rates scattered uniformly or randomly across all types of propositions, possibly according to individual speaker style. In fact, the Foregrounding Hierarchy predicts dysfluency at highly significant levels, while the patterns for native and non-native speakers are almost perfectly correlated, (typically $r = .99$).

This result is surprising since a syntactically-based argument would predict that foregrounded propositions should be easy and backgrounded ones hard because: 1. Foregrounded information typically appears in declarative main clauses. These use the most common, regular, verb paradigms. Word order is also highly regular and predictable. Production should be highly automated, well-practiced, and error-free. 2. Backgrounded information, on the other hand, tends to appear in embedded or relative clauses. Word order and verb forms are often archaic or exceptional. These clauses must be coordinated with a main clause which must be maintained in short-term memory for matching. Production should be much less automatic, and therefore more error-prone.

An extensive series of experiments unsuccessfully attempted to measure psycholinguistic difficulty by counting the number of grammatical transformations required to produce sentences which deviate from a simple subject-predicate core.² According to this model, backgrounded information, which typically appears in relative clauses, should be less fluent than the simpler main clauses. In fact, the opposite is true for speech production, and likely for speech comprehension as well.

This is because in a natural setting, people are able to avoid complex syntactic and rhetorical forms by shifting down from a tightly-structured syntactic mode to the more simply structured pragmatic mode described by Givón (1979). They can simplify still more to a pidgin or telegraphic speech if their hearer needs extra simplification (as when talking to foreigners or small children), or when the speaker is fatigued, under stress, or speaking a foreign language. People often stumble, pause, change their minds, and misuse words as they struggle with scripting the central characters in the everyday dramas they describe. But once the main cast has its movements blocked out, scripting the rest only elaborates a firm, clear, story line. The dramatist only orders up extra characters, costumes, props, and settings if he or she can afford to do so. Mature speakers are so prudent in their budget assessments that they rarely overspend their linguistic capital. They typically remain intelligible to the end, even when they are speaking a foreign language under highly pressured conditions.

2. Methods

I analyzed the thirty oral, online descriptions of an animated cartoon which Russell Tomlin collected from native and non-native speakers of English.³ Thirty students watched a 108 second videotaped segment from an animated cartoon which had music but no narration. The cartoon shows a goldfish trying to escape capture by a crab and other fish. The subjects were encouraged to describe the cartoon in as much detail as they could while they were watching the TV screen. All the students were enrolled at the University of Oregon. The fifteen native speakers were all between eighteen and forty years old. The fifteen non-natives had all scored above 500 points on the Test of English as a Foreign Language; all had been in the U.S. for at least two years. Their native languages included Korean, Arabic, Japanese, Mandarin and Spanish.

Tomlin transcribed the audiotaped narratives, including all false starts, errors, and repairs, as well as all pauses. Pause times of one second or longer

are measured and included. Tomlin segmented the utterances into propositions. Propositions are defined as semantic units consisting of a predicate and arguments about which a truth value can be obtained. These include full clauses, as well as partial clauses for which missing arguments are readily recoverable. Infinitive clauses, participial clauses, and nominalizations did not count as propositions. Defined this way, propositions are a basic unit of memory in human cognition, discourse production, and comprehension.⁴ Chafe (this volume) suggests that intonation units which contain a single proposition are the fundamental unit for language production, and that sentences are a secondary, rhetorical development.

Tomlin coded all propositions into the following foregrounding categories:

PIVOTAL INFORMATION	the most important events in the narrative; the most general description of a significant event.
FOREGROUNDED	propositions which describe successive events in narrative.
BACKGROUNDED	propositions which elaborate pivotal or foregrounded events. Includes motives, and some locations.
OTHER	propositions outside the narrative sequence, including editorial or evaluative comments.

SAMPLE CODINGS FOR A NATIVE SPEAKER

The goldfish goes into some coral, no sponge, PIVOT
 and the shark follows him, FOREGROUND
 can't find him/ FOREGROUND
 skulking around in the sponge, BACKGROUND
 trying to find him BACKGROUND
 Lot of action here. OTHER
 Can't quite keep up with this. OTHER

Tomlin also elicited delayed oral and written descriptions. I analyzed the online set because of the greater likelihood of error and pause.⁵ However, both the online and delayed narratives show the same pattern of putting the pivotal propositions first in the sentence, with background and other information following it. Tomlin found no major difference in the narratives if the subjects watched the whole cartoon; both plot and musical cues seemed neg-

ligible for this film. Tomlin also found no differences if speakers faced an interviewer rather than a tape recorder as they described the film.^{6,7}

I define dysfluencies to include both pauses and speech errors. I coded Tomlin's transcripts in order to calculate dysfluencies per proposition for the following dysfluency types:

PAUSE TYPES: 1. *Filled*: e.g. "um" "ah". 2. *Empty*: momentary, or timed if longer than one second.

ERROR TYPES 1. REPAIR: a. *Repeats* of a phoneme, syllable, full word, or phrase. b. *Changes* of a phoneme, word or phrase. 2. OMISSION: of an obligatory grammatical morpheme or word. 3. MISUSE: a. *Word Choice* e.g. "golden fish" for "goldfish." b. *Grammar* includes errors in agreement, plural, tense, time aspect, determiner, prepositions, and word order.

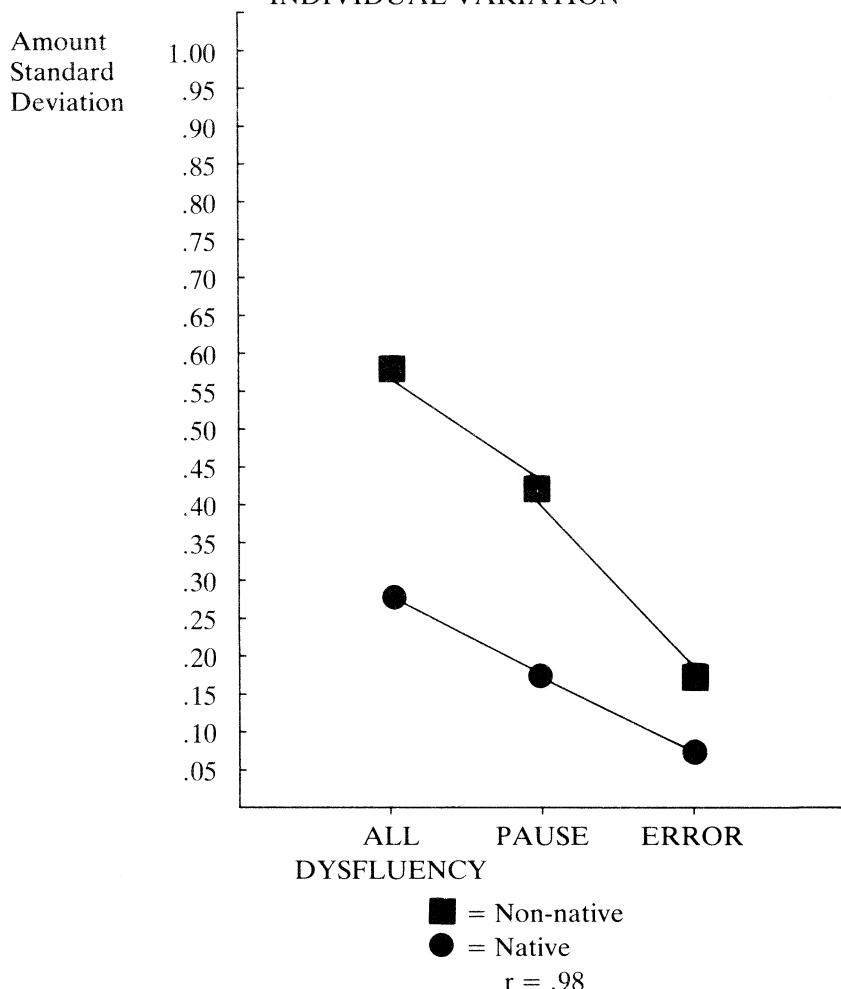
3. Pauses

3.1. Overall Pause Pattern

Natives and non-natives maintained the same 3:2 ratio of pauses to errors, as Graph 2 shows. Clearly both natives and non-natives prefer pause to error; both pause longer if they are unsure of either their analysis of the situation or its linguistic packaging. However, the non-natives showed much more individual variation in both pause rate and error rate than the native speakers did, as Graph 3 shows. Although all the non-natives were fluent speakers, their language skills still varied considerably.

Many more pauses occurred at major event boundaries in the story, before pivot propositions, and before main clauses than elsewhere.⁸ Clearly, speakers can control how much they pause, since the speed of speech is determined by the amount of pause rather than the rapidity with which individual segments are pronounced.⁹ Pause is a reliable measure of the difficulty of analyzing and verbalizing events. The hardest events to describe are the ones which are both most important and least expected, the ones that literally "give one pause." Goldman-Eisler found speakers paused much more when they were asked to supply an interpretation of a *New Yorker* cartoon than when they were simply asked to describe it.¹⁰ Pause rates also vary because of the highly diversified functions which both filled and empty pause can carry perform.

GRAPH 3
INDIVIDUAL VARIATION



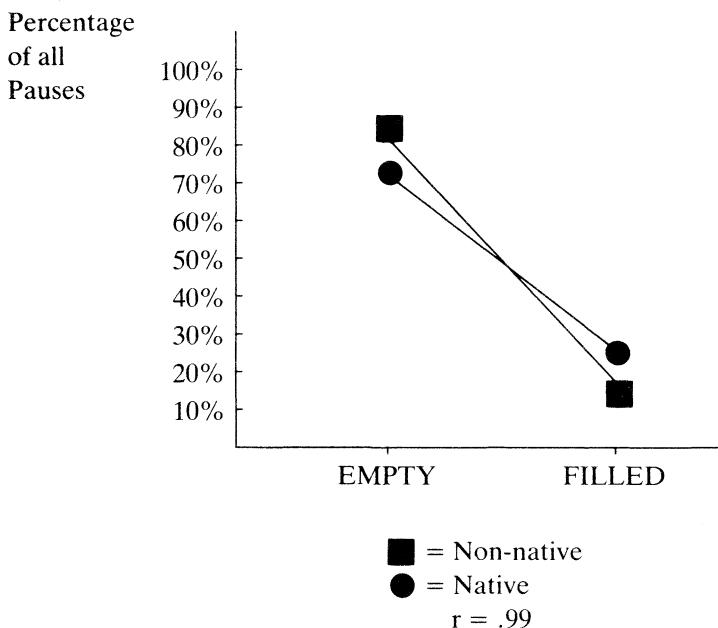
3.2. Empty Pauses

The most obvious function for empty pauses is dramatic emphasis. Empty pauses punctuate several different rhetorical styles, including reprimands, storytelling, and political speeches, in French, English, and German, as well as in other languages.¹¹ While the pressure of online description crowded out most stylistic flourishes in the cartoon descriptions, a few native

speakers did add fillips of storytelling style such as, "our hero," or "little does he know that...." which contrasted with their more usual event-by-event inventories. Although it is possible that non-natives who were skilled in a native-language storytelling style would be able to transfer this into their online descriptions in a second language, I did not find any such stylistic variations in the non-native descriptions.

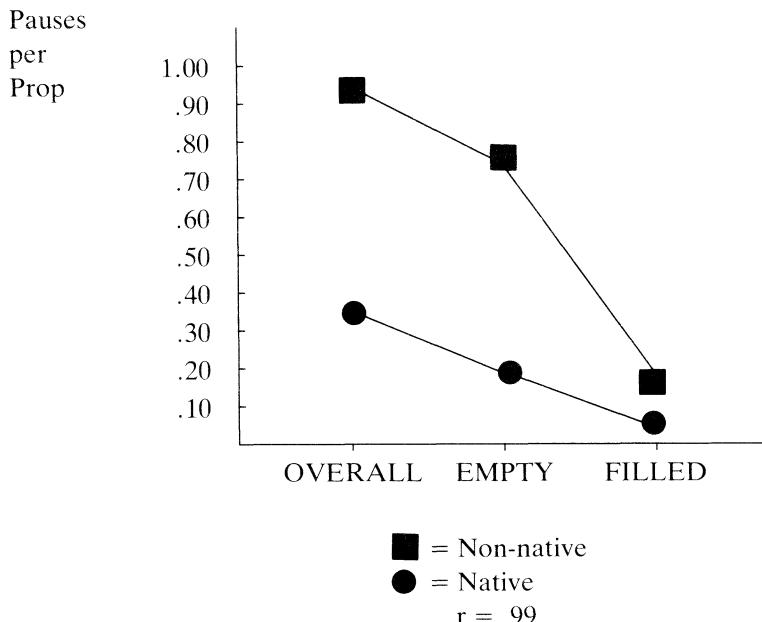
Empty pauses also serve the much more basic purpose of giving the speaker additional planning time. In this sample empty pauses indicate additional planning effort rather than stylistic control. Both natives and non-natives found the cartoon equally easy to understand, since they both described exactly the same core set of events.¹² Both natives and non-natives followed the same strategy of pausing silently nearly three times as often as they used filled pauses, as Graph 4 shows. Both groups were particularly likely to pause silently during rapid, confusing, transitional segments of the cartoon, such as during a whirling, circular chase scene.

GRAPH 4
RATIO OF EMPTY TO FILLED PAUSES



However the non-natives still paused three times as often as the natives did, as Graph 5 shows.

GRAPH 5
PAUSES PER PROPOSITION

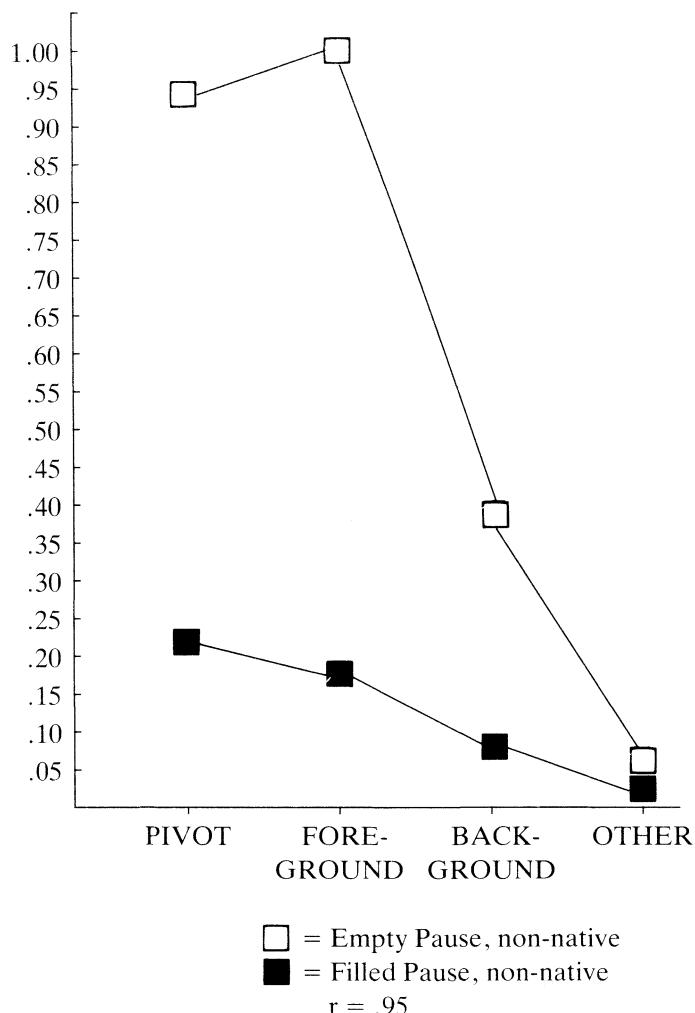


Both natives and non-natives paused far more often in pivot and foregrounded propositions, as shown in Graphs 6a and 6b. In pivot and foregrounded clauses, non-natives paused silently once during every proposition, while even natives paused during one out of three pivots. The empty pause rate drops off precipitously for backgrounded and other propositions. The non-native pause rates drop much more sharply because they are much less likely than natives to elaborate if they cannot do so fluently.

Both natives and non-natives followed the initial pause pattern described by Chafe (this volume). In initial pauses, the speaker pauses for planning before the beginning of new proposition, particularly if it introduces a new topic or event. In this study, 27% of the native speakers' pauses were initial pauses, while 43% of the non-native pauses were initial, which indicates the non-natives' need for more linguistic planning time.¹³ However, the initial

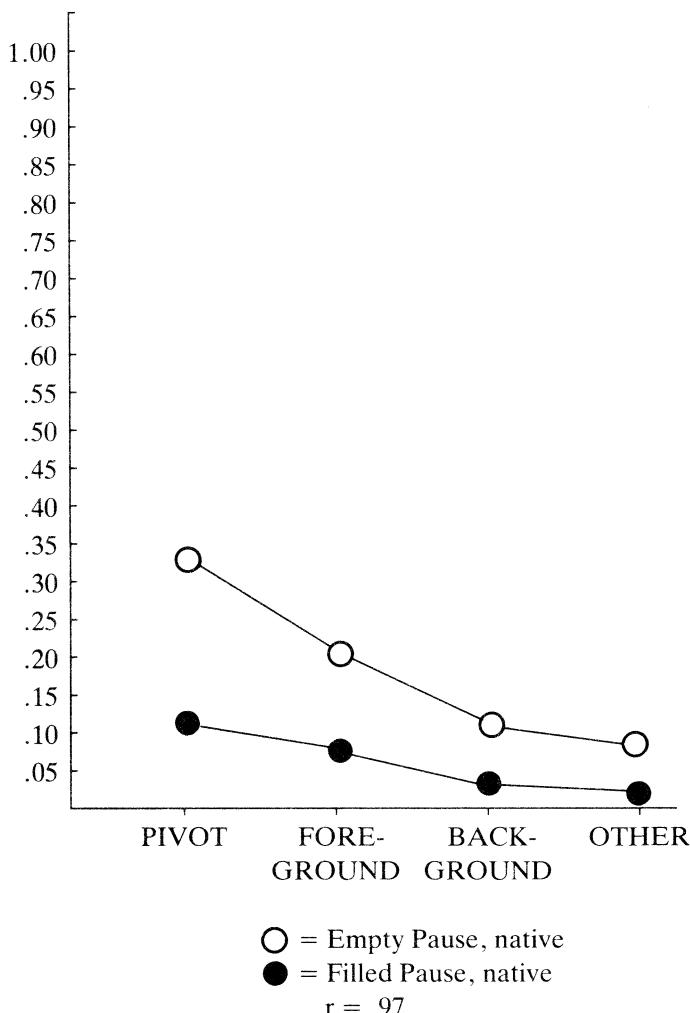
GRAPHS 6a and 6b
PAUSES PER PROPOSITION

6a NON-NATIVE



GRAPHS 6a and 6b
PAUSES PER PROPOSITION

6b NATIVE



pauses followed the Foregrounding Hierarchy exactly as the other pauses and dysfluencies did ($r = .99$). In addition, the natives and non-natives both fol-

lowed the Foregrounding Hierarchy in precisely the same way ($r = .99$) Chafe also found a similar increase in errors at major event boundaries.

3.3. Filled Pauses

Filled pauses function very differently from empty ones. Filled pauses hold the floor while the speaker searches for the specific word which he has already ordered up with a typological description, but not has not yet been delivered to “the tip of his tongue.” Different fillers serve different functions: “um” and “ah” mark a successful memory search, while “oh” signals selection of an example.¹⁴ Virtually all the filled pauses in this study contained “um” or “ah” because the pressured task and the lack of a conversation partner precluded a more leisurely search for examples and clarifications. The native speaker filled initial pauses with “um” or “ah,” where the non-natives would typically remain silent. Native speakers were also much more likely to start new propositions with filler conjunctions such as “and then.”

In contrast to the large gap between native and non-native pause rates, filled pause rates were very similar, as Graphs 6a and 6b show. This indicates that the search for a specific word to express an already-formulated proposition is not much more difficult for fluent non-natives than it is for natives. Still, both groups found word-search for pivots harder than for foregrounds, and so on down the scale. Bringing an already-ordered word out of storage seems to be a relatively mechanical, universal, neurologically pre-determined task, once the difficult jobs of framing major case roles and syntactic structures are completed.

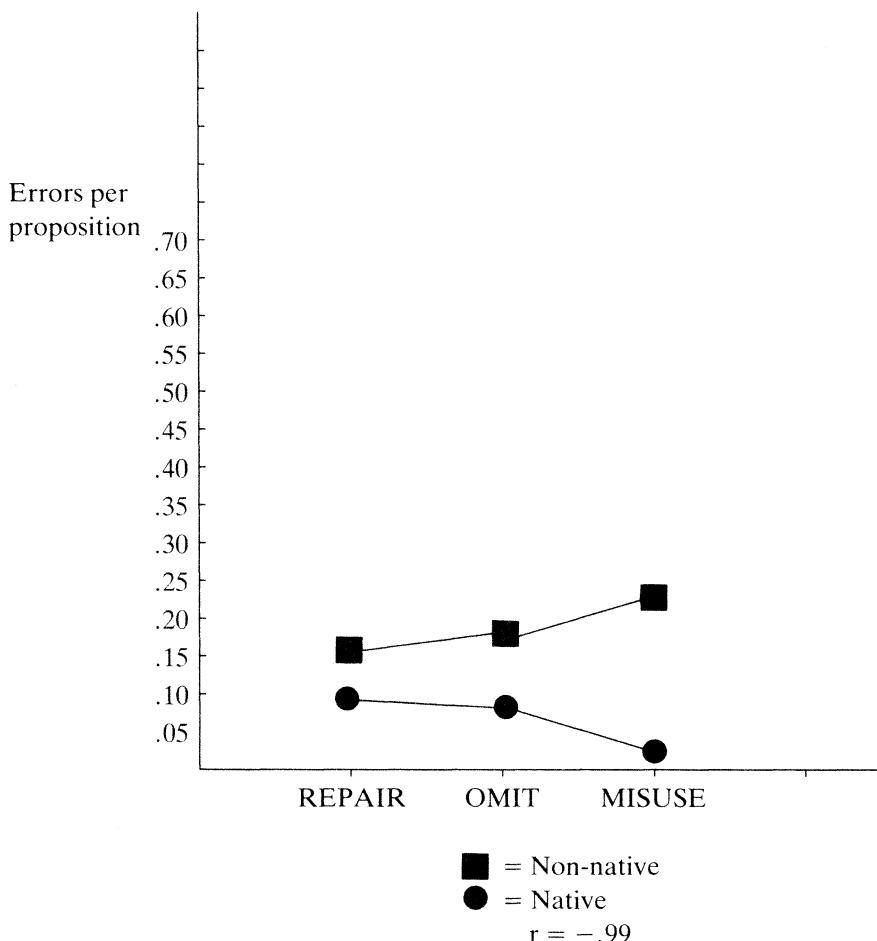
4. Errors

4.1. Error Overview

Unlike the pause rates, where natives and non-natives patterned alike, the two groups had exactly inverse error patterns, as shown in Graph 7. For natives, repairs were more frequent than word omissions, and omissions more frequent than syntactic or semantic misuse. For non-natives, the pattern was reversed. Not surprisingly, the non-natives were most likely to misuse forms, less likely to omit them, and proportionately least likely to repair them, although they still made a greater number of self corrections than the natives did.¹⁵ There is apparently a rather fixed ceiling to the human capacity for self-monitoring and self-correction.

Even so, the error rates for these fluent non-native speakers were closer

GRAPH 7
ERROR TYPES

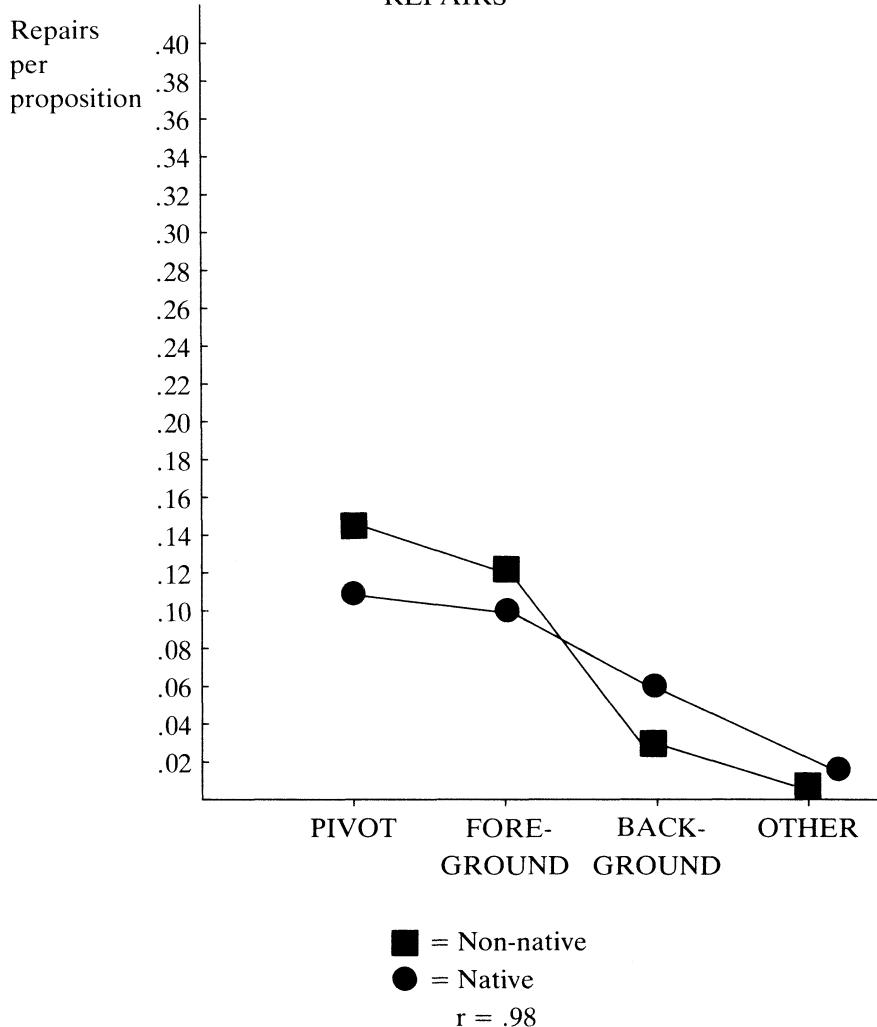


to the natives' than might be expected. Both groups were about equally likely to correct themselves: natives repaired 1 in 10 propositions, and non-natives 1 in 7. There was more difference in omissions: natives omitted only about 1 word for every 14 propositions, while non-natives omitted more than 1 word every 5. As expected, misuse rates differed the most: natives misused only 1 word every 100 propositions, while natives misused every 3 propositions.

4.2. Repairs

Repairs include both changes and repeats of a word or phrase. As Graph 8 shows, both natives and non-natives were about equally likely to make repairs. Both divided their repairs evenly between changes and repeats. Both allocated their repairs according to the Foregrounding Hierarchy.

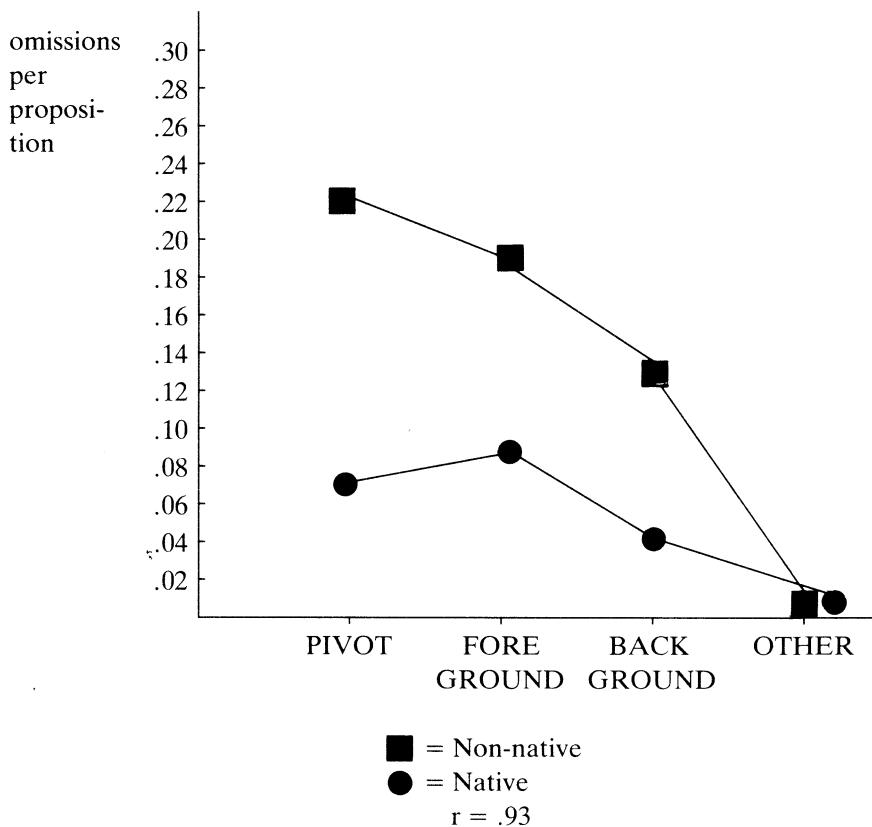
GRAPH 8
REPAIRS



This indicates that: 1) natives and non-natives have similar monitor and repair capacity and 2) changes and repetitions are about equally favored, regardless of language background. This argues for a very similar, neurologically set, maximum monitoring capacity for allocating repairs. It also suggests a similarly universal restriction on the number of repair-interruptions a speaker can tolerate or produce. If he or she repairs more than this maximum, neither the speaker nor the hearer will be able to hold the sentence in working memory. But if he repairs too much less, the sentence becomes unintelligible.

We see the same familiar Foregrounding Hierarchy for both native and

GRAPH 9
OMISSIONS



non-native repairs. While both allocate most of their repair budgets to the more informative pivot and foreground propositions, the non-natives use a more ruthless triage, since they divert their repairs there almost exclusively. Native speakers, in contrast, were able to extend themselves enough to repair an occasional background or other proposition.

4.3. Omissions

Both natives and non-natives omitted grammatically obligatory words and morphemes, especially informationally redundant determiners and auxiliary verbs. Graph 9 shows that pivotal and foregrounded propositions are the most difficult, since both natives and non-natives were most likely to omit redundant morphemes there. Neither group made any omissions in the editorial other propositions.

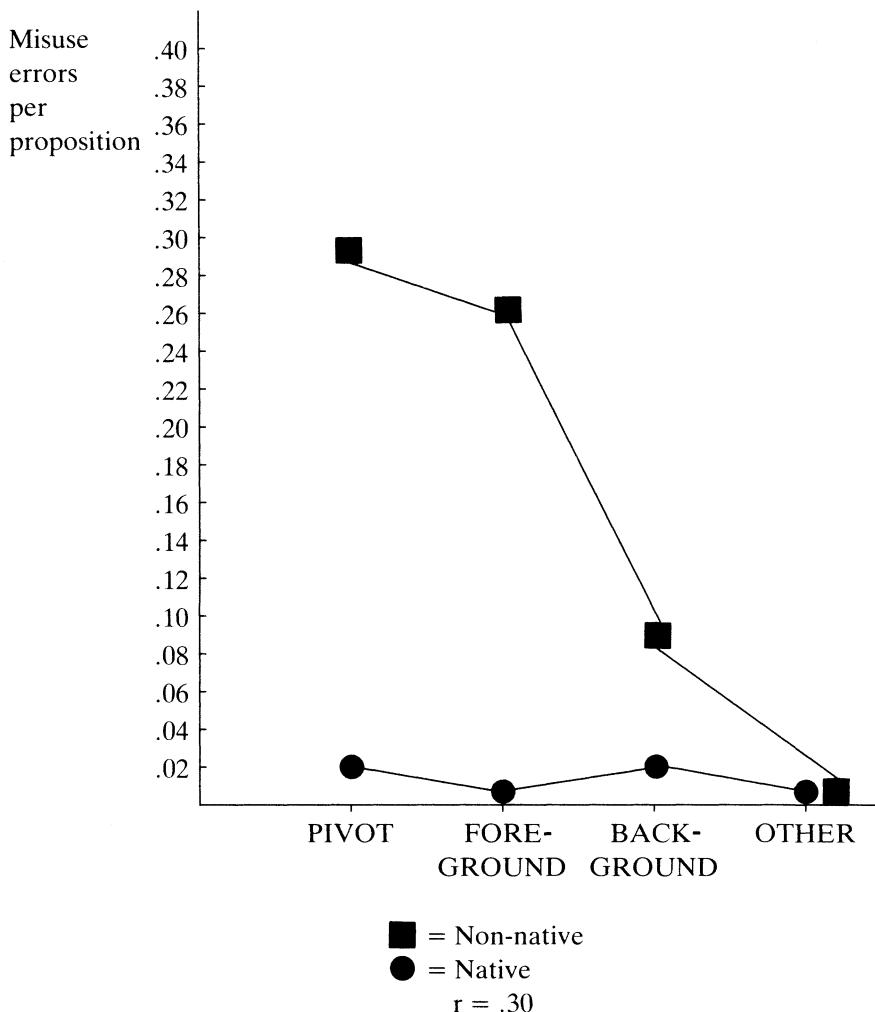
Not surprisingly, the non-natives omitted more overall, about one word or morpheme every 5 propositions; the natives only omitted 1 every 14. The gap between native and non-native omissions is widest for pivots, which shows that pivots were much harder for the non-natives than for natives. While natives only omitted one element every 14 pivots, non-natives omitted about 1 in 4. Still, both groups screened omissions according to the same scale of informativeness. For both natives and non-natives, some morphemes and some propositions are created more equal than others.

4.4. Misuse Errors

The biggest difference between the native and non-native speakers showed up in their misuse errors, as Graph 10 indicates.

The fifteen native speakers only made a total of five misuse errors. These included: three bad word choices, one agreement error, and one pluralization error. Three misuses came in pivots, and two in background propositions. These breakdowns developed largely because of the pressure of online description. The situation is very different for non-native speakers, since their English is neither perfectly mastered nor fully automatic. Competence errors appear in their performance, yet they still adhere to Foregrounding Hierarchy. For non-natives, almost one of every three pivotal propositions had a misuse error, as did almost 1 in 4 of the foregrounded ones. The error rate drops tremendously for backgrounded information: only 1 in 12 backgrounded propositions contains an error. Neither the natives nor the non-natives had any misuse errors in their optional, other propositions.

GRAPH 10
MISUSE ERRORS



If we look at the ranking of error types for non-natives, we see that virtually all the errors are local errors which do not impede communication, though they do violate the norms for surface syntactic agreement. Non-idiomatic word choices are also common.

RANKING OF MISUSE ERRORS FOR NON-NATIVES

ERROR TYPE	FREQUENCY
Agreement	21
Word Choice	16
Tense	13
Order	6
Determiner	5
Preposition	3
Plural	2
Time	1
Aspect	1

With the possible exception of the two errors in time and aspect marking, these misuse errors are all performance problems in surface agreement, rather than reflections of any cognitively different patterning for either sentential relations or world view. The very redundancy of the misused forms neutralizes the effect of their concentration in the informationally crucial pivotal propositions.

5. Conclusions

All the evidence points to the following conclusions:

1. The Foregrounding Hierarchy has psychological reality for describing prototypical events regardless of language background.
2. Pivotal and foregrounding propositions are much more alike than backgrounded ones, since pivots and foregrounds describe obligatory information. Other propositions serve a variety of very different, optional functions.
3. For both natives and non-natives, pivotal utterances are both the most necessary, and the most prone to pause and error. Neither natives nor non-natives will describe events lower on the informativeness hierarchy unless higher-rated events have already been described with some fluency.
4. Dysfluency is a single broad phenomenon which includes both pause and error. When either natives or non-natives are under stress, they become dysfluent in similar ways. Pivotal and foregrounded information is consistently the least fluently expressed; it

- is also the most likely to be repaired.¹⁶ All speakers have a monitor which is set to produce more pauses than errors at a ratio of 3:2.
5. Pauses allow additional planning time, but filled and empty pauses function differently. In this study, differences in pause use reflect different linguistic processing needs, not different patterns in comprehension of events. Both natives and non-natives pause most frequently for pivots. Empty pauses reflected additional linguistic planning time rather than rhetorical flourishes.
 6. Filled pauses indicate the time for lexical access. Natives and non-natives have very similar filled pause rates. This indicates that the difficult, non-automatic part of speech production is framing case roles for the most important events. Lexical access reflects a performance lag which is relatively unaffected by overall fluency or native speaker background. There is also less individual variation in filled pause rates than in empty pause rates.
 7. A neurologically set monitor limits the maximum number of repairs a speaker can produce, so that natives and non-natives are both restricted to the same maximum number of repairs per proposition. If this repair capacity is overloaded, the speaker will first pause more, and then, after a maximum pause limit, err more.
 8. Speakers would rather pause than err, and they would rather omit a non-crucial word than misuse it. Even under time pressure, natives only rarely make grammar or word choice errors. While non-natives are more likely to err, they still make mostly local agreement errors which do not disrupt the message.
 9. All propositions are not created equal; pivots are more equal than the others. A common, neurologically-developed monitor allocates linguistic energy to express pivotal events at the expense of all others, regardless of the speaker's language background. Speakers are highly sensitive to their current balance. If they find themselves overextended, they will retreat to a pragmatic mode. They will not even attempt backgrounding or elaboration if their accounts are overdrawn.
 10. The foregrounding monitor may be disordered in certain sorts of emotional and neurologically-based language disorders. It may also be re-set for special stylistic effects. However for normal adult speech, the foregrounding monitor transcends individual style, cultural background, native language, and degree of fluency.

Further studies will be needed to determine how well the Foregrounding Hierarchy predicts both delayed oral and written language, and listening comprehension. But a strategy as powerful and universal as the foregrounding monitor is likely to be re-employed in as many language situations as possible.

NOTES

- 1) See also Tomlin 1984 and 1985.
- 2) Overview in Clark and Clark, 1977, pp. 57-92.
- 3) See Tomlin 1984 and 1985 for fuller description, and other studies.
- 4) Anderson and Bower, 1973; van Dijk and Kintsch, 1977.
- 5) See Nooteboom, 1980
- 6) Tomlin, personal communication.
- 7) The interviewer was always in the room, but sat behind the speaker as he or she faced the screen and the tape recorder in the online set.
- 8) See Tomlin 1984, 1985 for discussion of event boundaries.
- 9) Goldman-Eisler, 1968, MacKay, 1980.
- 10) Goldman-Eisler, 1968, p. 59.
- 11) See Duez, 1982, for discussion of pauses in French and English. Goldman-Eisler finds strikingly similar pause patterns in both spontaneous and reading style in English, French and German, (1968, pp. 78-9).
- 12) See discussion in Tomlin 1984, 1985. It is possible that young children might have described a different set of events.
- 13) Goldman-Eisler found 31% initial pauses for descriptions of cartoons, and 43% for summaries, (1968, p. 62.)
- 14) James 1973.
- 15) See Levelt for discussion of self-correction.
- 16) This would not necessarily have to be the case. It is possible to imagine, for example, that pivotal propositions would have the lowest error rate but be best-monitored and most likely to be repaired.

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THE GRAMMATICAL MARKING OF THEME IN ORAL POLISH NARRATIVE*

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1. Introduction

The study of themehood in narratives shows how reference to a specific entity is grammaticalized within the discourse context of a story structure. Theme, here, refers to the protagonist in a story; sub-theme refers to other characters that take part in the story. This paper describes the use of pronouns, nouns, modifying (descriptive) adjectives, and zero pronoun anaphora in subject position to refer to theme and subtheme in an oral Polish narrative. The study shows that continuous predictable themes are represented by anaphoric zero pronoun. When themes are overtly expressed, it is due to several factors: narrative discontinuities in the text, changes in speaker's perspective, and the organizing principle of contrast to develop background paragraphs.

In Russian, a related Slavic language, Nichols (1984) examined thematic reference for contemporary prose narratives. She found that the preferred marking for uninterrupted theme was anaphoric zero pronoun. Overt marking of theme, however, was predictable under certain conditions: narrative discontinuities and changes in perspective. The narrative discontinuities were caused by an intervening potential theme (i.e., secondary characters), change in syntactic relations, a topic shift, a change in temporal reference, or a break in narrative boundaries (i.e., episode change and direct speech). Changes in perspective reflected the difference between thematic and non-thematic viewpoint. Thematic viewpoint was expressed through the use of names of characters and non-thematic viewpoint or external viewpoint through the use of descriptions for characters and patronymics.

Due to similarities in the grammars of Polish and Russian, it is predictable that contemporary Polish narratives should reflect similar mapping of

theme onto grammatical form. The preferred marking of continuous theme in Polish, then, ought to be anaphoric zero pronoun. Polish, like Russian, inflects verbs for tense, person, and number in the present. Polish, furthermore, is more explicit as to subject reference in the past and analyzed future verb forms by also showing gender in addition to the person and number marking of Russian. Because of the explicit subject reference marked on the verb through verbal agreement, the overt use of subject pronouns is considered redundant and mainly a mark of emphasis. Yet, although redundant, pronouns are surprisingly a feature of spoken Polish.¹

Comparison between first person oral and written narratives in Polish shows a remarkable contrast in overt thematic marking. For example, where the present oral narrative shows 52% (140/267) overt use of theme, a written narrative (Mayewski 1975) shows only 1% (2/225) overt marking.² This paper, in examining the function of overt themes, helps explain the discrepancy between the high frequency of overt reference in the oral data and its low frequency in the written language. It claims that despite the obvious thematic marking shown through verbal agreement, redundant pronouns are used for three reasons: (1) to delineate the boundaries in a narrative, (2) to structure contrast relationships, and (3) to show the speaker's personal involvement. More importantly, each of these factors accounts for overt thematic marking in unique (i.e. non-overlapping) portions of the text.

Three discourse-pragmatic principles are proposed to account for the grammatical marking of theme in an oral narrative.³

1. A textual principle of economy states that in texts reference to continuous themes is marked by zero pronoun anaphora and to interrupted themes by full nouns for subthemes and pronouns for theme.
2. A textual principle of expressivity states that in texts the overt use of themes in sequential clauses develops an idea through comparison or contrast.
3. An interpersonal principle of cooperation states that a speaker's use of marked as opposed to unmarked forms when referring to themes reflects his/her attitude toward the referent.

The following section introduces the data and describes the structure of the narrative. Sections 3, 4, and 5 relate thematic use to the structure of the narrative: sections 3 and 4 describe the use of theme and narrative discontinuity; section 5 examines the overt use of theme to develop background

paragraphs of comparison/contrast. Section 6, in contrast, relates thematic use to the speaker-hearer dimension and examines the use of theme to show perspective. Finally, section 7 presents a brief conclusion.

2. Data and Structure of the Narrative

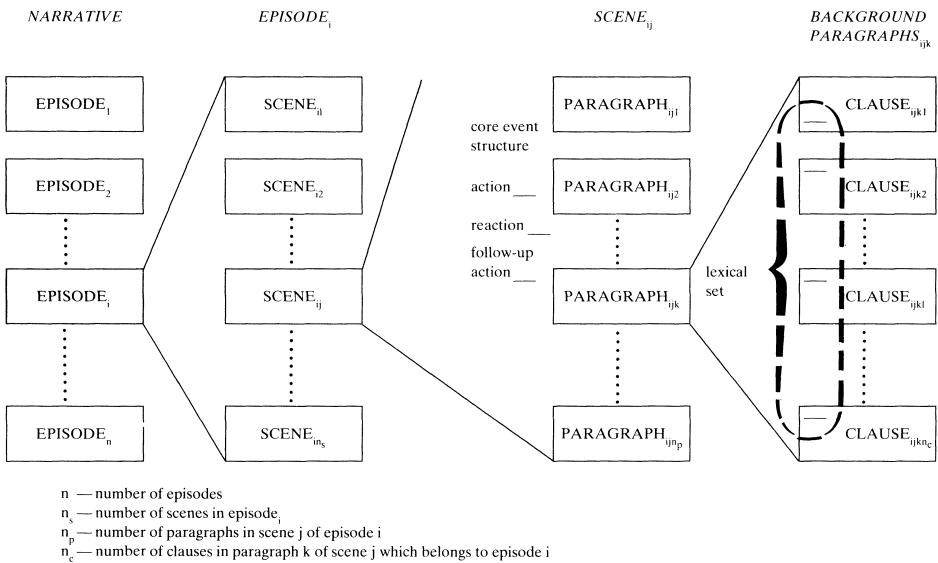
Data. A sixty minute tape of one woman's personal oral narrative provided the data for this study.⁴ The material was taped via audio cassette and transcribed according to Chafe (1980). Clauses or phrases ending with a slight fall in intonation are punctuated with a comma. Clauses ending with a dramatic fall in intonation are marked with a period. Short pauses between words not extending beyond .5 seconds are separated by periods, and longer pauses are timed and indicated in parentheses in the transcript. Question marks indicate clause final rising intonation and brackets are used for uncertain transcriptions.

Structure. The structure of a narrative cannot be accounted for without considering a speaker's goals in telling the story. Levy (1979) has noted that what is called the discourse structure of a text is a complex mixture of interpersonal, textual, and ideational goals.⁵

A speaker has a number of ideas he wants to express and a corresponding set of communicative goals. Some of these goals (called IDEATIONAL goals) are concerned directly with the communication of these ideas or propositions: some (called TEXTUAL goals) are concerned with the weaving of these ideas into a coherent text: and still others (called INTERPERSONAL goals) deal with presentation of self in relation to the hearer, with matters of status and attitude. (Levy 1979: 197)

The speaker's goal in relating this story is to tell how she got from one place to another. Specifically, the narrative describes a young woman's flight from a town in Eastern Poland to a town in Western Russia. Since the story takes place in 1941 during World War II at the time of the German invasion of the Soviet Union, the protagonist's flight to a sanctuary beyond the German-Russian front is repeatedly frustrated as she is unable to outrun the German advance. Arrival at a town already or about to be besieged leads to her setting out for a new place. The story, then, consists of a chain of ten episodes each separated by pauses of two to five seconds in length, and each describing her adventures as she traveled from one town to the next. Each episode represents in Levy's framework one ideational goal (see Figure 1).

FIGURE 1
Structure of Oral Narrative



The speaker realizes her textual goals in the way she structures the scenes that comprise an episode (see Figure 1). Each episode is a bundle of loose event (i.e. simple action) clauses and several scenes which focus on specific events that occur during travel from one town to another. Every scene has a core event structure. The core event structure described here is similar to that described by Mandler and Johnson (1977) for generative story grammars with the exception that their story grammar does not allow for the inclusion of background digressions, which were considerable in the present text.⁶ Furthermore, digressions which often express the interpersonal goals of a story (e.g. moods, reactions, feelings, motives, etc.) are structured and must be accounted for in a discussion of oral narratives. Each event structure, then, consists of an action done to the protagonist, the protagonist's mental reaction to the instigating event, and an action which is the protagonist's physical follow-up action to his/her reaction. The plot structure looks as follows: CORE EVENT STRUCTURE: INSTIGATING ACTION — MENTAL REACTION — FOLLOW UP PHYSICAL ACTION

The following section describes the interaction between thematic reference and textual organization in terms of the story's episodes, their scenes and core event structures, and the introduction of quoted speech.

3. Theme and Discourse Continuity

Because discourses usually consist of chains of clauses about one topic, reference to that topic is considered to be the unmarked case. Topic continuity or predictability is thus expected in cohesive units of discourse. The marked case is topic change or discontinuity. Discontinuous or new topics are surprising and therefore need adequate coding to clearly identify their referents. Givón (1983: 18) describes the economics of topic identification in the following way. “The more disruptive, surprising, discontinuous or hard to process a topic is, the more *coding material* must be assigned to it.” He has identified the following cross-linguistic scale for coding topic accessibility (1983: 17).

Most Continuous/Accessible Topic

- zero anaphora
- unstressed/bound pronouns or grammatical agreement
- stressed/independent pronouns
- R-dislocated DEF-NP's
- neutral-ordered DEF-NP's

L-dislocated DEF-NP's
 Y-moved NP's ('contrastive topicalization')
 cleft/focus constructions
 referential indefinite NP's

Most Discontinuous/Inaccessible Topic

Oral narratives are continuous and have no visibly discrete units such as chapters, sections, or paragraphs to mark topic change. Yet in oral narratives we can define episode boundaries by identifying ideational goals and by noting the coincidence of described goals with long pauses (2-5 seconds in length). Given these clues to the internal structure of the oral narrative and the findings of Givón and Nichols, it was predicted that continuous themes would be represented by zero anaphora and discontinuous themes by full noun phrases for subthemes and independent pronouns for the theme.⁷ The following will show that indeed narrative continuity/discontinuity predicts the nature of thematic reference.

From this narrative's data two continua for topic continuity in Polish can be derived. The following table accounts for thematic continuity in sub-themes:

Highest Continuity

- a. zero anaphoric pronoun/grammatical agreement
- b. independent pronoun
- c. modifying adjectives (e.g. this one, the old one)
- d. full noun phrases

Lowest Continuity

In the theme, which is a first person narrator, continuity ranges from anaphoric zero pronoun/grammatical agreement showing highest continuity to the first person pronoun *ja* 'I' showing lowest continuity. (this scale is discussed in part 6.)

Example (1) shows the use of anaphoric zero pronoun as continuous theme marker after an initial overt introduction of theme.⁸ In the passage, the narrator digresses about herself as she waits to find a train that she can sneak aboard.

- (1) *Ina stacji znów..stał pociąg osbowy,* And in the station once again there stood a passenger train,
(1.5) i ewakuowano żony (1.5) and were evacuated wives
of (1.5). oficerów rosyjskich, of office..Russian officers,

<i>ja byłam strasznie żywotna,</i>	<i>I was terribly energetic,</i>
<i>straszna taka wiesz,</i>	<i>frightening you know,</i>
<i>wszystko Ø moglam się dowie-</i>	<i>everything I (Ø) could find out,</i>
<i>dzieć,</i>	
<i>Ø biegałam tak,</i>	<i>I (Ø) would run like that,</i>
<i>Ø mowiałam dobrze po</i>	<i>I (Ø) spoke Ukrainian well,</i>
<i>ukraińsku,</i>	
<i>(1.2) i proszę ciebie i Ø</i>	<i>(1.2) and listen and I(Ø)</i>
<i>dowiauję się od jednego tam</i>	<i>find out from someone there</i>
<i>na stacji,</i>	<i>at the station,</i>
<i>że jest pociąg w tej Zmerynce,</i>	<i>that there is a train in Zmerynko,</i>
<i>i on będzie będą ładować</i>	<i>and it will they will be</i>
<i>wnet,</i>	<i>boarding right away,</i>

For subthemes anaphoric zero also generally represents uninterrupted theme. Below, the subtheme is a corpse that the narrator finds lying on the road.

- (2) *i jak widzisz to mi zostało
w pamięci w tej szosie,
jak tylko wyszlam,
to było od naszego domu może
wiem.. sto metrów,
leżał jeden (.5) zz który..
miał kulę w plecach,
tak Ø leżał skulony,
i tak Ø zginął.* and as you see it has remained
in my memory on this road,
just as I set out,
it was from our house
I guess one hundred yards,
lay *someone* (.5) who
had a bullet in his shoulders,
like so *he* (Ø) lay there bent over,
and so *he* (Ø) died.

Usually themes and subthemes are expressed as the syntactic subject of a clause and therefore in the nominative case. However, themes and sub-themes may also appear as inverse subjects in the dative case, as objects in the accusative, genitive, or dative, or as objects of prepositions in other oblique cases. There are two syntactic causes for the overt coding of theme or sub-themes: a theme becomes overt when it repeats a theme that is not in the nominative (subject) case, and a theme is overt after its introduction through a presentative construction. In Polish, the presentative construction changes usual SVO word order to (O)VS. The following example shows the use of the pronoun *on* 'he' after the introduction of a character through a presentative construction.

- (3) *ale do mego wagonu (1)
wchodzi oficer,
on uh ładuje swoją żonę,
kilka worków chleba,
takie worki chleba,
i Ø musiał być jakiś wielki,
i z dziewczyną i służącą,
to Ø musiał być jakiś wielki
człowiek,
(1) i Ø załadował..Ø
załadował ich.*
- and into my car (1) walks
an officer,
*he uh loads his wife (onto the
train), several sacks of bread,
such large bags of bread,
and he (Ø) must have been someone
great,*
and with a daughter and maid,
*he (Ø) must have been somebody
great,*
and *he (Ø) loaded them..he (Ø)*
loaded them (onto the train).

In the next example, a subtheme, Blima, becomes overt after appearing as a direct object in the accusative case *jq* 'her'. Switch reference does not account for the use of the pronoun *ona* 'she' because verb agreement in the verb *pracowała* 'she worked' codes for person, number, and gender.

- (4) *Ale śmieszne było co,
ta Blima..Blima była na
matematyce,
i Ø mieszkala w domu
akademickim.
A później..Tatuś ją spotkał
w Saratowie,
i ona pracowała w stołówce,
i ona..nosiła takie majtki
które na gumie,
i Ø kradła kotlety albo kaszę,
i Ø przynosiła Tatusiowi
do jedzenia.*
- And what was funny was this,
*this Blima..Blima was in
mathematics,*
and *she (Ø) lived in a
dormitory.*
And later..Daddy met *her*
in Saratov,
and *she* worked in a mess hall,
and *she..wore such underwear*
which (were held up) by rubber band,
and *she (Ø) stole cutlets or kasha,*
and *she (Ø) brought (them) to Daddy*
to eat.

From the above we see that continuous themes are represented by zero anaphora and that syntactic discontinuity causes the following thematic referent to be overt. Out of 20 cases of syntactic discontinuity in the data, 80% (16/20) were followed by overt themes.

4. Narrative Discontinuities

The major causes of discontinuity, however, are due to the structure of the narrative. Action discontinuity at episode and scene boundaries and in

the core event structure gives rise to overt thematic reference. Person discontinuity at the introduction of direct speech causes overt thematization as well. The following describes the nature of these discontinuities.

Change of Episode. Episodes represent the narrator's journey from one destination (town, village, or city) to another. These major text boundaries are represented by sentence final intonation and by long pauses of 2 to 5 seconds in length. Overt theme is used at episode junctures because a new series of events, united around the idea of getting to a certain destination, is initiated at these points. There were ten episodes in the story: 70% (7/10) showed overt pronoun themes.

In (5) the narrator describes how she sets out on her journey after a friend comes to warn her to leave. The pronoun *ja* 'I' is used as the narrator leaves her home. Zero (\emptyset) is used for the digression on her leave taking and *ja* 'I' repeats the sentence indicating the beginning of the episode which takes the character from her home town of Złoczow to the neighboring town of Tarnopol.

- | | |
|---|--|
| (5) <i>I ona przyszła i mówi,</i> | And she came and says, |
| <i>"Charlotta, wychodzimy,</i> | <i>"Charlotta, let's leave,</i> |
| <i>wychodzimy ze Złozowa,</i> | let's leave Złoczow, |
| <i>wychodzimy musimy wyjść</i> | let's leave we must leave |
| <i>ze Złozowa,</i> | Złoczow, |
| <i>bo uh bo Niemcy wchodzą.</i> " | because uh because the Germans
are coming." |
|
 | |
| (2) <i>No było nad ranem,</i> | (2) Well it was dawn, |
| <i>i ja wyszłam,</i> | and I left, |
| <i>nie \emptyset będę ci opowiadać jak</i> | <i>I (\emptyset) won't tell you how</i> |
| <i>się \emptyset zegnałam z mamą,</i> | <i>I (\emptyset) said goodbye to mother,</i> |
| <i>bo to \emptyset będę zaraz,</i> | because <i>I (\emptyset)</i> will start right away to |
| <i>\emptyset przestanę mówić na ten</i> | <i>I (\emptyset) won't talk on that topic,</i> |
| <i>temat,</i> |
not anymore. |
| <i>to już nie.</i> | |
| (.6) <i>więc uh ja wyszłam,</i> | (.6) well uh I left, |
| (1.5) <i>I \emptyset poszliśmy znowu</i> | (1.5) And we (\emptyset) went once more |
| <i>piechotą,</i> | on foot, |

Another episode near the end of the story is shown in (6) where upon arriving in the town of Krasnodar the narrator discovers that there is a sanctuary nearby where she may find her university classmates. After a long

pause of 2.5 seconds and a few introductory clauses, the pronoun *ja* 'I' is used as she sets out toward this new goal.

- | | |
|---|--|
| (6) <i>to mnie powiedzieli że w
że w tym,
że jakieś coś dwadzieścia czy
trzydzieści kilometrów od
Krasnodaru jest jakiś
sowcholz,</i> | so they told me
that in this,
that some twenty or thirty
kilometers from Krasnodar
is some kind of solxoz, |
| (1) <i>i tam są studenci ze
Lwowia,</i> | (1) and there are students from
Lwow, |
| (2.5) <i>no jak?
to ale i był wieczór już,
i ja chciałam.. pójść
piechotą,</i> | (2.5) well then what?
but by then it was already evening,
and I wanted to go on foot, |
| <i>bo dwadzieścia dwadzieścia
kilometrów,
to dla mnie nie było już
tak strasznie,</i> | because twenty twenty
kilometers,
wasn't for me
that terrible, |

Change of scene. Episodes are composed of a series of scenes, picture-like frames of events, which are held together by loose event/action clauses such as "and we walked on" or "we slept by the roadside." Each scene calls up a new situation, thereby demanding that referents be reintroduced through overt expression. Out of 31 scene junctures 81% (25/31) showed overt pronoun use.

In the following passage the narrator describes a baker from whom she and her friends hope to receive a night's lodging. The baker is first introduced as a full noun in a background digression. The digression is followed with intervening event clauses mentioning the narrator's and her friend's arrival at the town of Podwoloczysk. A new scene opens up with the girls' arrival at the baker's house. The reintroduction of the baker as a noun in the genitive case is followed by the pronoun *on* 'he' in the nominative (subject) case. The following references to the baker are expressed through zeroes.

- | | |
|--|--|
| (7) <i>A ta Zosia miała jakiegoś
tam--
chłopca znajomego,
uh przedtym (który)
wiedziała że</i> | And this Zosia had there
a boy friend,
before that one, (who) she knew |
|--|--|

<i>jego ojciec jest piekarzem,</i>	that his <i>father</i> is a baker,
<i>i Ø mieszka pod Wołoczysko, i--myśmy, (.5)</i>	and Ø lives near Wolocyzskó, and--we, (.5)
<i>nie wiem jak długo szłyśmy, spły po drodze gdzieś na polach,</i>	I don't know how long we walked, slept somewhere in the fields,
<i>już nie pamiętam dokładnie, ale przyszłyśmy do Podwołoczysk,</i>	I don't now remember exactly where, but we came to Podwoloczysko,
<i>przyszłyśmy do Podwołoczysk, i przyszłyśmy do tego piekarza.</i>	we came to Podwoloczysko, and we came to <i>that baker</i> .
<i>To naprzód on się bał nas spuścić,</i>	First <i>he</i> feared to let us in,
<i>bo on powiedział, a jego syn był komunistą, to my też na pewno, (xxx)</i>	because <i>he</i> said, and his son was a communist, so we also for sure (would be), (xxx)
<i>nikt nie zdawał sobie zprawy że</i>	no one realized that
<i>Niemcy przyjdą że to.</i>	the Germans would come.
<i>No ale w końcu Ø się zgodził, tam, Ø położył, Ø pozwolił tej trójce</i>	But in the end <i>he</i> (Ø) agreed, there, <i>he</i> (Ø) put, <i>he</i> (Ø) allowed
<i>położyć się spać na podłodze,</i>	the trio to sleep on the floor,
<i>Ø dał nam wypić herbatę, i każdemu po kostce cukru, a Ø był zły jak pies, chleba nam nie Ø dał.</i>	<i>he</i> Ø gave us tea to drink, and each a sugar cube, and <i>he</i> (Ø) was as angry as a dog, even bread <i>he</i> (Ø) didn't give us.

Action discontinuity in core event structure. Recall that nearly every scene has a core event structure consisting of an instigating action, the theme's mental reaction and her follow-up physical action.

In the excerpt below, the narrator and her two companions have been advised that they must leave town because the Germans are approaching. The following shows their reaction and follow-up action. The mental reaction

is marked with the pronoun *my* 'we'. The follow-up action is marked with zero anaphora.

- (8) *i--uh wszyscy naokoło
przychodzą,*
<instigating action>
to--mówią, (1.3)
Rosja zamknęła granicę,
ale noc jest,
<reaction>
my nic nie możemy,
na na z powrotem nie ma
co iść,
my spróbujemy
a tym czasem nad ranem
ledwie zaświtało,
<follow-up action>
Ø idziemy,

and everyone around comes up,
<instigating action>
and (they) say, (1.3)
Russia closed the
borders, but it's night,
<reaction>
we cannot do anything,
there's no way to turn back,

we will try it,
meanwhile at dawn it had barely
become light,
<follow up action>
we (Ø) go..

The next example collapses reaction and follow-up action. The pronoun signals willful activity. In this scene the train carrying the narrator stops, and starving from hunger she jumps out of the train to grab some food. Her following actions show action continuity and are represented with zero anaphora.

Verbs that typically appear with the pronouns *ja* 'I' or *my* 'we' at this "reaction" part of the core event structure are *chcieć* 'want to', *postanowić* 'decide to', *wziąć sobie* 'take yourself in hand, set out to', *spróbować* 'attempt' and *pomyśleć* 'consider'. The use of pronouns in the reaction part of the event structure illustrates action discontinuity. It is the reaction part of a scene that begins a new series of actions initiated by the protagonist. Out of

33 core event structures, 88% (29/33) showed overt pronominal theme.

Introduction of direct speech. In addition to the action discontinuity shown in episode and scene changes and in the reaction part of a core event structure, participant discontinuity is reflected in the introduction of direct speech. Out of 39 introductions of direct speech in the data, 90% (35/39) have overt marking; from this number 11 out of 12 instances, or 92%, represent the narrator's use of *ja* 'I'. Below the narrator describes a friendly gentleman who offers her lodging while she is hiding in a forest during a bombing raid. Notice that for each character overt pronouns are used to refer to his/her introduction of speech.

- | | |
|---|--|
| (10) <i>i kolo mnie leżał taki starszy pan znaczy Ø leżał Ø krył się,</i> | and next to me lay <i>this older gentlemen,</i> |
| (1.4) <i>to on mówi pyta mi się “co jest..skąd ty jesteś?”</i> | I mean <i>he</i> (\emptyset) lay <i>he</i> (\emptyset) hid himself,
(1.4) so <i>he</i> says asks me
“what's the matter..
where are you from?” |
| <i>aja mówię “ze Lwowa” to on mówi “wiesz ja jestem z Kijowa,</i> | and <i>I</i> say “from Lwow”,
so <i>he</i> says “You know I
am from Kiev,
I am returning to Kiev”. |
| <i>ja wracam do Kijowa”.</i> | |

To conclude, the overt expression of usual anaphoric zero theme is caused by:

- a. syntactic discontinuity
- b. episode change
- c. scene change
- d. action discontinuity in core event structure
- e. introduction of direct speech

In summary, continuous themes are usually expressed by zero anaphora. Overt themes are caused by several factors. One factor, syntactic discontinuity, occurs when themes are in non-subject case or in a presentative (O) VS word order. In addition, narrative discontinuities also trigger overt marking of theme. See Table 1. So far the overt realization of theme has been due to episode, scene, and plot divisions, and the introduction of speech. All of these discontinuities are found in foregrounded narrative events. In the fol-

lowing section, overt use of theme is discussed as it relates to backgrounded portions of the text.

TABLE 1
Summary Table for Thematic Representation
in Discontinuous Sections of the Oral Narrative

Overt theme: Zero anaphora: Total
independent pronoun verb agreement

1. Syntactic Discontinuity	16	4	= 20
2. Episode Boundary	7	3	= 10
3. Scene Boundary	25	6	= 31
4. Reaction in Core Event Structure	29	4	= 33
5. Introduction of Speech	11	1	= 12
Total	88(pronouns)	18(zeroes)	=106

chi square = 44.92, df = 1, p<.01

5. Overt Theme as Method of Development for Background Motifs

As noted previously, scenes are composed of a series of events, three of which usually form a core event structure. These main line events (foreground) are interspersed with digressions (background) which serve to elaborate the main-line events of the story. The digressions can be described as "paragraphs". That is, they are a series of clauses united by some uniform orientation which is either spatial, temporal, thematic (i.e. ideational) or participant (Grimes 1975:102). In this text, chunks of background clauses often qualify as "paragraphs". They may describe physical aspects of the story: for example, its setting or characters; or they may develop motifs such as loneliness, hunger, poverty, fear of capture, and the like.

More to the point of this discussion is the construction of these background clause units or paragraphs, and, specifically, the role of their overt inclusion of subject pronouns. It is proposed that the overt use of pronouns and nouns (names) allows for the construction of paragraphs built

around the organizing principle of comparison/contrast. That is, when pronouns or nouns (names) begin a series of clauses, the clauses usually form a paragraph of contrast. Fries (1980) has discussed the function of clause initial elements in organizing discourse. He suggests that there is a correlation between initial clause elements and the method of development of a text. Thus, clause or sentence level initial elements are not only determined by what is old and new information in a discourse but are rather a part of a larger organization pattern determined by the motif of the discourse. Fries claims that (1980: 53):

if the themes [Fries means the initial clause elements] of most of the sentences of a paragraph refer to one semantic field (say location, parts of some object, wisdom vs chance, etc.) then that semantic field will be perceived as the method of development of the paragraph.

In this study Fries' concept of initial clause element is used, but the first element in the clause refers to the first semantic element, thereby excluding conjunctions (e.g. and, so, because, etc.) and fillers (e.g. well, then, so). In the present data the speaker uses lexical fields, adverbs of place or time or names and pronouns, to develop background motifs.

Before illustrating the use of overt themes as initial element, I will show the use of adverbials as a method of development for background motifs. The first example is a paragraph of description developed through clause-initial words of space and time. The paragraph describes a castle which the protagonist passes as she sets out on her journey at the beginning of the narrative.

- (11) *i tam myśmy mieszkali bardzo blisko zamku,* and *there* we lived very near a castle,
to był zamek Jana Trzeciego Sobieskiego, it was the castle of Jan Sobieski III,
tam było, *there* it was,
po później to było więzienie, later it was a prison,
a to ten zamek jak za czasów dawnych and this castle in ancient
był otoczony taką fosą w której wpłyneła woda, times was surrounded by a moat, in which flowed water,
kiedyś, at one time,
a przed tym był taki most zwodzony, and before then there was a drawbridge,
ale wtedy tej wody nie było, but then there was no water,

*i jak widzisz to mi zostało
w pamięci w tej szosie.* and as you see it has remained
in my memory on this path.

Six out of ten initial clause elements begin with time or place adverbials. Thus the first elements provide a method of development for the main topic of the paragraph, the castle. The description of the castle provides a setting for the action taking place in the narrative.

In the next example the lexical field of place provides the method of development. The motif or topic of the paragraph is to determine the next place to which to travel.

- (12) *to wyszliśmy znowu na
taką drogę,
i co myśmy dążyły?
Dążyłyśmy (.5) wszyscy
mówili.. że Armia Czerwona
cofa się do starej granicy,
a stara granica to była pod
Wołoczyskiej,
a Wołoczyska to już była nowa
granica,
i tam jak tylko trzeba
się dostać
do do Wołoczysk,
a tam już jest Rosja,
i tam będzie armia przestanie
się cofać,
i będzie można jakoś żyć.* so we went out on such a road,
and where were we trying to go?
We were trying (.5) everyone
said that the Red Army
retreats to the old border,
and the old border was
near Wołoczyska,
and Wołoczyska was not the
new border,
and there if one can just
get to to Wołoczyska,
and there finally is Russia,
and there the army will
cease to retreat,
and we'll be able to live somehow.

It is evident that paragraphs of description are often organized around lexical fields as a method of development. The systematic repetition of lexical fields as initial clause elements seems, therefore, to be a feature of oral discourse as well as of planned written discourse (cf. Fries 1980).

When overt themes begin a series of clauses, the clauses usually form a paragraph of contrast. Out of 28 instances of contrast in the text, 96% (27/28) showed overt use of pronoun to represent the narrator, whereas in non-contrast background clauses only 30% (20/66) showed overt use. In the paragraph below, the overt use of pronouns develops an illustration of poverty. The use of pronouns here is to provide a structural framework where a contrast relationship can be expressed:

- (13) *i tylko trójka dziewcząt idzie,
 ja miałam tylko teczuszkę,
 w teczuszcze Ø miałam tylko
 swoje dokumenty,
 a one miały z sobą trochę
 rzeczy,
 bo one wyszły ze Lwowa,
 a ja wyszłam z domu,
 i nic z domu nie Ø wzięłam,
 a one wyszły,
 bo one wyszły ze Lwowa,
 i Ø miały w plecaku trochę
 rzeczy,*
- and only a trio of girls walks,
 and I had a small bag,
 the purse I (Ø) had my
 documents,
 but they had with them
 some things,
 because they had left from Lwow,
 and I had come from home,
 and nothing from home did I (Ø)
 take, but they had left,
 because they had left from Lwow,
 and they (Ø) had in
 their backpack a few things,

A similar use of pronouns in sentence initial position is shown below. Once again contrast is the organizing principle to express the motif of poverty. Note that the two final clauses in the paragraph no longer develop the motif of poverty but rather elaborate on one detail — a watch — so these clauses do not show overt use of theme and subtheme.

- (14) *ta dziewczyna znów
 pojechała gdzieś
 indziej kogoś szukać,
 ale ona malała pieniądze,
 a ja nie miałam,
 a ja miałam tylko zegarek,
 i Ø malałam go sprzedać,
 i Ø nie mogłam go wtedy
 sprzedać,*
- the girl once again went
 somewhere else to find someone,
 but she had money,
 and I didn't have (any),
 I had only a watch,
 and I (Ø) had to sell it,
 and I (Ø) couldn't then sell it,*

Below the use of pronouns in initial position functions to describe the different whereabouts of the characters in the story. Again, the organizing principle is contrast:

- (15) *Wyszliśmy tak o trzeciej nad
 ranem,
 bo ona przyszła,
 ona gdzieś była gdzieś indziej,
 a ja byłam u rodziców,
 bo ja..moje rodzice
 mieszkali*
- We left at three in the
 morning,
 because she came,
 she was somewhere else,
 and I was at my parents',
 because I..my parents lived

we Złoczowie, in Złoczow,

In the above examples anaphoric zero pronouns are predicted because the characters have already been introduced. However, by using pronouns as clause initial elements the speaker sets up the expectation that something or someone will be contrasted with the referent of the pronoun. And indeed in the following clauses there is a different nominal or pronominal referent. So, in this case we have pronominalization setting up contrast through syntactic location in a clause. See Table 2 for a summary of results.

TABLE 2
Summary Table for Thematic Representation
in Background Paragraphs

Overt theme: Zero anaphora: Total
independent pronoun verb agreement

1. Paragraphs developed through contrast	27	1	= 28
<hr/>			
chi square = 22.32, df = 1, p<.01			
<hr/>			
2. Paragraphs not developed through contrast	20	46	= 66
<hr/>			
chi square = 9.47, df = 1, p<.01			

Thus far theme has been discussed in terms of narrative discontinuity features and in terms of its overt use as a starting point for clauses in paragraphs developed through contrast. In the following section the use of theme within quoted speech and in the loose event clauses that link scenes together will be examined. It is in these parts of the narrative that the speaker's choice of thematic reference clearly shows the realization of interpersonal goals in language. The next section demonstrates how independent pronouns are one member within a range of devices used to illustrate the narrator's attitude toward a situation.

6. Theme and Perspective

Some parts of the data do not fit into the previous framework. These overt uses of theme can be accounted for by the narrator's use of pronouns to show perspective. They appear in event clauses that are used to connect scenes, typically when the protagonist is travelling from one place to another, or in direct speech. There is a scale which indicates speaker's status. It ranges from complete separation/isolation represented through the pronoun *ja* 'I' to neutral attitude represented by the anaphoric zero pronoun. The following is a scale representing degrees of convergence/divergence:

Separateness

a. *ja*

'I' — used to show opposition of "I" vs "others"

b. *my*

'we' — used to show opposition of "we" vs "others"

Solidarity

c. *mysmy*

'we' + 3rd person pl verb ending — used to show integration within group, i.e., action as one team

Neutrality

d. *Ø anaphora* — used to show neutral attitude toward events

Within the realm of possible thematic reference, the narrator, depending upon the context, may use first person singular or plural marking. However, with each first person marking of 'I' or 'we' the speaker has a three-way choice. In the unmarked form, subject reference is affixed to the verb through verb agreement morphemes. In the marked form an independent pronoun is used in addition to the verb. Intermediate between the unmarked and marked forms exists a third choice. This occurs when the verbal affix indicating person is preposed and affixed to a sentence initial element. For example, the verbal first person affixes *m* for 'I' and *śmy* for 'we' may be affixed to sentence initial words such as *to* 'then' as in *to-śmy* or *jak* 'as' in *jak-eśmy* or to pronouns as in *ja* 'I' as in *ja-m* or *my* 'we' as in *mysmy*.

Depending on the text, marked forms convey various perspectives. However, in this text, the narrator uses the range of references to indicate her separateness from other characters in the story. One of the motifs running through the story is isolation. The narrator leaves home and family in search of a place beyond the invading army's reach. In her attempt to reach this haven she must travel through hostile territory. At certain points during the

journey she is accompanied by friends; most of the time, however, she is on her own. The scale of separateness, as mentioned, ranges from the use of the pronoun *ja* 'I' to show extreme isolation to zero anaphoric pronoun to show neutral perspective. The preposed verbal affix *śmy* is used in contexts where the narrator acts in unison as a group with her companions.

Below a few examples illustrate the use of this scale in the loose event clauses. The first example describes the narrator as she leaves home with her two companions. After describing the sight of a corpse along the road, the narrator uses a *myśmy* to indicate her group feeling as she walks in the company of her two friends. Thereafter the independent pronoun *my* is used to indicate what the group looked like as though seen from a bird's vantage point, "a trio". Then again, the narrator refers to the trio's walking in unison with the preposed verb suffix *myśmy*. Afterwards, a contrast is created between the hordes who travel on the same road and the girls with the isolating *my*. This image of the girls as a unique entity set against the others is summarized in the last line "and only a trio of girls walks along".

- | | |
|--|--|
| <p>(16) <i>leżał jeden (.5) który
miał kulę
w plecach,
tak leżał skulony,
i tak zginął.
(1) No i myśmy poszły dalej,
ten obraz..że to był początek
mojej drogi,
i my w trójce,
i myśmy wyszły,
i moc ludzi szło i wojsko,

i ulica znaczy gościniec
zalany,

i my idziemy,
i tylko trójka dziewcząt
idzie,</i></p> | <p>there lay a person (.5) who had
a bullet in his shoulders,
as he lay hunched over,
that's how he died.
(1) So we walked on,
that image..that it was the
beginning of my journey,
and we in a group of three,
and we walked along,
and many people walked
and the army,
and the street, that is the path
roadway was overflowing
with people),
and we walk,
and only a trio of girls walks,
idzie,</p> |
|--|--|

In example (17), the narrator describes how she travels by herself through a forest to reach her friends who are working on a collective farm:

- (17) *i ja sobie idę tym lasem.. sama tak piechotą, i Ø szłam i Ø szłam, powiedzieli mi tak, "prosta droga jest.. nic się nie bój, znaczy nie zablądzisz, od Krasnodaru będąesz szla tylko lasem prosto prosto, i dojdziesz do Timosiovki świnosollxozu, i tam są studenci ze lwowskiego uniwersitetu", dobra, bo ja byłam lęk przed samotnością ja byłam sama, ja nikogó nie mam, oprócz tego że nie Ø miałam pieniędzy, (.5) No i proszę ja ciebie w południe Ø przychodzę do tej Timosiovki (1.3) i mówiąc mówią tak, "dwa kilometrów stąd to oni dzisiaj pracują tam i tam, w polu jest grupa kilku studentów lwowskich." (2.2) Ø poszłam i Ø przyszłam,*
- and I walk by myself through the woods..alone..
yes on foot,
and I (\emptyset) walked and (\emptyset) walked,
they told me this,
"it's a straight road..
don't be afraid,
I mean you won't get lost,
from Krasnodar you will go
only through woods straight straight,
and you will come to Timosiovka
a pig solxoz,
and there are students
from Lwow University",
okay,
because I had a fear of
solitude,
I was alone,
I don't have anyone,
besides the fact that I (\emptyset)
didn't have any money,
(.5) So and listen
in the afternoon I (\emptyset) arrive
to this Timosiovka,
(1.3) and saying (they) say this,
"two kilometers from here they
today are working here and there,
in the field is a group a few
students from Lwow."
(2.2) I (\emptyset) went and I
(\emptyset) arrived,

In the above passage the pronoun *ja* 'I' is used at those points where isolation or individuation is focal: as the narrator sets out alone on her walk through the forest in loose event clauses and as she describes her fear of solitude in background non-contrast clauses. In the text zero anaphoric pronoun is used with verbs of locomotion where there is no emphasis on separateness. Out of 71 loose event clauses, 1% (1/71) show overt theme, 7% (5/71) show pronoun

and clitic (*myśmy*), and 92% (1/71) show zero anaphora.

The separateness scale also functions within quoted speech. Out of 16 references to herself in quotations, the narrator uses pronouns 94% (15/16) of the time. In the excerpt below the narrator describes an interrogation conducted by a Russian army officer after she is found speaking Polish on a train with only Russians on board. The pronoun *ja* 'I' shows the narrator's isolation and defensive attitude in a hostile environment.

- | | |
|----------------------------------|----------------------------------|
| (18) <i>i ja mówię,</i> | and I say, |
| “ <i>bo ja uciekłam,</i> | “because <i>I</i> escaped, |
| <i>ja nie chcialam żebym być</i> | <i>I</i> didn't want to be under |
| <i>u Hitlera,</i> | Hitler, |
| <i>ja jestem studentką,</i> | <i>I</i> am a student, |
| <i>i ja uciekłam”,</i> | and <i>I</i> escaped,” |
| <i>i mówię mu,</i> | and I say, |
| “ <i>ja wyszłam razem z</i> | “ <i>I</i> left together with |
| <i>Lwowskim</i> | |
| <i>Uniwersitetem”,</i> | Lwow University”, |
| <i>có było nieprawda,</i> | which wasn't true, |
| <i>ale ja mówię,</i> | but I say, |
| <i>“ja wyszłam”,</i> | “ <i>I</i> left”, |

In sum, the narrator makes use of a range of possibilities for first person reference to depict attitudes of separation and unity. See Table 3.

7. Conclusion

This study has shown that there are several predictions which we can make about the use of theme in an oral Polish narrative. The first prediction is that the preferred marking of continuous theme is anaphoric zero subject. The second is that theme marking will be overt under certain conditions. (a) Theme marking is overt when narrative discontinuities appear. These are scene or episode changes, introduction of direct speech, and change in action continuity in core event structures. (b) Theme marking is also overt when it functions as a method of development in backgrounded paragraphs of contrast. Finally, (c) theme marking is overt where narrator perspective shows degrees of separation and solidarity in loose event clauses and within quoted speech.

There are several principles of language in competition here. The textual principle of economy, to keep language from being overly redundant, is satisfied when thematic (participant) continuity is expressed through anaphoric

TABLE 3
Summary Table for Thematic Representation
in Loose Event Clauses and Within Quoted Speech

	overt theme: independent pronouns <i>ja</i> 'I'	Pronoun + preposed 1st person clitic <i>my-šmy</i> 'we + 1st p. pl'	zero anaphora: verb agreement Ø	Total
1. Loose event clauses	0	1	5	= 71
2. Within quoted speech	15	1	0	= 16

zero pronoun. This expression of thematic continuity through anaphoric zero pronoun had also been found to exist in Russian (Nichols 1984) and in a written Polish narrative (Mayewski 1975). But the principle of economy cannot explain all of the data. In the narrative, the rule that continuous theme is anaphoric zero pronoun is often violated because of other pragmatic factors.

The second principle competing here is the textual principle of expressivity which suggests that language makes overt potentially anaphoric reference in order to emphasize through unexpected patterns. That is, paragraphs of digression were often structured by a principle of organization using a particular lexical field as a method of development. As part of a lexical field, the overt use of pronouns in sentence initial position provides a framework of systematic repetition within successive clauses whereby a motif or idea can be illustrated through contrast.

The third principle competing here is the interpersonal principle of cooperation. The maxim of quantity is flaunted when marked forms are chosen to show speaker perspective. In the present narrative the overt use of theme in quoted speech and in event lines expresses separateness. Indeed, we see a scale ranging from overt use of theme to express total separation to zero anaphora where isolation is irrelevant.

To conclude, the three principles mentioned here compete for overt or anaphoric expression of theme. We have seen, thus, that looking at the grammatical expression of theme in discourse provides a way to study principles of discourse in narrative texts. In addition, examination of theme provides an interesting contrast between the written and spoken language and between planned and unplanned speech. This study shows that unplanned oral discourse may also be highly organized and that the reasons for its structure may be understood.

NOTES

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1) In Zarębina's (1973) study the distribution of parts of speech in the texts of the three varieties is as follows (in order of frequency) (42):

<i>General Written Polish</i>	<i>General Spoken Polish</i>	<i>Regional Polish</i>
Noun 30.73%	Verb 26.90%	Pronoun 23.64%
Verb 17.03%	Noun 20.49%	Verb 20.04%
Pronoun 12.90%	Pronoun 17.45%	Noun 15.70%

The remainder of the list includes prepositions, adjectives, conjunctions, adverbs, particles, and interjections.

2) These two narratives are comparable in many ways. Both narrators are middle class speakers of Standard Polish and from the same region of eastern Poland. Both narratives are about personal encounters during the Second World War. The stories thus show similar occasions for competing referents, contrasts, and personal viewpoints.

3) The notions of pragmatic principles of textual and interpersonal rhetoric are borrowed from Leech (1983: 16).

4) The linguistic background of the speaker is as follows. She is a speaker of Standard Polish. She grew up in Złoczów, a town near the city of Lwów, in eastern Poland. After the war she lived in Central Poland (Warsaw) until 1957. Since that time she has lived in Israel speaking predominantly Polish and using Hebrew in her professional life. The narrator also speaks Yiddish and Russian.

5) The terms ideational, interpersonal, and textual are originally taken from Halliday (1970) and are used to describe the functions of language with respect to grammar.

6) The terms foreground and background are used here in a general sense. Foreground refers to the event clauses that move a story's action forward. Background refers to all other clauses in the text.

7) More accurately, zero anaphora in this paper refers to a conflation of the first two points of (1) zero anaphora and (2) unstressed/bound pronouns or grammatical agreement found in Givón's topic accessibility hierarchy. For, technically, no finite verb in Polish has a true anaphoric subject as Korean, Japanese, or Mandarin can. This is because the subject is always identified through verb agreement clitics. As an illustration, below is one conjugation for present tense:

1.p.sg.	-m	1.p.pl.	-my
2.p.sg.	-sz	2.p.pl.	-cie
3.p.sg.	-Ø	3.p.pl.	-ją

with the verb *pytać* 'ask' the forms become:

1.p.sg.	pytam	1.p.pl.	pytamy
2.p.sg.	pytasz	2.p.pl.	pytacie
3.p.sg.	pyta	3.p.pl.	pytają

Hence, the use of a pronoun is redundant, and its infrequent use in the written language is not surprising.

8) The following conventions will be used in the examples cited in this paper. Anaphoric zero pronoun themes are marked by zero (\emptyset) in the Polish text. Although some of these passages also have other anaphoric zeros referring to entities, zeros are only marked where they pertain in each example. The English translations are equivalent to the Polish with regard to theme marking; however, where Polish uses an anaphoric zero theme, the English is also marked with an anaphoric zero theme, e.g., he (\emptyset). Overt theme or sub-themes are marked where pertinent in the Polish and English texts.

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ANAPHORA IN POPULAR WRITTEN ENGLISH NARRATIVES

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1. Introduction

Within the last ten years, work on discourse anaphora has blossomed in scope and depth. What had been a neglected area of linguistic behavior has become a source of interest to researchers in linguistics, psychology, and artificial intelligence. Anaphora in narratives has become an especially important area of research; in this study I would like first to review the highlights of the recent work on anaphora in narratives, explore the strengths and weaknesses of these approaches, and finally provide a broader and more satisfactory account of the anaphoric patterning in written narratives than has previously been presented.

2. Previous Work

Within linguistics, the major proposals concerning discourse anaphora in narratives have been Givón (1983), Clancy (1980), and Grimes (1978). Since Givón (1983) represents the more traditional view of anaphora across sentences, I will discuss it first.

Givón (1983) deals with anaphora in order to understand the linguistic coding of the concept *topic*. He proposes the Continuity Hypothesis, in which it is claimed that

The more disruptive, surprising, discontinuous or hard to process a topic is, the more *coding material* must be assigned to it (original emphasis, p. 17).

According to Givón, the factors which influence disruptive or discontinuous topics include:

1. Distance to last mention. "If a topic is definite and returns to the register after a long gap of absence, it is still difficult to process. The shorter is the

gap of absence, the easier is topic identification; so that a topic that was there in the preceding clause is by definition *easiest* to identify and file correctly" (original emphasis, p. 8).

2. Ambiguity from other referents. "If no other topics are present in the immediately preceding discourse environment...topic identification is *easiest*. The more other topics are present in the immediate register, the more *difficult* is the task of correct identification and filing of a topic..." (original emphasis, p. 8)
3. Availability of thematic information. "Thematic information available from the preceding discourse could help in topic identification — especially when other topics in the register may potentially interfere. Such information establishes *specific probabilities*...as to the topic identification within a particular clause and in a particular role" (original emphasis, p. 9)

The first two factors, distance and ambiguity, are the major foci of the studies in Givón (1983). The third factor is merely hinted at in the introduction and then neglected. Thus although Givón makes explicit mention of something that sounds slightly structural and hierarchical, the end result is a model that views anaphora as a function of distance and a rather vague notion of ambiguity. In an impressive collection of data from several unrelated languages, pronouns are shown to be used when the distance to the last mention of the referent is small (and there are no interfering referents), while full NP's are shown to be used when that distance is somewhat great (and/or if there are interfering referents).

What does such a model imply about text structure and the flow of attention through a text? From my reading of the claims in Givón (1983), the following analysis seems reasonable. If the degree of a referent's continuity with the preceding discourse is measured in clauses to most recent mention, then we can assume that continuity derives from the surface nature of the clauses, rather than their textual function, and that (presumably) all clauses are equal in their contribution to the measure of continuity (except perhaps relative clauses, which were excluded from the continuity counts). That is, whether a clause is an aside about a character, a source of evidence to support a claim, etc., is irrelevant to the count: all clauses have the value 1 for the purposes of measuring continuity. The model thus assumes that discourse is made up of an undifferentiated string of clauses which follow one another in time but do not form larger units that could perform communicative functions in relation to one another.¹ Attention must be equally flat, if all that really matters is distance, since there would be no need to indicate to the reader that something new is being started, or that something old is being closed off, or that some

interruption — after which the interrupted unit will be resumed — is about to occur. Text structure and attention flow must thus be flat and undifferentiated in this model of discourse.

My criticism of the continuity hypothesis thus rests not on the specific quantitative predictions made — clearly the gross claims of distance are borne out by the cross-linguistic counts — but on the model they presuppose and the accompanying roughness of the predictions.

While it must be acknowledged that much of the emphasis on distance and ambiguity in the continuity hypothesis arises out of a desire to provide quantitative evidence (and hierarchical text structure is hard to quantify), the overemphasis it produces on the linear nature of texts (and the encouragement it brings to such a view) needs to be recognized. It seems to me that at this point in the study of anaphora it may be wiser to proceed cautiously with a qualitative approach that incorporates a hierarchical structural view of texts to see if we can understand the basic mechanism of anaphora before we begin collecting rough quantitative evidence.²

Clancy (1980) provides a very rich and detailed look at anaphora in short spoken English and Japanese narratives. Although the notion of discourse structure is not fully integrated into the account (cognitive factors of distance and interference are prominent here, as in Givón (1983)), Clancy brings out the association between discourse units and full noun phrases, and notes that this is in some sense an unusual and optional use of anaphora:

In English speakers apparently feel that inexplicit reference [i.e., pronoun or zero anaphora] is still comprehensible after the passage of two clauses...or of one sentence...; Japanese speakers agree....In both languages at least 97 percent of all inexplicit references were made when no more than one other character had been mentioned. Yet as the exception to these trends reveal, time and interference cannot account for all referential choices. Therefore, in the following sections of this paper the content of the narratives will be examined in order to clarify how discourse structure may have influenced referential choice... (pp. 143-144)

The main discourse structures Clancy finds influencing referential choice are episode boundaries, wherein a new line of action starts, and world shifts, in which the speaker moves from one mode of talking to another (e.g., from digression to the plot line, or from film-viewer mode to story-teller mode). Both of these structure-types tend to be associated with use of full noun phrases.

Thus although Clancy does not provide a full account of the relationship between narrative structure and anaphoric patterning, there is a very strong

attempt here to move beyond treating narratives as strings of clauses and hence to move beyond treating anaphora as responsive only to linear notions of distance and interference.

Another fairly wide-spread approach to anaphora in narratives is associated with the Summer Institute of Linguistics, represented in, for example, Grimes (1978) and Levinsohn (1978). In this framework, anaphoric patterning in narratives is based on the global status of the characters; that is, anaphoric devices are distributed according to the centrality or peripherality of the referents. Certain anaphors are associated with central characters under certain conditions, while other anaphors are associated with minor characters, where the centrality of the character is defined either within the entire narrative or within some subpart of that narrative (e.g., an Episode). There is no mention here of distance, or ambiguity, and only minimal attention is paid to discourse structure; the relevant factor is the centrality of the character to the story.

While this approach may be valid for the languages and narratives examined in the studies mentioned, it does not seem to transfer well to popular written English narratives. Consider the following example, in which the villain of the book (Darth Vader) is referred to with both pronouns and a full noun phrase, as is a peripheral character (notice especially the pronouns referring to the peripheral character):

Vader did not waste words. He raised his hand, fingers outstretched, toward the officer's throat. Ineffably, the officer began to choke. *His* knees started buckling, *his* face turned ashen. (*Return of the Jedi*, p. 90)

In this passage, there is no particular device that is reserved for the central character and no device reserved for the minor character: both characters are referred to with full noun phrases and pronouns. Clearly, a different set of strategies is at work in this passage. It is the goal of the remainder of this study to describe these strategies in some detail.

3. Anaphoric Patterning in four Popular Written Narratives

I chose four fast-paced popular narratives as the sources of references for this study. These are:

1. *Alien*. Foster, Alan Dean. 1979.
2. *The Girl of the Sea of Cortez*. Benchley, Peter. 1982.
3. *Coma*. Cook, Robin. 1977.
4. *Return of the Jedi*. Kahn, James. 1983.

4. Anaphora in Written Narratives

It first came to my attention that the traditional “distance” theory of anaphora might not be accurate for stories when I started closely examining long written monologue narratives. In these texts, I found examples like the following, in which something like 11 clauses (depending on what one counts as a clause) separate the two mentions of a character, and yet the second mention is done with a pronoun:³

She took a deep breath and tested the firmness of her grasp on the wood. When Jobin had first taught her to swim, he had told her always to get in and out of the water quickly, for it was in the marginal moment — half in half out of the water — that a person was most vulnerable to shark attack: It was then that the person looked truly like a wounded fish; most of the body was out of the water so it appeared smaller, and what remained in the water (lower legs and feet) kicked erratically and made a commotion like a struggling animal.

She spun, grabbed the gunwale... (The Girl of the Sea of Cortez, p. 78)

In addition, I found that two mentions of a character could be separated by a mention of a character of the same gender and yet the second mention of the first character could still be done with a pronoun, contrary to the predictions made by Givón et al (1983) about ambiguity. A passage illustrating this phenomenon is shown below.

He <Obi Wan Kenobi> paused sadly and looked directly into Luke's eyes, as if he were asking for the boy's forgiveness. “My pride had terrible consequences for the galaxy.” Luke was entranced. That Obi-Wan’s hubris could have caused his father’s fall was horrible. Horrible because of what his father had needlessly become, horrible because Obi-Wan wasn’t perfect, wasn’t even a perfect Jedi, horrible because the dark side could strike so close to home, could turn such right so wrong. Darth Vader must yet have a spark of Anakin Skywalker deep inside. “There is still good in him,” he declared. (*Return of the Jedi*, pp. 63-64)

In this passage, two mentions of Luke are separated by references to Obi-Wan and Darth Vader (Anakin Skywalker is Darth Vader), and yet the last mention of Luke is done with a pronoun. Clearly, then, the anaphor here is responding not to the linear sequence of references, but to something else.

Moreover, contrary to the predictions made by the Continuity Hypothesis, I found references done with full NP’s when the referential distance (i.e., distance to most recent mention) was extremely small, as in the following passage:

The four flights up to her floor seemed longer than usual to Susan. She paused on several occasions, because of a combination of physical fatigue and mental effort.

Susan tried to remember if Bellows had said succinylcholine was among the drugs found in the locker... (*Coma*, p. 236)

In this passage, there is arguably no clause-gap between the underlined reference to Susan and the mention just preceding it, yet the last mention is done with a full NP. This piece of text thus runs counter to the “distance” theory of anaphora.

In working through these examples, then, it became apparent to me that distance was not in and of itself a factor in the determination of anaphora in narratives. Other factors having to do with the functional, hierarchical structure of narratives seemed to be much more influential. There isn’t room for a full account here, but some of the critical factors are discussed below.

5. The Basic Patterns

As much as possible, I have couched the statements of the anaphoric patterns in terms that are familiar from our vernacular descriptions of stories and events. Although a particular text model was used to analyze the narratives (a modified version of Rumelhart’s (1975) Story Grammar), because of limitations on space I have chosen to describe most of the patterns in a model-independent way, so that a full explanation of the model used would not be necessary. Where the Story Grammar notation is helpful, I have introduced just those aspects of it that are relevant to the immediate discussion. It should be kept in mind throughout this chapter that the statements about anaphora offered here are meant to be as brief and non-technical as possible. A full exploration of anaphora in written narratives still remains to be performed.

The basic pattern of anaphora in the written narratives I examined seems to be something like the following:

Temporarily putting aside the environment of two referents of the same gender (hereafter known as same-gender referents), it seems that a referent is pronominalizable until another character’s goals and actions are introduced, unless those goals and actions are interactive with the first character’s, that is, unless in the immediately projected text there is some confrontation or active interaction between the two characters. In other words, if another character begins planning and performing an action, and there is no immediately projected interaction between the two characters, then a subsequent mention of the first character will be done with a full NP.⁴

This basic pattern has several implications. First, it means that a long gap between mentions of a referent does not necessarily trigger the use of a full NP for the second mention; if the gap does not introduce another character's plans and actions, but is, rather, concerned with something off the event-line, for example, like describing the surrounding scenery or a general truth, then it will not "induce" the use of a full NP. Examples of this pattern are given below.⁵

She took a deep breath and tested the firmness of her grasp on the wood. When Jobim had first taught her to swim, he had told her always to get in and out of the water quickly, for it was in the marginal moment — half in, half out of the water — that a person was most vulnerable to shark attack: it was then that the person looked truly like a wounded fish; most of the body was out of the water so it appeared smaller, and what remained in the water (lower legs and feet) kicked erratically and made a commotion like a struggling animal.

She spun, grabbed the gunwale... (The girl of the Sea of Cortez, p. 78)

In this passage, the gap between mentions of the referent in question is not concerned with describing another character's current plans and actions; rather, it is taken up with an off-event-line aside about how one should behave under certain conditions. When the aside is completed, the event-line is resumed with a pronoun.

Another example of this phenomenon follows:

She reached B deck unopposed, her flamethrower held tightly in both hands. The food locker lay just ahead. There was an outside chance the alien had left someone behind, being unable to maneuver itself and two bodies through the narrow ducts. A chance that someone might still be alive.

She peered around the jamb... (Alien, p. 260)

Here again we have an off-event-line description after an action by the character in question. When the event-line is resumed, the reference is done with a pronoun.

Another example:

Luke had known the passing of old mentors before. It was helplessly sad; and inexorably, a part of his own growing. Is this what coming of age was, then? Watching beloved friends grow old and die? Gaining a new measure of strength or maturity from their powerful passages?

A great weight of hopelessness settled upon him... (Return of the Jedi, p. 61)

Once more, the event-line is interrupted, in this case in order to present some of the character's thoughts. When the event-line is resumed, the refer-

ence is done with a pronoun.

This pattern holds even if the off-event-line gap introduces a character of the same gender as the character in question. This variation of the phenomenon is illustrated by the following passage, in which a pronoun is used to refer to the event-line character in spite of references to other, same-gender, referents in the off-event-line gap:

He <Obi Wan Kenobi> paused sadly and looked directly into Luke's eyes, as if he were asking for the boy's forgiveness. "My pride had terrible consequences for the galaxy." Luke was entranced. That Obi-Wan's hubris could have caused his father's fall was horrible. Horrible because of what his father had needlessly become, horrible because Obi-Wan wasn't perfect, wasn't even a perfect Jedi, horrible because the dark side could strike so close to home, could turn such right so wrong. Darth Vader must yet have a spark of Anakin Skywalker deep inside. "There is still good in him," *he* declared. (*Return of the Jedi*, pp. 63-64)

The second implication of the basic pattern described above is that even if the material separating the references is not off-event-line, as long as it does not introduce the current actions of another character a pronoun can be used to refer to the first character. Examples of this use of pronoun are given below.

She felt her way down the ladder until she reached solid footing. Then she activated her lightbar. She was in a small maintenance chamber. The light picked out plastic crates, rarely used tools. It also fell on bones with shreds of flesh still attached. *Her* skin crawled as the light moved over fragments of clothing, dried blood, a ruined boot. (*Alien*, p. 261)

Her gaze rose to the rear-facing screen. A small point of light silently turned into a majestic, expanding fireball sending out tentacles of torn metal and shredded plastic. It faded, was followed by a much larger fireball as the refinery went up. Two billion tons of gas and vaporized machinery filled the cosmos, obscured *her* vision until it, too, began to fade. (*Alien*, p. 266)

She reached down with her hand and tried to squeeze the lower calf muscle, but it was too late. The muscle fibers had already balled into a knot the size of an orange. *She* rolled onto her back and used both hands to squeeze her leg. Kneading with her fingertips, she softened the knot and felt it begin to relax. Suddenly the knot dissolved and *she* thought the cramp was finished... (*The Girl of the Sea of Cortez*, pp. 172-173)

The third implication of the pattern formulated above is that the introduction of a second character (excluding same-gender referents for the time being) does not necessarily cause the use of a full NP to refer to the first

character. If the two characters are involved in a fast-paced confrontation or interaction, such as a fight, a chase, or a conversation, the mention of one does not cause the next mention of the other to be done with a full NP. Here again, a referential gap does not “induce” the use of a full NP. Examples of this pattern follow.

He took a step toward her, reached out helpfully. She bolted, ducking just beneath his clutching fingers. Then she was out in the corridor, sprinting for the bridge. She was too busy to scream for help, and she needed the wind.

There was no one on the bridge. Somehow she got around *him* again, throwing emergency switches as she ran. (*Alien*, p. 244)

In this passage a chase between two characters occurs, so we know that if one of the characters is mentioned, the other is not far behind. Thus in this case pronouns can be used in spite of intervening mentions of another character.

Another instance of this pattern is given below.

“Oh, Han!” she cried, and burst into tears once more. She buried herself in his embrace.

His anger turned slowly to confusion and dismay, as he found himself wrapping his arms around her, caressing her shoulders, comforting her. “I’m sorry,” he whispered into her hair. “I’m sorry.” He didn’t understand, not an iota — didn’t understand her, or himself, or his topsy-turvy feelings, or women, or the universe. All he knew was that he’d just been furious, and now he was affectionate, protective, tender. Made no sense.

“Please...just hold me,” *she* whispered. She didn’t want to talk. She just wanted to be held.

He just held her. (*Return of the Jedi*, p. 122)

Here a conversation between Han and Leia is carried out with both characters referred to using pronouns. Remember that the observation about anaphora in this case is that the introduction of another character and his/her plans and actions does not constitute a block to pronominalization *if* that character and the first character are engaged in a close interaction (so that the plans and goals of both characters are always relevant).

The fourth outcome of the basic pattern is that when a second character is introduced that is not interacting directly with the first, pronominalization seems to be blocked. In the following passage, for example, the second character is interacting directly with a group of sharks rather than with the first character (the first character is watching the human-shark interaction). A mention of the second character’s actions thus blocks pronominalization of the first character (Jobim is Paloma’s father):

Now the other two sharks were rising. They kept their distance from the larger one, seeming to defer to it, but they were growing bolder. And though they were definitely smaller than the other shark, relativity was the only comfort: Her [i.e., Paloma's] father was six feet tall, and each of these sharks was at least as long as he was tall.

Jobim held the half-needlefish out to the big shark and wiggled it with his fingertips. The circling pattern grew tighter. Now the shark was missing *Paloma* by only three or four feet as it swept by. (*The Girl of the Sea of Cortez*, p. 76)

In the following excerpt from *Alien*, we have a mention of Ripley ("reached her from outside") followed by an introduction of the goals and actions of the alien. Notice that in this case the alien is not interacting with Ripley, but with Jones the cat. We would thus expect, from the patterns presented above, that a next mention of Ripley would be done with a full NP; indeed, the second paragraph begins with a reference to Ripley, done with a full NP.

The locker was not airtight. A distinctive moaning reached her from outside. Distracted, the alien left the port to inspect the source of the strange noise. It bent, lifted the sealed catbox, causing Jones to howl more loudly.

Ripley knocked on the glass, trying to draw the creature's attention away from the helpless animal. (*Alien*, p. 267)

In the next passage, following a mention of Leia an interaction between two other characters (an Ewok and an enemy soldier) is initiated. After that confrontation, a mention of Leia is performed with a full NP. The observation here is that, in spite of the small gap between the two mentions of Leia, a full NP is warranted for the second mention because the intervening material introduces the actions of another character, and these actions are *not* interactive with Leia but with another, third, character.

Slowly she [i.e., Leia] swiveled, to find an Imperial scout standing over her, his weapon leveled at her head. He reached out his hand for the pistol she held.

"I'll take that," he ordered.

Without warning, a furry hand came out from under the log and jabbed the scout in the leg with a knife. The man howled in pain, began jumping about on one foot.

Leia dove for his fallen laser pistol. (*Return of the Jedi*, p. 95)

6. Demarcation of Narrative Units

The basic pattern established in section 1.5 does not cover all of the uses of anaphors in the narrative texts, however. In particular, under certain con-

ditions full NP's are used where pronouns would have been possible. In the following passage, for example, full NP's are used in a fast-paced confrontation (fight/chase) where we could have expected pronouns:

Susan herself was amazed at the effect and stepped into the amphitheater, watching D'Ambrosio's fall. She stood there for an instant, thinking that D'Ambrosio must be unconscious. But *the man* drew his knees up and pulled himself into a kneeling position. He looked up at *Susan* and managed a smile despite the intense pain of his broken rib.

"I like 'em...when they fight back," he grunted between clenched teeth.

Susan picked up the fire extinguisher and threw it as hard as she could at the kneeling figure. *D'ambrosio* tried to move... (*Coma* p. 241)

And in the next passage, full NP's are used to refer to one character, although no plans or actions of other characters have been introduced (the scene takes place in a hospital):

Susan found a concrete wall which she guessed housed the elevator shafts. Then she discovered that the corridor of the OR area had a dropped ceiling. Beyond the OR corridor, over what was probably part of central supply, *Susan* could see that the maze of pipes and ducts running through the ceiling space converged in what seemed a tangled vortex. *Susan* guessed that was the location of the central chase which housed all the piping and ducts coursing vertically in the building. (*Coma*, p. 234)

Another instance of the use of full NP instead of pronoun in a fast-paced confrontation scene is given below.

Spinning in the chair, her [i.e. Ripley's] heart missing a beat, she saw, not the creature, but a form and face now become equally alien to her.

Ash smiled slightly. There was no humor in that upturning of lips. "Command seems a bit too much for you to handle. But then, proper leadership is always difficult under these circumstances. I guess you can't be blamed."

Ripley slowly backed out of her chair, carefully keeping it between them. *Ash's* words might be conciliatory, even sympathetic. His actions were not. (*Alien*, p. 243)

I would like to argue that the key to this use of full NP in the narrative texts lies in the structural organization being displayed by the writer. Let us suppose, along with researchers in the Story Grammar paradigm, that stories basically concern the reactions, plans, and actions of different characters. In small stories we are often given what we might call background setting information, then an initiating event (a happening which causes a character to respond in some way), a reaction to that event on the part of a character, a plan to do something about the situation brought about by the initiating

event, and then a carrying out of that plan, with some final outcome of the action. It is, in a sense, a basic problem-solution structure, with the solution divided up into parts (reaction, plan, action). The basic pieces of a story, according to this view, are thus:

1. background information (e.g., setting)
2. initiating event
3. reaction
4. plan
5. action
6. outcome

And these cluster into higher-level units, the most common of which is the development structure: reaction, plan and action form a *development*. There are obviously other units which can occur in extended narratives, but for our purposes here, let us suppose that the major higher-level unit is the development structure.

Below I have given a passage which illustrates the development structure. The first paragraph describes the initiating event (Jones' yowling at something). The second paragraph presents Ripley's reaction to that initiating event and thus begins the development. The third paragraph gives two plans (the first of which is discarded) and starts the action piece.

She [Ripley] did not see the massive hand reaching out for her from the concealment of deep shadow. But Jones did. He yowled.

Ripley spun, found herself facing the creature. It had been in the shuttle all the time.

Her first thought was for the flamethrower. It lay on the deck next to the crouching alien. She hunted wildly for a place to retreat to. There was a small locker nearby. Its door had popped open from the shock of the expanding gas. She started to edge toward it. (*Alien*, pp. 266-267)

Let me now propose that many full NP's in narratives which occur where one could have expected pronouns are functioning to signal the hierarchical structure of the text; in other words, I would argue, full NP's are used to demarcate new narrative units. That is, full NP's can be shown to correlate with the beginnings of development structures, where the development structure is seen as the major recurring unit in narratives. In the passage from *Alien* immediately above, for example, a full NP is used to begin the development structure ("Ripley spun"). Additional examples of this correlation between full NP and the beginning of a development structure are given below.

But the man drew his knees up and pulled himself into a kneeling position. He looked at Susan and managed a smile despite the intense pain of his broken rib.

"I like 'em...when they fight back," he grunted between clenched teeth.

Susan picked up the fire extinguisher and threw it as hard as she could at the kneeling figure. (*Coma*, p. 241)

In this passage, the first slot of a development structure contains a full NP, even though the referent was mentioned approximately 3 clauses before (depending on what one counts as a clause). It is therefore clear that simple distance is not at issue here; in addition, the basic pattern established for two characters interacting seems to be superseded. The critical pattern to be noticed here is the correlation between the beginning of a narrative unit (the development structure) and the use of a full NP.

That did it for the Ewok. He jumped up, grabbed a four-foot-long spear, and held it defensively in her [i.e. Leia's] direction. Warily he circled, poking the pointed javelin at her, clearly more fearful than aggressive.

"Hey, cut that out," *Leia* brushed the weapon away with annoyance. (*Return of the Jedi*, p. 94)

Here, as in the preceding example, the first slot in a development structure contains a full NP, where, by measures of distance or the basic pattern demonstrated earlier, we could have expected a pronoun. I would like to argue that it is the demarcation of a new narrative unit which "produces" the full NP.

Another example of this association between a new narrative unit and full NP follows:

She shook her head and looked at the pirogue and at the horizon and at the softly rolling sea swells. She was in at least ten, maybe twenty, fathoms of water. Then what was she standing on? For, there was no question that she was standing on *something*. She drained water from her mask and put her face down and saw that the manta had come beneath her and had risen, like a balloon, until it rested just at her feet.

Did it want something? Was it injured again? *Paloma* took a breath and knelt on the manta's... (*The Girl of the Sea of Cortez*, p. 226)

Another instance:

She [Ripley] did not see the massive hand reaching out for her from the concealment of deep shadow. But Jones did. He yowled.

Ripley spun, found herself facing the creature. It had been in the shuttle all the time. (*Alien*, p. 267)

With this collection of examples, and the many others that could be

added to it, it seems clear that on top of the patterns for pronominalization I established above there tends to be an association between the beginning of a narrative unit (typically the first slot of a development structure) and the use of a full NP. I do not mean to suggest with this statement that all development units are started with full NP's; rather, this is a slot in which full NP's *can* occur even though we might have expected pronouns. In comparison *within* the boundaries of development units there tend *not* to be full NP's (assuming by other patterns described that pronouns are expected). Examples illustrating this predominance of pronouns *within* narrative unit boundaries are presented below (see Tomlin (this volume) for similar findings about anaphora and episode structure).

She stuck her head out into the engine room. It was still deserted. Smoke curled up around *her*, making her cough. *She* climbed out, kicked the disc back into place, leaving enough of a gap for air to reach the fire. The *she* strode resolutely toward the engine-room control cubicle. (*Alien*, p. 263)

Her mind evaluated every item and discarded it. And then, as *she* looked at the wood fibers, she saw beside them other fibers, closely woven though not as thick as the wood, and *she* had the answer: her dress. She could stuff her dress into the hole, and it would keep the water out. The fabric was already saturated with salt water, so no more could penetrate it. And packed tightly in a ball, the cloth fibers would bind and become nearly waterproof.

She peeled the sodden shift up over her head, then ducked under the pirogue and, from the inside, packed the cloth into the hole. It made a tight plug — nothing that could survive a pounding in a heavy sea, but secure enough for an easy paddle on calm water.

She ducked out again, hauled herself up onto the bottom and reached over and grabbed the far edge. (*The Girl of the Sea of Cortez*, p. 170)

Susan stared at the valve. *She* looked at the other gas lines coming up the chase. There were no similar valves on any of the other lines. With *her* finger she examined the valve. (*Coma* p. 235)

We find then that the initial slots of the relevant discourse units are associated with full NP's, while the non-initial slots of these units are associated with pronouns.

7. Same-gender referents

The core pattern for anaphora in the environment of same-gender referents in narratives can be roughly stated as follows:

If a character has been mentioned as participating in an event/action, then that person can subsequently be referred to with a pronoun, until another character of the same gender is mentioned participating in another

event/action. If two referents of the same gender are involved in the same action, then the grammatical subject of the clauses describing that action can be referred to in the next event-line mention with a pronoun. The other non-subject NP will have its referent indexed on the next event-line mention with a full NP.

Passages illustrating the use of a pronoun to refer to the last person of the appropriate gender involved in an action follow. Notice that in the sequence

X actionverb, Y actionverb, PRO

where X and Y are same-gender referents, the pronoun refers to Y, not X. A full NP must be used to perform a second reference to X.

Before Vader could gather his thoughts much further, though, Luke attacked again — much more aggressively. *He advance in a flurry of lunges...* (*Return of the Jedi*, p. 155)

He [i.e., Luke] took a step back, lowered his sword, relaxed, and tried to drive the hatred from his being. In that instant, Vader attacked. *He lunged half up the stairs...* (*Return on the Jedi*, p. 156)

Passages illustrating the use of a full NP to refer to a character other than the last one involved in an action follow.

When Vader moved to parry, Luke feinted and cut low. *Vader counter-parried...* (*Return of the Jedi*, p. 154)

She placed the transparent mask over Ripley's mouth and nose, opened the valve. *Ripley inhaled.* (*Alien*, p. 238)

We can thus see that if a character is involved alone in the current action, then in the next action it can be referred to with a pronoun; if, on the other hand, the next action involved another character of the same gender — without mention of the first character — it will be done with a full NP.

If two characters of the same gender are mentioned in the current action, however, the referent realized by the subject NP of the clause can be referenced using a pronoun in the next action; the other referent must be referenced using a full NP.

In the following same-gender examples, we have two characters of the same gender involved in the same action. In these instances, the person referred to by the subject NP is referenced with a pronoun in the next event-line mention, while the non-subject NP is referenced with a full NP.

Subject NP becomes pronoun:

Vader paced the area like a cat, seeking the boy; but he wouldn't enter the shadows of the overhang. (*Return of the Jedi*, p. 157)

Trembling, he stood above Vader, the point of his glowing blade at the Dark Lord's throat. *He* wanted to destroy this thing of Darkness, this thing that was once his father... (*Return of the Jedi*, p., 159)

Palpatine raised his spidery arms toward Luke: blinding white bolts of energy coruscated from *his* fingers... (*Return of the Jedi*, p. 160)

Lambert set one of the oxygen tanks down next to her friend. *She* placed the transparent mask over Ripley's mouth and nose... (*Alien*, p. 238)

In all of these examples, the referent realized by the subject NP in the first action is pronominalized in the next.

Non-Subject NP becomes full NP

When Luke pushed Vader back to break the clinch, *the Dark Lord*⁶ hit his head on an overhanging beam in the cramped space. (*Return of the Jedi*, pp. 158-159)

He bound the boy's blade with his own, but *Luke*⁷ disengaged... (*Return of the Jedi*, p. 156)

Jabba motioned 3PO to his side, then mumbled an order to the golden droid. *3PO*⁸ stepped up... (*Return of the Jedi*, p. 42)

In these passages, the referent realized by the non-subject NP in the first action is not pronominalized in the next action, being realized by a full NP.

8. Conclusion

In the preceding sections we have seen that a small number of patterns based on the structuring functions in narrative — such as event-line, development structures, plans and actions — describe a very large proportion of the anaphors in the narrative texts examined, including in the environment of two referents of the same gender. I have also shown, en route, that approaches which take a more linear view of narrative texts are less than effective in accounting for the anaphoric patterning displayed by the popular written narratives examined in this study. There is a reasonable conclusion to be drawn from this fact: if we are to understand the use of various linguistic devices in naturally-produced texts, we must accept as a major factor in such use the *structure* of those texts. One of the crucial tasks ahead of us, then, is the development of models of text structure which can be fruitfully used in the study of linguistic coding. A very simple model of narrative structure was utilized in the present study; future work in this area will demonstrate the value of richer, more complex models of a range of text-types.

NOTES

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- 1) Givón does mention units such as paragraph, section, chapter, etc., but makes no attempt to incorporate them into the body of the study.
- 2) The importance of hierarchical structure for anaphora has been demonstrated for non-narrative discourse by, among others, Grosz (1977), Reichman (1981), Fox (1984), and Linde (1979).
- 3) Throughout this chapter, the relevant anaphors in real examples are underlined.
- 4) The other character in this case does not have to be human. It could be some other sort of animate creature.
- 5) The *event-line* is what Hopper and Thompson (1980) have called the foregrounded portion of a narrative; that is, it is the temporally sequenced events/actions which occur. It thus does not include descriptions of places, internal monologues, statements of general truths, etc.
- 6) Vader is often called the Dark Lord.
- 7) "Luke" and "the boy" are coreferential.
- 8) 3PO is "the golden droid".

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BEYOND FOREGROUND AND BACKGROUND

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1. Introduction

There are two separate questions that one may wish to ponder regarding foreground and background in discourse. The first is a purely *functional* question:

“How valid is the binary foreground/background distinction?”

The second is a question about *coding*:

“How strong or consistent is the correlation between the presumed foreground/background functional distinction and some binary distinctions in syntax, say main/subordinate clause or some tense-aspect distinction?”

In this paper I will discuss primarily the first, functional question. I will raise as many problems that I see impinging upon the validity of this binary distinction, without necessarily suggesting that we scrap it altogether. I will then cite one particular series of studies, all leading to and including Violeta Ramsay’s paper [in this volume], to illustrate where some expansion of the foreground/background tradition might be useful. The paper will lead to, but not directly attempt to tackle, the second question about what the coding level may or may not be doing.

2. Problems with the binary functional distinction foreground/background

2.1. The dynamic nature of discourse grounding

The tradition of looking at text once it has been produced and transcribed, then making objective-looking determinations as to what portions are presupposed, shared, old information or background, and what portions are asserted, new information or foreground, is a *static* tradition in discourse studies. It construes the text from the outside as an objective entity, a finished

product. This is obviously one valid perspective, that of the investigator *qua* reader. But the production of the text, and the interaction during which it is produced, is a dynamic process. A proposition that is asserted ('foreground') at point *n* in the discourse becomes — in the absence of challenge from the hearer — a shared presupposition ('background') at point *n plus 1*. The determination of what is foreground and what is background in actual discourse must, then be relative to a *particular* point in the discourse, the *particular* frame. And the frame in discourse tends to shift, to be reassembled, to be re-framed.

2.2. The correlation between background, presupposition and old information

The connection between what we intuitively consider "background" and our only slightly less intuitive notions of "presupposition" and "old information" is considerably less than perfect. Let us consider a simple example to illustrate one aspect of this. As pointed out elsewhere (Givón, 1982a], restrictive relative clauses may modify both definite and indefinite nouns, as in:

- (1) a. The man *wearing a frilled dress* came into the room and..
- b. A man *wearing a frilled dress* came into the room and...

Now, while in (1a) above the RRC is presupposed by the speaker to be known to the hearer, no such presupposition could possibly obtain in (1b), where both 'a man' and the proposition underlying 'wearing a frilled dress' are not assumed to be known to the hearer. Nevertheless, there is some sense, however intuitive, in which the proposition in both RRCs in (1) is backgrounded. But that sense could not correspond to either "presupposition" or "old information".

In a similar vein, consider the two adverbial subordinate clauses:

- (2) a. *Because John left*, Mary left too.
- b. *If John leaves*, Mary will leave too.

The one in (2a) is presupposed and thus presumably not asserted. The one in (2b) is not presupposed. In fact, it has no truth value strictly speaking, being in the *irrealis* mode. Thus it is not asserted either. Still, there is some intuitive sense, expressed by linguists over the years [see eg. Haiman, 1978], in which both adverbial clauses in (2) are equally "background". But whatever that sense is, it could not correspond to the notion of "presupposition".

2.3. The correlation between foreground, sequentiality and main-line or “gist”

A better correlation, although still intuitive, can be seen between our notion of “foreground” and the semantic notion “information presented sequentially” or the pragmatic notion “main line (or ‘gist’) of the information”. Such correlations have been proposed by many in the past (eg. Givón, 1977; Hopper, 1979; Hopper and Thompson, 1980; Givón, 1982c; *inter alia*). But however intuitively appealing, this correlation remains problematic. To begin with, the coherence structure of many discourse types is not temporally determined, so that sequentiality — for text such as academic lectures — is not a useful tool in determining the “gist”. Finally, the notion of “foreground” and “gist” are not independent of each other, leastwise not in the context of our past discussions. Rather, they seem to define each other in a rather circular fashion. Our intuitive definitions of foreground — and thus also background — seem to again lead us onto a rather rocky terrain.

2.4. Binary vs. scalar pragmatic space

Morpho-syntax has a strong tendency to make all functions coded by it look discrete, and quite often binary. This is inherent in the nature of the coding instrument. Structure always discretizes function. As I will suggest later on, this facet of structure may indeed point out to a process of selectivity, by which only a few — often only two — functional “peaks” along a continuum become strongly coded, thus often producing the illusion that the semantic or pragmatic dimension itself is discrete and binary. In many areas of discourse pragmatics, however, the evidence strongly suggests that the underlying dimension is itself *non-discrete*, and even its associated code is *n-ary* rather than binary. A conspicuous coding scale of this kind is that of topic continuity/predictability [Givón, ed., 1983], which scales noun-marking devices in a fashion that is highly predictable cross-linguistically. Thus, consider the following widely attested scale:

- (3) *MOST PREDICTABLE TOPIC*
- a. zero anaphora
 - b. unstressed/clitic pronouns
 - c. stressed/independent pronouns
 - d. definite nouns
 - e. modified definite nouns
- LEAST PREDICTABLE TOPIC*

In most languages this scale is much richer and has many more points, involving word-order and other syntactic devices. The functional, psychological dimension involved here concerns *how* accessible the topic is to the hearer, given distance from prior mention in discourse, degree of referential interference from other referents, amount of semantic redundancy available in the proposition and amount of thematic redundancy available in the discourse. This scale of topic predictability is indeed one of the two major components of an empirically-defined notion of “topicality”, the *anaphoric* or backward-scanning component. The topic predictability scale applies to nominal participants, but there are reasons to assume that a similar scale may apply to *propositions*, in terms of their “thematicity”, “foregroundedness” etc. Let us examine a few simple examples suggesting such scales.

While local presupposition is defined as a discrete, binary distinction, pragmatic presupposition may be n-ary and scalar, determined perhaps by the *strength* of the speaker's belief as to *how* accessible some proposition is in the hearer's mind. Along such a scale, construction types may be ranked along *at least* three major point (Givón, 1982a):

- (4) a. *Most presuppositional*: WH-questions, cleft/focus constructions, restrictive relative clauses, some verb complements

b. *Intermediate*: negatives, if-clauses yes/no questions

c. *Least presuppositional*: main-declarative-affirmative (asserted) clauses

Next, it can be shown that the three major speech-acts, declarative, imperative and interrogative, allow finer scalar gradations to fill the functional space between them. As a simple example consider the following gradation between declaratives and yes/no questions (for further detail see Givón, 1982a, 1984a; Tsuchihashi, 1983; Bolinger, 1975):

- (5) a. John is here. [prototype declarative]
b. John is here, isn't he?
c. John isn't here, is he?
d. John is here?
e. You think John is here?
f. Is John here? [prototype interrogative]

Such a continuum is probably founded upon non-discrete psychological dimensions such as (Givón, 1982b, 1984a):

- (6) a. The speaker's subjective certainty
 b. Evidentiary support available to the speaker
 c. Strength of the speaker's wish to seek confirmation from the hearer
 d. Strength of the speaker's willingness to tolerate challenge from the hearer
 e. Status, power and affect relations between speaker and hearer

Next, consider the scalar nature of inter-clausal conjunctive particles, where a graded continuum exists with an iconic relation between the size of the interruption between two clauses and the degree of *discourse discontinuity* between them. Now, here the clauses involved are sequentially delivered main-declarative-asserted clauses, i.e. our prototypical "foreground". Are they then scaled as to the *degree* of their "foregroundness"? This phenomenon is very wide-spread cross linguistically, and also involves the system of pauses and written punctuation marks. To illustrate it, consider the following examples from Ute [Givón, 1980, Ch. 17]:

- (7) a. O (...he opened the door, *O* stepped in, *O* paused and ..)
 b. *x-ura* (John entered the room, *then* he stopped...)
 c. '-vway-*ax* (...He finished; *so then* he...)
 d. '*u-vway-ax-ura* (...He finished. *So well, then* she...)
 e. '*u-vway-ax-ura-uru* (...He finished. *So well, it was then that* she...)
 f. '*u-vway-ax-unuv-ura-uru* (...*So it was then, later on, that* she...)

The scale in (7) in Ute, English and other languages, involves gradual increase in the degree of discontinuity, unpredictability or surprise at that point in the discourse. And the unpredictability may arise from any of the factors which together make the tapestry of discourse coherence (or their combinations):

- (8) a. Topics-participants continuity
 b. Temporal continuity
 c. Spatial continuity
 d. Action or theme continuity

In sum, then, it is not yet clear that we are justified in assuming that a discrete, binary distinction of foreground/background will remain useful for characterizing discourse coherence, once we have become more intimately acquainted with the facts and their subtleties.

2.5. Anaphoric vs. cataphoric grounding

As should have been made clear by now, the notion of “grounding” — even if we can justify, ultimately, its discreteness and binarity — is really a composite of two separate psycho-communicative processes. The first one is essentially *anaphoric*, involving grounding of a particular point in the discourse vis-a-vis the *preceding* discourse background; or, to be more precise, grounding vis-a-vis what the speaker can assume about *shared knowledge* with the hearer. Here we find our traditional correlation of “background” with “presupposition”, “old information” or “topic”. The second is a *cataphoric* process, involving clues the speaker gives the hearer at a particular point in the discourse as to how to ground it vis-a-vis the *following* discourse, particularly in terms of thematic/topical *importance*. Here we find our traditional correlation of “foreground” with the “gist” of the information.

The differentiation between anaphoric and cataphoric orientation — or grounding — in discourse is very well known to us from the grammar of nominal topics ('referents'). Thus, for example, definite articles, unstressed anaphoric pronouns and zero anaphora are all primarily *anaphoric* devices. On the other hand, indefinite articles are primarily *cataphoric* devices, alerting the hearer as to what to expect in the subsequent discourse. Many topic-marking devices, however, perform a specific mix of anaphoric and cataphoric grounding functions. For example, assigning an NP to the *subject* clausal position involves both anaphoric continuity and cataphoric persistence. On the other hand, devices such as subject *L-dislocation* or subject *stressed/independent pronouns* tend to signal anaphoric *dis-continuity* but cataphoric persistence or importance. Finally, in Ute the use of clitic pronouns/agreement, as contrasted with zero anaphors, tends to signal — for subjects — anaphoric continuity but cataphoric *dis-continuity*. That is, they tend to be used at the end of equi-topic thematic paragraphs (for many details supporting this discussion see Givón, ed., 1983).

So far we have considered only examples from the grammar of *referential* coherence or the grounding of nominal topics. But similar examples can be cited from the grammar of *thematic* coherence. For example, in Biblical Hebrew (Givón, 1977) the perfect aspect tends to be used at the opening of new thematic paragraphs, where not only referents but also themes change. On the other hand, a special tense-aspect in Ute — the *-puay-agá* suffixal combination (Givón, 1980, Ch. 4) — signals the end of a large thematic episode and tags the clause marked by it as a “recapitulation” or “moral” of the story. As we shall see further below, other devices in discourse are used

for such combination of grounding, vis-a-vis both the preceding and following discourse. Our notion of grounding thus requires further elaboration and clarification.

3. Grounding and syntactic order

In this section I will discuss the relation between grounding and syntactic order, reviewing some of the recent literature and leading toward a discussion of Ramsay's paper [in this volume]. In an ingenuous paper, Haiman (1978) presented massive grammatical evidence to suggest that conditionals ('IF-clauses') are "topics". His notion of "topic" is closely related to "pragmatic presupposition" or "background old information", without defining these directly as criteria. Haiman, further, did not differentiate between preposed and postposed conditionals, perhaps because the impetus — and much of the data — for his study came from a clause-chaining New Guinea language which does not allow the postponing of adverbial clauses.

My own early foray into this subject came in Givón (1982a), where I suggested, based on constructed examples with minimal context, that adverbial clauses are "topical" or "pragmatically presupposed" only when they *precede* the main clause. But they are "focus" or "asserted information" when they follow the main clause. The examples I cited there were of the type:

- (9) a. *Context:* Under what conditions *would you do it?* [M-clause topic]
- b. *Response:* I'll do it if he leaves. [Postposed ADV-clause]
- c. *Context:* What will you do *if he leaves?* [ADV-clause topic]
- d. *Response:* If he leaves, I'll follow him. [Preposed ADV-clause]

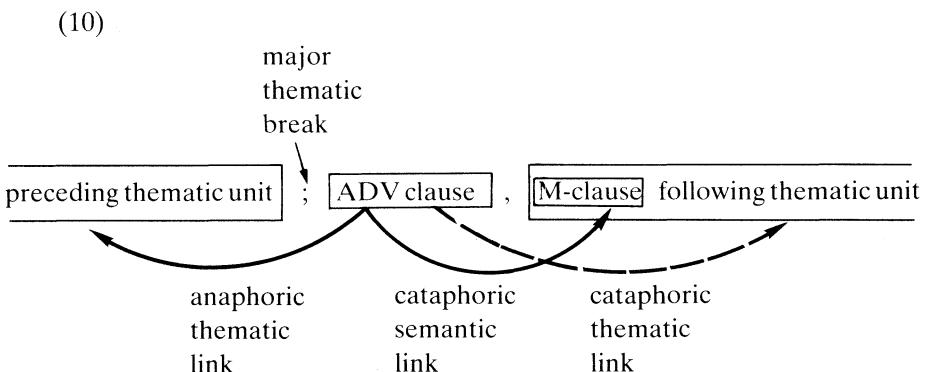
This followed the classical dogma of our times since the Prague school, namely that topical material preceded and focal/asserted material follows in natural pragmatically-determined order. And since the presumed results of this rather cursive investigation conformed with the received wisdom, the matter rested there briefly while I was casting around for a more rigorous empirical paradigm to test these 'results'.

Two studies made it clear to me that I was probably on the wrong track. First, Thompson's [1985] paper on preposed and postposed purpose clauses, which was read at the WECOL Conference in Eugene in 1983. The facts emerging from Thompson's study, even in a preliminary fashion, suggested that our notions of "topic" and "foregrounding/background", at least as

applied to adverbial clauses, must be radically revised, if not wholly discarded. The following comprises my own interpretation of Thompson's findings, and is not necessarily stated explicitly in her paper:

- (i) Preposed P-clauses depend more, for their interpretation, on the *preceding* thematic context — a *wide chunk* of it. On the other hand, postposed P-clause depend for their interpretation primarily on the immediately-preceding main clause;
- (ii) The thematic link of preposed P-clauses is characteristically wider, more *abstract* and plugs into higher thematic nodes. On the other hand, the thematic link of postposed P-clauses is more concrete, most commonly referring to the motivation of the participant(s) mentioned in the directly preceding main clause;
- (iii) Preposed P-clauses are more likely to appear at *major thematic breaks* in the discourse. They thus tend to connect or ground the subsequent thematic unit vis-a-vis the preceding one. In terms of our earlier discussion, they thus function as a *combination* of anaphoric and cataphoric *grounding* device. On the other hand, postposed P-clauses are more likely to appear in the *middle* of thematic units, and are much less likely to function as a grounding or "re-orientation" device;
- (iv) The anaphoric connection of preposed P-clauses is primarily *thematic*. Their cataphoric connection to the main clause itself is primarily *semantic*, although this does not exclude a parallel thematic grounding function vis-a-vis the subsequent discourse.

These tentative conclusions concerning pre-posed P-clauses may be diagrammed as follows:



It thus seems that word order has a powerful effect on the way some subordinate clauses are used in grounding — or re-orientation — in discourse. But even Thompson's preliminary results suggest that this function may not be construed in the simple, binary terms of foreground/background. And as is made clear in Ramsay's paper [this volume], the phenomenon applies to other types of adverbial clauses as well:

Another strand of research pertains to the topic continuity studies, as related to pragmatically-controlled word-order variation. An overview of these results, starting from Givón [1977] and culminating in Givón [ed., 1983] suggests the following general principle, applicable across a great variety of languages and language families:

- (11) “More predictable/continuous topic NPs *follow* the verb;
less predictable/continuous topic NPs *precede* the verb”.

Virtually the same conclusions are outlined in Mithun [this volume] with respect to Iroquois word-order flexibility. And it is clear that the factors affecting the use of word-order flexibility to code relative topic predictability are the same ones discussed in relation to the quantity scale of topic continuity/predictability, (see (3), section 2.3., above). All this leads one to suspect that the results reported by Thompson (1985) and Ramsay (this volume) involve a similar principle of ordering, namely that *pre*-posed adverbial clauses are used in environments of greater thematic *dis*-continuity, and *post*-posed ones in environments of greater thematic *continuity* in the discourse.

4. Ramsay's study of IF- and WHEN-clauses

The initial hypothesis underlying Ramsay's study has two parts to it, one methodological and general, the other empirical and specific:

- (a) *General*: It will be unlikely that human language will use same coding device — in this case word-order variation — to code two totally separate functional processes, one for the relative *topicality* of NPs, the other for the relative *grounding* status of clauses.
- (b) *Specific* Preposed ADV-clauses code discourse contexts of lower *thematic* continuity, just like pre-verbal NPs code discourse contexts of lower *referential* continuity.

Our general hypothesis (a) is merely a reiteration of the validity of *iconicity*

in our language code. Our specific hypothesis (b) is the one for which Ramsey has attempted to devise operationalized discourse measurements, in order to test its empirical validity. Ramsay's operationalized hypothesis may be summarized as follows:

(i) *Referential continuity*

"Preposed ADV-clauses will exhibit *lower* referential continuity vis-a-vis their (following) M-clauses than would post-posed ADV-clauses. Further, preposed ADV-clauses will exhibit *higher* referential continuity with the preceding discourse — here excluding the M-clause — than would postposed ADV-clauses. Finally, preposed ADV-clauses will exhibit *higher* referential continuity with the preceding discourse than would their M-clauses".

(ii) *Thematic continuity*

"Preposed ADV-clauses will exhibit their discourse coherence — or continuity — vis-a-vis the preceding discourse in higher, more abstract and wider-scoped *thematic* terms. Postposed ADV-clauses, on the other hand, will exhibit their coherence/continuity vis-a-vis the preceding discourse in lower, more concrete and narrower-scoped *semantic* or *referential* terms".

(iii) *Discourse juncture*

"Preposed ADV-clauses will tend to appear at discourse juncture which are more *major*, in terms of disruption/break in

(a) Referential continuity

(b) Temporal continuity

(c) Spatial continuity

(d) Sequential action continuity

(e) Thematic continuity".

The challenge of quantified discourse work is, here as elsewhere, the development of discourse measurements that would *operationalize* specific hypotheses as the one summarized above. Like elsewhere, doing science in linguistics is learning to operationalize one's intuition, regardless what the source of that intuition is to begin with.

5. Conclusions

5.1. At the functional level

While my musings above were aimed at shaking our faith in the validity of the discrete, binary distinction foreground/background, they were

not intended to suggest that the entire approach should be scrapped. There are, to my thinking, two reasons for remaining cautious and tentative about our ultimate conclusions in this respect. The first is historical in nature, weighing the utility of theoretical distinctions we propose in terms of the slow, laborious progression of our science. I will express it as the following observation:

- (12) “Like all discrete, binary distinctions we have constructed in the past, the foreground/background distinction is *both* useful and dangerous. It is useful in carrying us the first step toward a function-based definition of an important strand in the thematic coherence of discourse. It is dangerous if we wed ourselves to it rigidly and do not eventually trade it in for more elaborate, more specific, less circular and empirically better grounded notions”.

5.2. At an intermediate level between function and structure

It is hardly an accident that our structural code *discretizes* and in general *reduces* the number of non-discrete and (potentially) infinite functional dimensions. While the psycho-cognitive dimensions which underly semantics and pragmatics may indeed be scalar and non-discrete, the imperatives of processing within finite time require discretization and reduction along any functional-cognitive continuum. Such reduction and discretization — up to *binarization* — must proceed according to which functions are more *important* or urgent, and which ones are secondary and less urgent. There might therefore be some cogent reasons why, in spite of all I said in section 2., above, there is still some room left for the binary distinction of foreground/background. But such a distinction must be grounded more firmly than before in non-circular, empirical studies.

5.3. At the coding level

We have taken for granted for too long now that there must be a strong correlation between *main-finite clause* syntax and the foregrounding function in discourse. In the main, our faith in this correlation hinged primarily on Indo-European facts of grammar, and relatively little on cross-linguistics studies of matching grammar with discourse. As a result, the “universals” we have come up with in our earlier methodology (see for example Givón, 1979, Ch. 2; Hopper, 1979; *inter alia*) tend to characterize, at best, some levels, genres or language families, rather than present a general and cohe-

rent picture of human language. In the area of empirical functional studies, Tomlin's (1985) recent work suggests that the correlation between subordinate and backgrounding in English, with the latter defined in terms of (cataphoric) informational *importance* (rather than anaphoric informational *novelty*), is both valid and highly problematic. In the area of grammatical studies, we have the major phenomenon of *clause-chaining* discourse, which seems to go against the grain of our earlier Euro-centric assumptions. It is only by wedding the two methodologies — cross-language comparison and function-based empirical studies of text — that we may hope to some day resolve both ends of our semiotic equation — and thus the equation itself.

NOTE

The other, *Cataphoric* component, scales the degrees of topic *importance*, often measured in terms of *persistence/frequency* in discourse. See discussion further below. There are probably many finer sub-gradation within each of the three. Tsuchihashi (1983) suggests that in Japanese the same continuum is coded by about 15 discrete verb-final particles.

Some of the relevant studies involve Biblical Hebrew (Givón, 1977, 1983 ed., Fox, 1983), Ute (Givón, ed., 1983), Spanish (Bentivoglio, 1983), Colloquial English (Givón, 1983 ed.). Pidgin English (Givón, 1984c), Tagalog (Fox, 1984), Indonesian (Rafferty, 1984 as well as in this volume; Verhaar, 1984), Athabascan (Dryer, 1982), Coos (Dryer, 1983), Papago (Payne, 1984), and the list is growing, to judge from Mithun's paper (in this volume).

For a general discussion of iconicity in syntax, see Haiman [ed., 1985]. An indirect empirical corroboration of both our general and specific hypotheses may already be found in Tomlin's paper [in this volume], where it is shown that devices used for coding referential ('topic-participant') continuity are also used — with exactly the same directionality — to code thematic continuity. Similar observations were also made in Givón (1977, 1983 ed.).

As in, for example, Chafe (ed., 1980) or Givón (ed., 1983, 1985).

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THE USE OF PITCH PHENOMENA IN THE STRUCTURING OF STORIES

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1. Introduction

In recent years, the concepts of foregrounding and backgrounding have been employed by linguists in effort to characterize the use of grammatical structures in discourse, particularly in narrative. Influential examples of such work are Hopper (1979) and Givón (1982) on aspect morphology, and Hopper and Thompson (1980) on transitivity. In much of this literature, the grammatical properties of events are contrasted with the grammatical properties of non-events. "Sequential clauses", "event clauses", "story line", or "foregrounding" is opposed to the out-of-sequence, the other-than-event phenomena such as scene-setting and evaluation, or the "backgrounding" of material in the narrative. Although it is preferable to think of these properties in relative rather than binary terms (that is, as information in relative relief rather than as "foregrounded or "backgrounded") these linguists have shown clearly that languages reflect event/non-event or sequence/non-sequence in their grammars.

While sequence is inherent in narrative, it is also true that the sequential aspects of a given narrative can be more or less important to the story: sometimes comprising little of the narrative's content, the actual event sequence may also be unreflective of the storyteller's purpose. The non-narrative segments — which create conditions of time and place, explain, build motivation, evaluate, or have particular introductory or concluding purposes — perform functions which do not merely fill in extra information, but give the story its value, making it worth telling and attending to.

In treating "foreground" and "background" in *oral* narratives, some further consideration of these terms may be in order. Information is made more or less prominent largely through prosody: what constitutes prosodic

“foregrounding” and “backgrounding” is vital to the structure of the story and to the storyteller’s purpose. On examination of oral narratives in terms of their prosodic characteristics, it is clear that *event*, commonly seen as “foreground”, does not necessarily coincide with prosodic prominence, and *non-event* similarly lacks coincidence with “background”.

It is the view presented here that the storyteller’s use of prosody plays a central part in his or her structuring of the narrative. The purpose of this paper is to look at some details of pitch structure, showing how they integrate into the event structure of the narrative.

It is understood that complex prosodic interactions take place simultaneously in the stream of speech, and that it is somewhat deceptive to isolate pitch from attendant features, particularly the important features of tempo and loudness. However, pitch — encompassing tone (pitch direction) and pitch range — is central to the complex of features called “intonation” (see Crystal, 1969: ch. 5 and 203-4). Pitch defines the basic auditory unit of analysis used here. This paper will be limited to the characteristics of pitch changes in event-reporting versus non-event-reporting segments of narratives, but within this limitation lies the most vital prosodic information.

2. Definitions

The prosodic terminology used here is borrowed from Crystal, 1969. The system of contrasts is simplified for the present purpose, although not substantively changed. The 1969 volume must be consulted for detailed definition, motivation and discussion of the concepts and terms.

The primary parameters of prosody are pitch, loudness and duration — features having the physical counterparts of fundamental frequency, amplitude, and time, respectively. Pitch is the auditory attribute in terms of which sounds may be ordered on a scale from high to low. The *relative* aspect of pitch change, the degree and direction of the pitch level in relation to other significant points in the pitch contour, is the important aspect of pitch. *Tone* is the direction of pitch movement within the most prominent syllable of a *tone unit*. The tone unit, the basic auditory unit of spontaneous speech, is comprised of one obligatory peak of prominence known as the *nucleus* of the unit, and three other optional parts. The nucleus of the unit usually falls on the most important lexical item in the unit, and carries a glide, usually up or down. The presence of the nucleus accounts for the intuition that a tone unit is complete: if there is no nucleus, the auditory effect is that of being cut off, of non-completion. The three optional units are: (1) the *head* of the unit,

referring to the stressed syllable of onset, (2) the *prehead*, referring to any unstressed syllables preceding the head, and (3) the *tail*, an unspecified number of stressed or unstressed syllables following the nucleus in an unbroken series until the end of the unit. A prominent syllable may move in the same direction as the preceding nuclear tone; such a phenomenon is called *tonal subordination*.

Tone unit structure is thus represented:

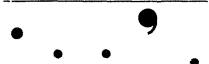
(prehead) (head) NUCLEUS (tail)

Tone designations describe the direction of pitch movement, and here we will use a simplified system to discriminate the direction of the pitch glide: falling (transcribed with ` over the vowel of the syllable), rising (//), rising-falling (^), falling-rising (‘), and level tone (-).

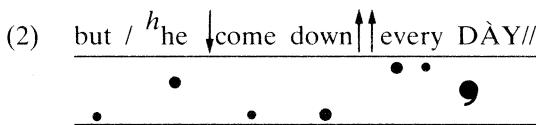
Pitch-range describes the distance between pitch levels of adjacent syllables. Crystal claims that pitch-range analysis necessitates isolating the range distinctions by hypothesizing a pitch constant for any speaker. This constant is taken to be the first prominent syllable, the onset syllable, of a tone unit. For any speaker, the onset syllable is articulated around a stable pitch level for the majority of this tone units. A speaker will occasionally begin a tone unit at a distinctly higher or lower point to achieve a particular effect, such as when expressing contrast (higher) or parenthetical material (lower). Here such distinct points will be marked *l* for *low* and *h* for *high* onset.

Syllables after the onset syllable usually descend slightly before the nucleus. If they are markedly lower, this is called a *drop*, and is indicated with a (↓) preceding the syllable. Those which are heard at the same level are marked (→). Those which are markedly higher (called a *rise*) are marked (↑). Both drops and rises may be extreme, and such features are marked (↓↓) and (↑↑), respectively.

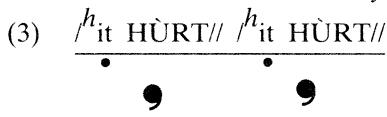
The following examples illustrate this notation. The first is an unmarked tone unit. (The relative pitch height is shown with dot notation, and three types of syllable are designated by dot size: no stress (•), stress (●), and primary stress (●●).)

(1) /i took a TÀXi//


(Note that nuclear movement of pitch is shown in the dot notation with a tail on the dot in the direction of the glide.)

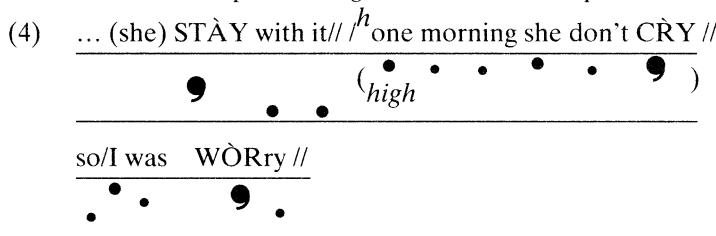


In (2) the tone unit is meant to describe an unusual circumstance. The onset is high and followed by dropped unstressed syllable. There is an extra-high raised tone before the nuclear syllable.

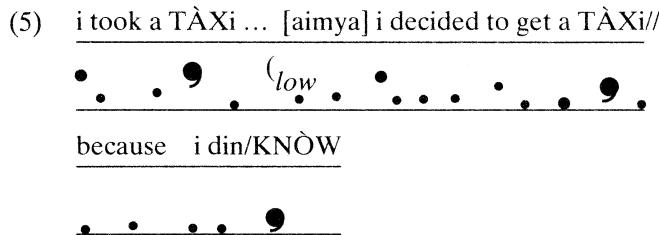


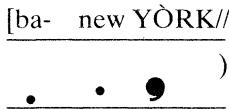
In (3) the prenuclear syllable is raised high and the nuclear syllable is a low, falling one. This is an emphatic prenuclear syllable.

A stretch of speech may be articulated at a lower or higher pitch level than normal, the extent of the contrast being relative. This step up or down is held over the stretch, contrasting with the preceding and following pitch level. The contrasting stretch of speech is marked with parentheses, and noted below the transcription as *high* or *low*. For example:



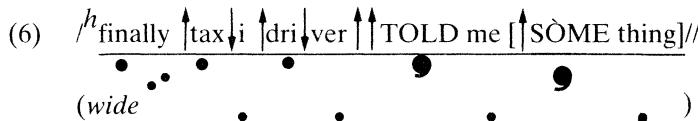
The first tone unit is the end of a sequence describing the participant's habitual activity. The high tone unit begins the temporal sequence of the story with an unusual circumstance. The pitch is very high over the second tone unit: it not only sets up the action sequence, ushering in a new scene, but also describes an unusual circumstance vital to that which follows.



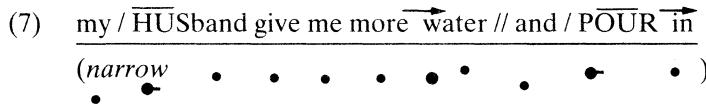


The stretch in (5), marked *low*, is an aside.

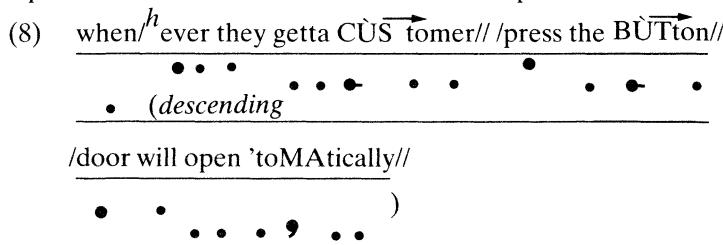
Crystal uses the terms *narrow* and *wide* to refer to the range of each pitch glide. He gives a detailed analysis (1969: ch. 5) of the types of possible glides. We will employ the terms *narrow* and *wide* somewhat more loosely, though in the same general sense. Width in pitch range is seen here, as in Crystal, in relation to the immediate adjacent syllables. If a stretch of syllables employs markers of height, rises and drops adjacently, we will call these stretches *wide* as in



If the strength is notably flatter in pitch than normal, it will be designated *narrow* in parentheses:



The terms *ascending* and *descending* refer to a gradual ascent or descent in pitch over a series of tone units. In this situation, the relevant tone units are put in parentheses and labeled below the transcription:



Within the tone and pitch-range system there may be co-occurrences; a common one is *low* and *narrow*, as in an aside.

2. Tone Units in Discourse

Tone units, as the fundamental auditory units of speech, exist at the base of a hierarchy of units, one which Chafe (this volume) defines cognitively.

Chafe also identifies 'sentence' as a *rhetorical* unit of speech, defined by sentence-falling pitch. Chafe offers no further prosodic specification of this unit; however, the falling pitch as characteristic of a larger division of discourse, beyond the tone unit and clause, is usually clearly identifiable in these data. Identifying this unit as a rhetorical one, a unit of the speaker's planned presentation, seems intuitively correct, and important for understanding how the speaker structures his narrative. Although this analysis will be based on the tone unit rather than the sentence, it is important to note that tone and pitch-range contrasts exist at once on the prosodic, rhetorical, and other levels. For example, (8) above, illustrating descending pitch, constitutes one sentence. It is not only the final fall, but also the pattern of descent, that frames the unit.

3. Research Methodology

Hypothesis

The tone units carrying the non-event portions of the narrative will exhibit greater tone and pitch-range variation than those reporting events.

Data and Subjects

The data are narratives extracted from informal conversations between Japanese speaking in English and a non-Japanese-speaking interlocutor/researcher. The three Japanese (two male and one female) are contact learners of English: that is, they have not studied English in school, but have picked it up through their experience of living in the US. All Subjects are middle-aged, all but one having lived in the US for over 20 years. The setting was informal. The interlocutors were casually acquainted and the conversations took place either in the home of the subject or that of the researcher.

The subjects were all willing storytellers, and each produced thousands of narrative clauses in the two to six hours of tape per subject. However, only a small portion of these data form the basis for this study, first because only short, complete narratives were used, and second, because the time demanded for transcription and analysis was considerable. For this study, about 250 tone units were analyzed per speaker. These consisted of several short, complete narratives, examples of which will be seen below.

A Note on the Use of Second Language Data

These data are part of a larger project concerning narratives in second language. If the aim were to detail conventional patterns of English prosody in narrative, clearly the data would be inappropriate. However, the aim is to

show how the story is built prosodically, and these stories contain all the necessary elements for this task. For each speaker in this study, all of whom have evolved somewhat individual learners' languages, prosodic patterning is consistent. Furthermore, all of the *basic* prosodic structures found in these data have been recognized for their universality in Bolinger (1978), though this area will not be investigated here.

Two of the speakers, Hiro and Tomiko, have developed native-like American English prosody. Although there are aspects of their pronunciation that are non-native-like, they have acquired, to two different degrees, the tune of American English. This is of fundamental importance to their skill as storytellers. The third speaker (Taro) is a case unique to my experience with non-native speakers: he manages to communicate in monologue regardless of the fact that his prosodic patterning is non-native-like. He provides a contrast to the others of particular interest in this study and in that of transfer on the prosodic level.

Transcription

To review the notation used here:

Tone

falling `

rising '

falling-rising ^

rising-falling ^

even —

Pitch-range

onset: high *h/hh*

low *l/l*

other syllables: drop ↓ / ↓ ↓

rise ↑ / ↑ ↑

height over syllables: (*high*)

(*low*)

range of pitch glide: (*wide*)

(*narrow*)

gradual descent or

ascent over syllables: (*descending*)

(*ascending*)

The prosodic transcription employs the following conventions:

1. Tone units. Before the onset syllable there is a vertical line; After the nuclear syllable (\pm tail) there are two vertical lines.
2. The nuclear syllables appear in capital letters.
3. Subordinate tone groups appear in square brackets.
4. Juncture. The normal slight pause between tone groups is not marked. Others pauses are marked, but not in a rigorous manner: three dots note pauses of one second or less; pauses of over a second are measured and noted in brackets.
5. Hesitations are indicated with a dash.
6. Examples in the text and Hiro narrative below are given with a dot display supplementing the transcription, in order to make the pitch changes more graphic for the reader. The dot display locates the pitch and designates the syllable as unstressed (•), stressed (●), or nuclear (○), denoting primary stress. Nuclear syllables also show a tail, noting the direction of the glide.

The transcriptions were reviewed and amended by Dr. Mieciej Pakosz of Lublin University, Poland, and UCLA. Dr. Polly Szatrowski of Cornell University also review some transcripts. Crystal (1969: 13-16) in his justification of an auditory rather than an acoustic approach to data, notes the importance of such verification. In the conclusion to this paper, some suggestions will be made concerning the use of acoustic measures.

Tone unit identification necessitates finding unit boundaries. After the peak of prominence, there will be a boundary consisting of a pitch change and a junctural feature, usually a very slight pause. Identification of tone units was not problematic in these data, given these criteria. One problem, however, was the status of a unit as independent or subordinate. Where both criteria of pitch change and juncture were found, a new tone unit was always indicated. It became clear, however, that adjacent units may vary in degree of autonomy. Such factors as structural and semantic binding are often reflected in tone unit structure, but the criteria of pitch and juncture remain the defining ones. In the following example, the pitch contours are identical, but the subordinate units differ in semantic and structural binding to the main unit, (9) being more tightly-bound than (10). Both examples show no juncture between main and subordinate, and subordinate nuclear tone glides in the direction of the main one.

- (9) duck was stuck to PÀTio [frozen STIFF]
(10) i can't SÈE nothin [SNÒW]

Contour:



Method

About 250 tone units of complete narratives were analyzed from each speaker: the number is approximate because only complete narratives were used. The narratives were divided into tone units and marked for tone and pitch-range features.

The data were then examined for the relationship between pitch-range and tone variations and status as event or non-event. An “event” was defined as that part of the narrative material that answered the question “What happened?”; everything else is non-event. Non-events included descriptions of scenes or conditions, evaluations, abstracts or introductory statements, and codas or ending statements. Reported speech was used to a significant degree only by Tomiko. In the analysis of reported speech, the reporting action (usually *say* or *tell*) was considered an event; usually that which was reported, a non-event.

Sample Narratives

Before the findings are presented, three short narratives, one from each speaker, will illustrate both the characteristics of the speakers and the method. The first story is transcribed with the addition of a dot display, to more graphically illustrate the pitch contours.

1. Hiro¹

The story “Automatic Door” is typical of Hiro’s output. Although there is some phrasing and word stress that is decidedly non-nativelike, the sentence contouring and placement of primary stress fits the patterns of American English.

Hiro created no incomprehensible utterances in the data, and in general, his ability in English, in structure and word choice as well as in prosody, reflects his experiential acquisition.

“Automatic Door”

- (1) / this is a different THÌNG buta // when /
- ^{hh}
- you go to

• . • . • . • • (• . • •
descending

jaPÀN//anda when/^hyou

• • • • • • •

- (2) try to get a TÀXI// if /they see a HÀND// /taxi will

• . • • • • • • • •

STOP// if /^ltaxi's

• • • •

- (3) EMpty// /they WILL [open the DÒOR for you]// by

•) • • • • • • •

/autoMÀtically// but /^hthey

• • • •

- (4) don't get OÙT [and try to Òpen]// /they have a uh...kind

• . • • • • • • •

of BÙTton to...

• • •

- (5) [ah ... driving SEÀT]// so:...when/
- ^h
- ever they getta

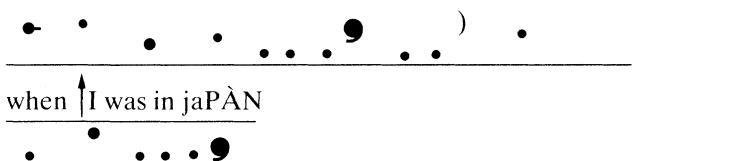
• . • • • • • (• • • •

descending

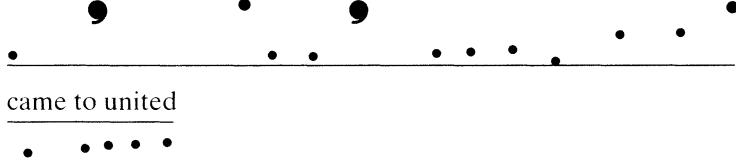
CÙStomer// /press the

• • • • •

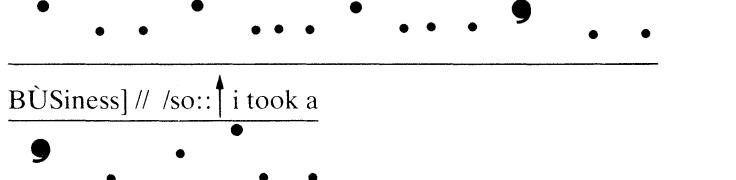
- (6) BUTton// /door will open 'toMÀtically// .../so:::[2 sec.]



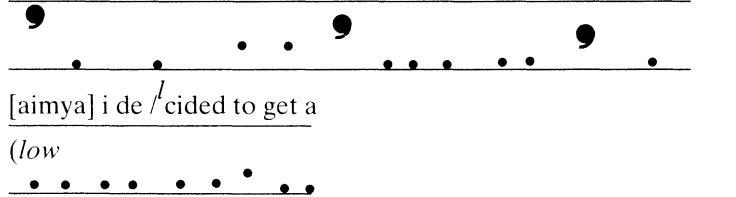
- (7) i/^hTHOÙGHT// /^htaxi supPÒSED to be like that///so...when i



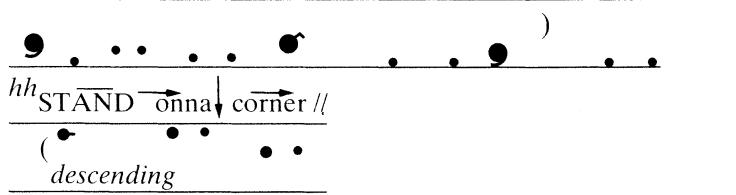
- (8) states anda weeks later i have to fly to NÈW york [on



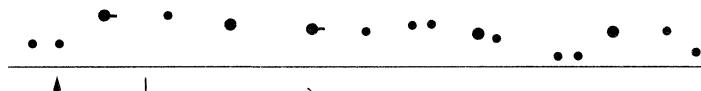
- (9) TÀXi// ... from.../pennsyLVÀNia station [over NÈW york]//



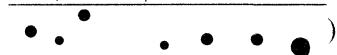
- (10) TÀXi because i din KNÒW...[ba- new YÒRK]// so:...i/



- (11) anda [^hRĀISa hand] [TRY to getta taxi]// anda/one empty



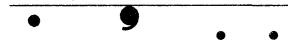
taxi↑stop...↓in front of MÈ//



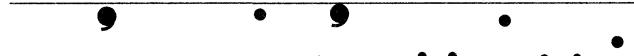
- (12) buta / door↓didn't↑Opèn// /i was↑WAITing// so...(laugh)



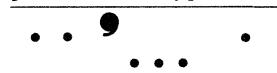
/just↑WAITing because//



- (13) i ^hTHOÙGHT// ^htaxi supPÒsed to be ↑open the door



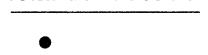
[autoMÀtically]// /so...



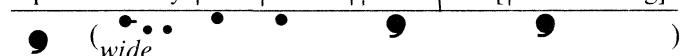
- (14) buta i was waiting about twenty or thirty SÈCond buta



/still do- doesn't

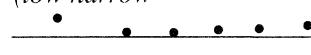


- (15) Open ^hfinally ↑taxi ↑driver ↑TÒLD me [↑SÒMEthing]//

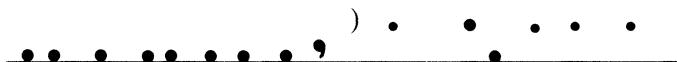


/but...↓that time i couldn't

(low narrow



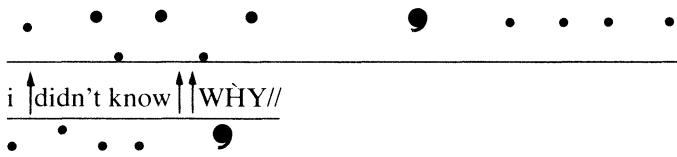
- (16) understand any english at ALL//so:::...I was feeling some



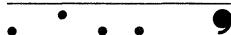
Kinde STRĀNGE//



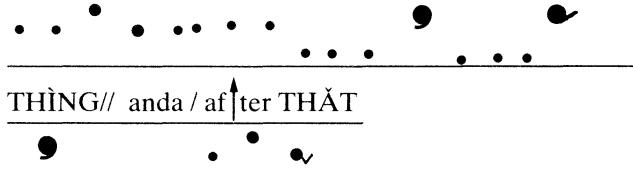
- (17) /so:::... taxi ↑ dri ver just [3 sec.] ↑ WÈNT//so:..andah...buta



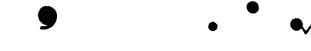
i ↑ didn't know ↑ |WHY//



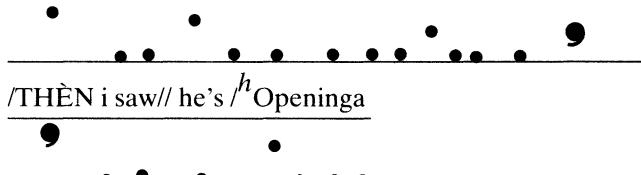
- (18) /so af ↑ ter that i try to get another TÀXi// dida / SÁME



THÌNG// anda / af ↑ ter THÁT



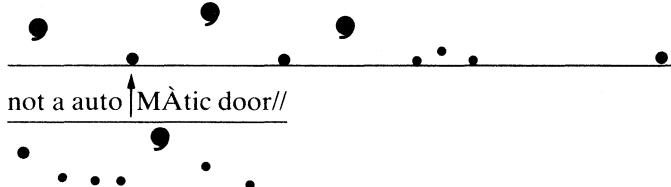
- (19) /↑ some other people came to get a taxi on the STREÈT



/THÈN i saw// he's ^hOpeninga



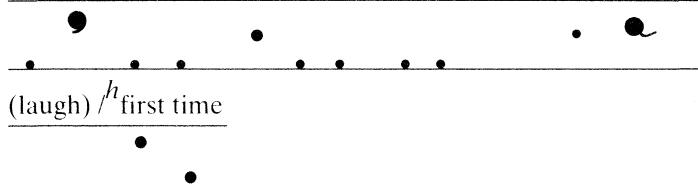
- (20) DOÒR [with ↑ |HÌMself]// THÈN i realized (laugh)// / is



not a auto ↑ MÀtic door//



- (21) so ^hLÒTta | things | different// ... anda [2 sec.] / that WASa//



- (22) i had a PRÒBlem [...at over THÈRE] //



Notes on the "Automatic Door"

Hiro uses both inter- and intra-unit pitch changes to make material in the narrative prominent:

1. Descending pitch over tone units is seen in lines 1, 5, and 10. In lines 1 and 5, the affected units are sentences which put forth a hypothetical condition. In line 10 the units form a sentence which expresses an "expected event": i.e., one that can be assumed to be in the mind of the hearer because of the previously-expressed context. In this case, the hearer has in mind the hypothetical hailing of a taxi, plus the real reported hailing which Hiro starts to describe in line 8. The sentence "so I stand onna corner, anda raise a hand, try to get a taxi... anda one empty taxi stop in front of me" is an expected sequence in context.

In situations in which conditional are used to set up hypothetical contexts and in situations in which "expected events" are related, Hiro uses this pattern of descending pitch over tone units.

2. Wide range characterizes unrealis situations, e.g.:

I thought taxis supposed to be like that (line 7)

but I didn't know why (line 17)

but door didn't open (line 12)

or continuous situations, as in

I was waiting (line 12)

or evaluative comments, as in

so lotta things different (line 21)

and in one case, a complement:

he's opening a door with himself (line 19)

Wide range is also used when reporting in line 15:

finally taxi driver told me something

The final example is the only one in which wide range is used to report an event in this story. The non-events in wide range are unexpected, surprising, contrary-to-fact, or emphasized situations.

Narrow range is used in lines 9-10 and 15-16, in both cases asides, and in line 14, in describing a scene.

3. High onset occurs in 13 units, and 11 of those are non-event units. Hiro seems to rely on high onset somewhat more than a native speaker would. Low onset occurs three times, all in afterthoughts or asides; the one event unit among them (in line 9) expands on an event that was reported before.

2. Tomiko²

“Stuck Duck” is a story characteristic of Tomiko’s narrating ability. Tomiko, while retaining some non-native characteristics of grammar and diction, has thoroughly learned the tune of American English. Isolated from all Japanese in rural and small-town settings in America, she has achieved a high level of communicative competence, and her acquisition of prosody contributes greatly. Unlike Hiro, she does not “sound Japanese”; many of the non-standard aspects of her language are characteristic of non-standard native dialect. Her style as a narrator is also different from Hiro: Tomiko unleashes extended monologues of continually-flowing language, in which she suggests her own topics, taking her monologue where she will, without interlocutor prompting; Hiro exhibits a good deal of planning, as seen through pauses, hesitation, very slow tempo, and other features.

“Stuck Duck”

/a little DÙCK was there// my / landlady DÙCK///she gotta little PÌpi on
 [ÉASTertime for her children]///grow ÚP///come over ↑ every MÒRNing//
 (descending
 bout^h five o’CLOCk//i TÙRN light↑ on//duck come inna WÌNdow [HÒL-
 lerat me]// [kwæ:]/ [kwæ:]/// so i used to givə BREÀD...for all time)//she/
 never go HÒME///STÀY with it//^{hh}one morning she don’t ↑ CRY so ^hi was
 (high
 WÒRry//look at ^{WÌNDOW}//i can’t ↑SEEÈ nothin↑ [SNÒW]// so/i open
)
 uppa DÒOR//
 /duck was stuck to PÀTio [frozen STÌFF]//so i told my HÙSband// i say/
^hduck is STÙCK//maybe ↑DÝin//his ↑HÈAd↓ was moving//but ↑FÈET
 (wide

was ↓frozen// /so my HÙSband told me she say// /get WÁRM WÀter///pour
 onna FOÒT///and so i DÌD//... /my HÚSband give me more water// /and
 (narrow) (ascending)
 PÓURin///and/pretty soon duck MÒVE// (laugh)/he was all RÌGHT//[1 sec.]
)
 h but/ he ↓come down ↑↑ every DÀY//messing up my ↑↑PÀTio// i didn't like
 (wide))
 d'ÀLL///ÂFter that//

Notes on "Stuck Duck"

1. Tomiko's tone-unit-level production is not highly marked. What is noticeable is the use of features across tone level: particularly wide/narrow pitch-range and patterns of descending or high pitch.

The *descending* pattern in lines 2-4 extends over eight tone units and frames a description of a usual scene. The *wide* pitch range units include a passage containing a contrast (line 8) and an emphasized description of a habit, (line 11). The *high* tone units in lines 5-6 mark the switch from the introductory description of the duck to the situation of the day that the events took place. They describe an uncharacteristic situation. The *narrow* units (which are also fast in tempo) fill in a line of events that are not primary events; they are all repetitions of material mentioned. They give a sense of the passage of time in the process of freeing the duck.

The first and second tone units of line 2 show rising pitch in non-interrogative contexts. Repeated rising pitches turn out to be quite common in Tomiko's speech; here they serve the purpose of affirming understanding with the interlocutor.

2. It is striking in listening to this passage that the tone units which contain the event sequences are presented in normal declarative intonation patterns (with the exception of the *narrow* sequence mentioned above), whereas the non-event passages are characterized by such variation as a sweeping descent in tone or description in wide pitch-range.

3. Taro³

The two previous speakers produced narratives that showed a sophisticated knowledge of English prosody, a knowledge that helped them greatly as storytellers. Taro also makes use of prosody, but it is used with a very limited knowledge of English grammatical structure. It is interesting that, in spite of these limitations, Taro is capable of producing good narratives. "I am

"Electric" is an example of Taro's distinctive style. (Occasional Standard English translations occur in parentheses.)

"I am Electric"

/that TÍMu//sum-↓I'M sorry//sum-summer NÌGHT///ver::ry↑RAÌN//
(low)

jaPÀN you know///that TÌMu//uh [3 sec.] /number OÑE worku//(-I was working job number one) /na- number TWÒ you know//(-no- it was number two) / hard WÒRKu//s- pick UP you know//(-pick up the coal) /trailer BRÌNGu// (-bring the coal to the trailer) /then...that ↑TÌMu...// ah... SMÀll COÙNtry//
(descend)

uh...ma- /look like country RÒADu you know// /just one man TWO man//
uh[2 sec.] /can WÒRKu you know//look like mo- THÀT way///coalman

IÑside is///japan IS ah...// that ↑h TÍMu//hh CABle//l electric ↑CÀble you
(high)
(wide)

know///because...ÓNE TÒN//bu-/trailer is ah very HÈAvy///SOME time
RÀILroadu and ah// ... / wheel between RÒCKu or something you know//

...isa ↓h pretty HÀRDu//that's why/↑h i didi ↑HÄND/hh CÀble you know///
(wide)
high)
(descend)

HÒLDu//

/then-back HÙRT// /PÙSHu you know// /then elEÇtric you know//
oh...CÒME to//.../i cannot go [1.5 sec.] ÒFF you know//(-I couldn't get off//
)

the cable) /then "PLEÁSE" →helpa me →helpa mè [i am eLÈCtric] you know//
(high)

uh..."i cannot go..OÙT" you know// /friendo...run away// THÉN tèll super-
(high) low

visor// /supervisor ↑cut off ↑LÌGHt//eLÈCtric you know//h that's WHÝ//.. /i-
)

i did save LÌFu//that/↑h TÌMu you know///fall down to RÀILroadu// /my
(descend)

oSHÌri//(backside) /ko-KÒko//(here) /h it↓HÙRT// /h it↓HÙRT// /AH- huh//
) (wide)

Notes on "I am Electric"

1. One is struck immediately with the non-native character of the sentence intonation produced by Taro. There is one common tone unit pattern in this story: a short statement intonation, having one stressed syllable, followed by a low tail, *you know*. The unit generally does not contain more than one stressed syllable, and the glide is almost always falling. There is a pre-head of varying length, although the unit is consistently short — usually three to six syllables. (Only 11.3% of the sampled units were over six syllables, and none were over nine.) Taro seems to enforce this brevity by dropping off a unit with "you know" at any point in the structure. There is evidence to show that this sentence intonation bears close resemblance to that of Japanese,⁴ though it is not our purpose to present such an argument here.

2. Taro works very hard at storytelling, using gesture, facial expression and eye contact, searching his limited lexical repertoire, and checking with the interlocutor as well as employing prosodic devices. The features of intonation and pitch-range in use by Taro can be seen as an extension of the physical gestures which he also relies upon — more easily in him than the other speakers because of the extent to which he exaggerates them. Taro uses patterns of high and low, descent and ascent, wide and narrow in order to provide support for his monologue, and often a pair of opposing features will be juxtaposed. Typical of this is the *high* stretch in line 13-14 above, followed immediately by a *low* stretch of units. This strategy seems exaggerated but serves Taro well.

3. It is characteristic of Taro's speech that a clause be broken down into two or more tone units, as in the following:

/just one man TWO man// /can WÒRK you know//

and

/i did HÄND// /CÀble you know// /HÒLDu//

In this way Taro preserves the intonation patterning described in note 1 above. (See footnote for the Japanese nature of this characteristic.) The pattern is the same regardless of the status of units as event or non-event.

4. In this story, and typically for Taro, there is a good deal of description, scene-setting, and evaluation. Above, it is shown that such passages are marked with the features *descend*, *wide*, and *high* and also exhibit rise and high onsets. Because of the nature of Taro's delivery (highly marked prosodically) and the nature of the content (highly "backgrounded") we can generalize that the non-event portions of the narrative exhibit great tone and pitch-range variation.

4. Results and Discussion

It should first be mentioned that the features under discussion are not numerous in the data. In Hiro's case, the example narrative is more marked than most of this other stories.

Table 1. Syllable features - Hiro

	↑ / ↑	event 10	non-event 34	totals 44
features	↓ / ↓	5	12	17
	h/hh	15	27	42
	l/l	3	7	10
	totals	33	80	113

The features which show relative pitch height contrasts between syllables are best understood in relation to each other, and to the other features: although their number in themselves do not have much meaning, they define the pitch contours and thus the features of narrow/wide, descending/ascending, and high/low.

However, from the above table we can make a few pertinent generalizations. First, high onset and rise are very numerous. This fact is clear but not so interesting: it is expected that prosodically marked segments serve some kind of function of focus on importance, and that function is usually carried out by raising pitch. Bolinger (1978: 515-16) calls high pitch "the normal sign of importance" for any language. He goes on to predict that the opposite, lowering or downtoning, would appear less frequently or not, in some languages, at all. It may be that the lowering effects counted above need more explanation than the rising ones; what is obvious in some cases is that the lowering comes before a particular rise, in order to exaggerate the contrast in highly marked contexts.

The prevalence of high onset may be explained by the fact that in Japanese, a stressed onset syllable must be higher than the nuclear syllable (Szatrowski, personal communication). However, it is not the case that high onset was applied over all (in fact, only in 42 of 244 tone units); this characteristic likewise did not render the prosody un-English-like. The role of transfer from Japanese in this case will need to be further investigated.

Finally, the features of Table 1 were used in non-event tone units about

two and a half times more often than in event units.

Table 2. Polysyllabic Features - Hiro.

	event	non-event	totals
features	wide	4	12
	narrow	2	4
	descending	5	6
	ascending	0	2
	high	0	2
	low	0	4
	totals	11	30
			41

These features, which span a tone unit or series of tone units, are used three times more often in non-event units than in event units. Notice that Hiro favors the features *wide* and *descending*. He sometimes uses the *wide* features in a way that sounds exaggerated to a native speaker, accompanying it with a slow tempo and precise articulation — no doubt overcompensating for what he perceives as a lack of effectiveness of his “English accent”.

The importance of these features for the text lies in their relation to the rhetorical aspects of the stories. Let us see how the features are used in story structuring, using “The Automatic Door” as an example.

The introductory, orientational material is presented in a descending pattern at the opening:

When you go to Japan, and when you try to get a taxi, if they see a hand,
taxi will stop...if taxi's empty.

The preceding constitutes a sentence with an afterthought. There follows a few explanatory units, and then another descent, which signifies the conclusion of the orientation:

So whenever they got a customer, press the button, door will open automatically.

This last, also a sentence, ends with a low fall, completing a paragraph.

The next four units are marked with syllable rises, and are accompanied by tempo slowing, contributing to the weighty effect of Hiro’s explanation. The fourth of these units is a sentence which starts the story action:

I took a taxi from Pennsylvania station over New York.

This unit is delivered with *wide* range, as well as slow tempo: attention is placed on the beginning of action.

After an aside explanation is made, Hiro talks about what happened when he hailed a cab in New York. To do this, a descending sequence of units, constituting “expected events” of standing on the corner and raising a hand and so on, is produced. These “events” are actually pre-events, setting the scene for more important ones. The sequence is a sentence; it ends a scene.

The next units are highly marked. Wide range and high onsets and rises deliver the facts the door didn’t open, that he waited, and that he had had expectations counter to the events. This is the crucial situation for the narrative, and its success depends largely on these markings. Note that the grammar of the units are typical “backgrounding”, however—telling what did not happen, describing the scene, and giving explanation.

Two punctual events, also marked *wide*, and certainly of import to the story, come later:

↑
taxi driver ↑ told me ↑ something
and ↑
taxi driver just...went

Yet the reaction to these events is also highly marked:

↑
but I didn't know ↑ why

The subsequent events are related in a straightforward manner: Hiro repeats his mistake, observes other hailing cabs, and realizes his mistake. The only highly marked unit is the complement of the verb ‘saw’ in

↑
then I saw he's opening the doör [with ↑ himself]//

This unit’s high onset and rise conveys Hiro’s surprise at the reported fact. The low fall at the end of the next unit ends the story proper.

An evaluate comment (so lota things different) and a coda (and that was the first time I had a problem at over here) both constitute sentences.

In this story we see that it is possible to define sentence-length pitch patterns which have identifiable functions in the story: for example, a descending pitch pattern presents conditional material and “expected events”, low pitch carries asides and some explanatory material, and wide range conveys importance of explanation or event, and surprising or unexpected conditions. The patterns frame rhetorical units of the stories. For our purpose here it is essential to note that the *marked* tone units create rhetorical units likely to be non-events.

Table 3 shows the syllable-level pitch changes for Tomiko.

Table 3. Syllable Features - Tomiko

		event	non-event	totals
features	↑/↑↑	7	45	52
	↓/↓↓	3	6	9
	h/hh	5	25	3
	l/lh	1	2	3
	totals	16	78	94

Again, the contrasts shown for adjacent syllables are less important in themselves than they are in defining contours. However, we once more notice a reliance on the high onset and rise. The proportion of these features is greater in Tomiko's data than in Hiro's, and that is reflective of Tomiko's speaking style, which is highly animated, contains a lot of contrastive structures, and relies more heavily on pitch height than on other features.

In Table 3 we see that about 80% of the marking for syllable features occur in the non-event units of Tomiko's narratives.

Table 4. Polysyllabic Features - Tomiko

		event	non-event	totals
features	wide	3	9	12
	narrow	5	0	5
	descending	0	3	3
	ascending	4	3	7
	high	0	10	10
	low	1	1	2
	totals	13	26	39

Table 4 shows that tone unit features which run across tone unit boundaries are used twice as often in non-event sequences as in event sequences. We see that Tomiko has a preference for the *wide* feature, as Hiro does, but none for the use of *descending* tones. Tomiko also favors the feature *high*, and uses

ascending sequences more readily than Hiro. It also seems that certain features (*narrow* and *ascending*) are more easily used for event reporting than others. The preference for marking non-events is clear for the other categories.

The *high* feature is often used for reported speech, the reported content being delivered at a sustained high pitch, providing a contrast with the reporting verb and subject, which are usually unmarked or *narrow* in delivery.

Tomiko's stories are full of emphatic descriptions, contrastive structures, reported speech and other structures which are highly marked. Intonation, pause, duration, stress and other prosodic subtleties are native-like in her data. Although there are other aspects of her speech which are less than native-like, Tomiko has been very successful at learning the tunes of English.

One pattern which is important in her output is a rising contour which lasts for one tone unit and is repeated over a sequence of units. This contour is actually quite flat and narrow, but it drifts upward. This pattern usually occurs in successive units which frame a scene or a series of events. Sometimes the pattern is repeated over units which include both events and non-events, as in the following report of a hurricane:

- (11) WÍND was blowing
house trailer have a AŴn ing on it
MÍSter rainer-
MÍSsus rainer
was TRYin to take down
so I HÉLP it
CLÍMB up toppa trailer
We have a TÈRrible time

These units go together as a paragraph. The same tone pattern is repeated one unit at a time until a falling tone denotes the end of the paragraph. There are other examples of this pattern where the characteristic unit is interspersed for a shorter length, particularly where scenes or sequences of activities are being described:

- (12) I could not open DÓOR
I try KÍCKin
an PÚSHin
an PÚLLin
ÈVerything I done

There are 41 occurrences of this pattern in the Tomiko data. Occasionally, the pattern sounds non-native-like, as in (11) above. The pattern is also used for listing, as in (12), where it sounds perfectly natural in English. Bolinger (1978) points out such rises, signifying "not finished", are universal. Often the same pattern seems to be used to ask confirmation of the interlocutor, to make sure he is attending. Ikasawa (personal communication) and other Japanese have indicated that such confirmation is constant and expected between Japanese interlocutors. Perhaps the pattern's frequency can be explained in part by Tomiko's expectation of confirmation.

Tomiko's use of inter-tone unit patterns can be related to the rhetorical structure of her stories, but it is clear that this is done in a manner very different from Hiro's. The most striking difference is that Hiro's stories seem highly planned: evidence of planning is particularly seen in pauses which are sometimes quite long, drawn out "conjunctions" such as "so" at the beginning of units, self-corrections, and so on. Tomiko's stories do not exhibit planning. Pauses are rare. Stories usually begin in a rather chaotic way, with Tomiko continuing to talk as she orients herself to what she wants to say. (This tendency is illustrated in "Stuck Duck".) Despite this lack of planning, however, Tomiko's stories show the same close relationship between rhetorical unit (the sentence) and pitch contour. This is the case even though the particular contours which are characteristic for one storyteller appear to depend on individual style.

Table 5. Syllable Features - Taro

	event	non-event	totals
↑/↑↑	2	19	21
↓/↓↓	3	11	14
h/hh	3	25	28
l/l/	5	6	11
totals	13	61	74

Just over 80% of the total marking in Table 5 is found in non-event units, and again, high onsets and rises constitute the important markings. In Taro's case, the pitch contrasts may be exaggerated in order to make clear to the interlocutor exactly what is important: Taro was well aware of his limited knowledge of English structure and lexicon, and compensated through pro-

sodic means. Much of his success in communicating must be attributed to this and other paralinguistic strategies.

Table 6. Polysyllabic Features - Taro

	event	non-event	totals
features	wide	1	13
	narrow	2	6
	descending	2	4
	ascending	1	4
	high	0	5
	low	1	5
	totals	7	35
			42

In Table 6 we see that Taro favors the use of wide range, but that he uses all of the features to some degree. Here, five times the number of non-event sequences are marked, over that of event sequences.

Taro also makes use of the flat, slightly rising pattern which is repeated over tone units. This feature seems to be used to list conditions when describing a situation or to give details when explicating. Taro does not use the pattern for confirmation with the interlocutor, as Tomiko did. The following example described the conditions in Japan just after World War II, when coal mining became essential to rebuilding:

- (13) look like WÀVES
now uh inFLÁtion
now reCÉSSion
now inFLAtion
uh house FÍnish (= houses were ruined)
next wave's COMing
means ah CÒAL you know (= this means coal is needed)

The pattern occurred 22 times in Taro's data. The prominence of this pattern for both Tomiko and Taro leads to questions about the use of the pattern in Japanese, the possibility of prosodic transfer, and the reason why Hiro seems not to have employed the pattern.

It is quite clear that for these speakers, the non-event portions of the narratives exhibit greater variation of tone and pitch-range than the portions

which report events. This is the case even though the marking patterns that are typical for one storyteller may not be characteristic of another — they vary with individual storytelling style. However, questions may be raised as to the relevance of this finding.

First, it is true that in the stories, the total number of non-event units greatly exceeds that of event units. For Hiro the ratio of events to non-event units is about 1 to 5; for Tomiko, 1 to 4; and for Taro, 1 to 11. It is not surprising that description, evaluation, motivation, and other “background” features should outweigh the event units in number. However, it does not follow that one or the other *type* of unit should be marked. If we assume that high marking signifies “importance” or “focus”, and low marking signifies the opposite, no necessary conclusion can be drawn as to which type of unit would be marked. And in fact, both events and non-events are made prominent or downtoned, according to the storyteller’s purpose. What seems to be true in these stories is that the more prosodically prominent material is the non-event material, for each of the speakers.

One tentative conclusion which needs further investigation is the suggestion that events are reported in a normal, declarative intonation pattern, with no marked features, unless the event is a *central* event, in which it will be made prominent, or an aside or incidental event, in which case it will be downtoned. There are relatively few central events in a story, but many ways to comment on events, and many motivations for marking. We have seen that high onsets and rises are characteristic of expressions of surprise, evaluations and so on. High onsets also serve to start a new scene. Patterns of ascent and descent are often used with material which gets us from one event to another, particularly through creating conditions. High sentences show surprise, emphasis, importance; the content of reported speech is often delivered in high pitch. Low sequence deliver asides or non-essential explanation. With usually lends weight, surprise, counter-to-expectations, or contrast. Narrow sequences are often combined with up-tempo to hurry us through a condition or event sequence and on to something more important. These features combine with tempo, rhythm, loudness and other prosodic characteristics to create the texture of the stories.

5. Conclusion

In this very preliminary study, it is shown that prosodically marked structures are characteristic of the “background” portions of narratives. It has also been suggested that the prosodic structure of the narrative is closely related

to the rhetorical structure — that in fact, prosodic patterns frame the rhetorical units. This study suggests other, and begs comment on some methodological points.

First, the study as conducted was impractical and unwieldy from the standpoint of data analysis. The transcription process was difficult and far too lengthy; the transcripts also had to be checked by at least one other transcriber. This process could be greatly aided by the use of a pitch recorder, which would provide a more objective measure of the stream of speech. The recorder would make it easier to observe a stretch of speech, to determine norms, and to compare different speakers.

What the recorder cannot solve is the problem of deciding on a point at which high pitch become *high*, or a wide interval becomes *wide*. These judgements remain relative to the context of the speech and to the speaker's norm. The recorder would ease the process of reaching the judgements, however.

This study shows some ways in which rhetorical and prosodic structures are interwoven. That complex pitch phenomena and other prosodic elements are integral to story structure seems too obvious to mention, yet such elements have rarely been studied as indicators, either cognitive or linguistic, of the structure of discourse, perhaps because of the difficulties in prosodic measurement. Spontaneous personal narrative is a good medium for the investigation of prosody in discourse because narrative is highly structured in ways that we already know about, and we can see how prosody defines and supports the discourse units of narratives. Prosody, infinitely subtle and individuated, is at the same time collectively used in recognizable ways to create discourse.

NOTES

1) Hiro is a 38-year-old worker in an electronics firm who was sent to the US by his company. He graduated from a vocational high school in Japan. He claims no formal English education except in junior high, a learning experience which he termed 'lost'. His speaker status was reported as 'absolute beginner' upon his arrival in the US eight years before taping.

2) Tomiko came to the US in 1952 as a war bride, and was in her mid-50s when taped. She spoke no English on arrival, as her husband was fluent in Japanese, but her gregarious nature and non-contact with the Japanese in the US became the basis for her acquisition. She is an excellent storyteller, recounting at length and with relish stories based on everyday experiences.

3) Taro was 53 at the time of taping. He is a gardener who had been in the US for 27 years, mostly in California, when taped. He has very limited use of standard English, but manages to communicate quite effectively. He has developed a number of strategies, including formulaic speech and

paralinguistic/kinetic communication. His social network includes very little contact with native English speakers. Taro is very gregarious and very verbal despite his limitations with English.

4) At least seven native Japanese, some of whom were linguists, unanimously attested to the Japaneseeness of Taro's prosody. Some commented that, when listening to Taro and ignoring the lexical content, they had the impression of hearing Japanese. Shoichi Iwasaki of UCLA noted the influence of Japanese syllable structure on Taro's brief tone units; he noted also that Japanese had intraclausal pauses. From this informaton I gather that the relationship between tone unit and clause in Japanese may be quite different from that in English.

Polly Szatrowski of Cornell University was helpful in showing how the clause structure of Japanese allows for intonational structures of finality within even tightly-bound clauses. That is, partial clauses may have final intonation. Taro exhibits this trait often. Szatrowski also pointed out the Taro's staccato delivery is characteristic of Japanese, as are the afterthoughts which pepper Taro's speech. Further, a stressed onset syllable in Japanese must be higher than the nuclear syllable, a fact which may explain Taro's often-high onset. It would be interesting to consider the characteristics of Taro's speech which are Japanese and those which tend to be universal and thus presumably aid Taro's ability to communicate. Are there any uniquely American aspects to his prosody?

Recognizing Taro's heavy reliance on Japanese, one becomes more aware of the acquisition achievements of Hiro, who has acquired the stress-timing of English very adequately, yet still is recognized by Japanese and native American English speakers as "sounding Japanese", and of Tomiko, who, according to the same groups, does not sound Japanese, but has an unplaceable accent which some thought was native American.

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ON THE STATUS OF SVO SENTENCES IN FRENCH DISCOURSE

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1. Introduction¹

According to an old linguistic tradition the basic object of grammatical and logical analysis is a sentence in which all argument positions are filled with fully referential lexical NPs. This tradition goes back to Medieval and Greek grammatical theory. Indeed from Plato on, the canonical sentence type of grammatical theory has been the type *Socrates currit* ‘Socrates is running’, the so-called *oratio perfecta*, which expresses a “complete thought” (cf. Stefanini 1981, and references therein). One reason why the *oratio perfecta* came to be the canonical model is that the meaning and the truth conditions of *Socrates currit* is no doubt easier to state, on the basis of this sentence alone, than the meaning and truth value of *Currit* ‘he/she/it is running’, which has no lexical subject. I will refer to such sentences in which all argument positions of the verb are filled with lexical NPs as *SV(O)* sentences.

It is typically such *SV(O)* sentences that are used in linguistic argumentation. An archetypal SVO example, illustrating the basic form of the English sentence, is Sapir’s model *The farmer kills the duckling*, which the author calls “a typical English sentence” (Sapir 1921:ch.V). It is interesting that a great linguist should imagine as a basic model a sentence which so blatantly contradicts our pragmatic intuitions that it is often misquoted with the verb in the past tense (*The farmer killed the duckling*), in an unconscious attempt on the part of the quoter to bring grammar and the real world a little closer together. The difference between Sapir’s model sentence and what a person might have said in a real life context to convey the meaning contained in this sentence is related, I believe, to the distinction Lyons draws between *text-sentences* and *system-sentences*:

System-sentences never occur as the products of ordinary language behavior. Representations of system-sentences may of course be used in

metalinguistic discussions of the structure and functions of language; and it is such representations that are customarily cited in grammatical descriptions of particular languages. (Lyons 1977:30f)

As another example, this time from an actual English text, consider the following short fragment:

When naturalist John Muir stood on the summit and watched the sunrise in 1896, he exclaimed: "The view from San Jacinto is the most sublime spectacle to be found anywhere on this earth!" (John W. Robinson, *San Bernardino Mountain Trails*, Wilderness Press, Berkeley, 1975:183)

Two things are remarkable here. First, the fact that the writer quotes John Muir as saying something he would hardly have said in the reported situation. (He is much more likely to have said something like "This is the most sublime spectacle I've ever seen", or some similar sentence with no lexical subject, if indeed he said anything at all at this particular moment). The second remarkable fact is that the writer can get away with this fiction, i.e. that we can read such sentences in a text without finding anything anomalous about them, even though we would not normally say or hear them as products of "ordinary language behavior". It is not my purpose here to discuss our ability to engage in non-ordinary language behavior by creating and accepting system-sentences, although this would be a very interesting endeavour in and of itself. Rather the purpose of this paper is to investigate the occurrence of SV(O) sentences in actual speech, in particular in spontaneous oral discourse.

The basis for my investigation will be data from modern French, a language that is typologically similar to English in many respects, and in which the grammatical tradition that has created the SVO model is at least as strong as in English. A look at any stretch of spontaneous spoken discourse in French (as in English, or — as I am tempted to predict — in any other language²) is sufficient to show that the SVO clause pattern is *not* the predominant pattern at the level of surface structure. The empirical evidence concerning the occurrence of lexical subjects in spoken French is indeed stunning. One long corpus of conversations between members of a working class family in Paris (François 1974, vol. 2) contains a total of 1,550 nouns, only 46 of which are lexical subjects.³ Similar statistical results are reported in Jeanjean (1981).

This is indeed a noteworthy phenomenon: since subjects are the only arguments which are necessarily present in all propositions one might expect the number of nouns in this argument position to be higher than in any other position. However, nouns occur much more frequently in *object* position, i.e.

after the verb (roughly 300 occurrences in François' corpus). This is in fact not surprising, given what we know about the normal direction of information flow in the sentence, post-verbal object position being the position in which "new information" tends to appear in VO languages. What may be more surprising is that the vast majority of nouns appear neither in object nor in subject position but in prepositional and adverbial phrases, in extra-clausal topic phrases, and in phrases that have no syntactic connection with the proposition at all. These nouns make up roughly 1,200 occurrences out of the total of 1,550. In this paper I will be mainly concerned with a subset of these nouns, those occurring in extra-clausal topic phrases.

The prevalent syntactic unit in spoken French discourse is not the sentence that expands into NP and VP. Rather the corpuses reveal as the dominating unit a syntactic structure which I will call the *preferred clause* of spoken French, and which contains no subject NP.⁴ In section 2 of this paper I will describe this preferred clause and the ways in which French speakers can substitute it for the SV(O) pattern by using various grammatical *constructions*. These constructions have the effect of ordering the basic constituents of the clause in such a way that the preferred clause structure is preserved under the various pragmatic circumstances of the discourse which require a departure from the normal syntax. In section 3, I will then investigate the status of those rarely occurring but nevertheless fully functional sentences that do contain lexical subject NPs. My main argument concerning the function of such sentences will be that there is a correlation between the occurrence of lexical subjects and the discourse status of the clauses in which they occur. Lexical subjects strongly tend to appear in clauses that represent pragmatically *backgrounded* portions in the discourse. This pragmatic feature is then shown to correlate with the syntactic fact that lexical subjects occur almost exclusively in *intransitive* clauses, i.e. in clauses of the type SV. As a corollary, the canonical *SVO* sentence type, containing both a lexical subject and a lexical object, will appear to have no pragmatic function in spoken French.⁵

2. The preferred clause of spoken French⁶

The low number of lexical subject NPs in spoken French contrasts with the extremely high number of pronominal (clitic) subjects or other clause-initial clitics. Thus the above quoted number of 46 lexical subjects in the François corpus should be seen in contrast with the total number of 1,440 clitic subjects (this number includes 1p and 2p clitics but excludes deleted subject clitics of the type mentioned under (c) below). The preferred clause unit of

spoken French contains one or several clause-initial clitic pronouns which are bound to the verb⁷ and an optional lexical constituent after the verb. Thus, given the status of clitic pronouns as verbal prefixes, the preferred clause is a *verb-initial* structure. This preferred structure can be schematically represented as [clitic+Verb (X)]. The constituent filling the optional X position is pragmatically the *focus* of the clause. Immediately preceding this sequence is a position for initial focus constituents, including (optionally fronted) question phrases and marked focus NPs (cf. section 2.1, ex (1)). For lack of a better term I will call this position COMP. The preferred clause structure including this initial position is thus [(COMP) clitic+Verb (X)]. I take this syntactic structure to be the basic information unit of spoken French. It is the domain of propositional information proper. Constituents that precede or follow it are lexical topic phrases, adverbials, or other pragmatically determined elements that do not directly take part in the syntax and semantics of the clause.

The initial clitic in the preferred clause can be:

- (a) a subject clitic of the series *je tu, il, elle, on, vous, ils, elles* (*on* replaces standard French clitic *nous*);
- (b) the demonstrative or impersonal 3p clitic *ça* or *c'* (standard French *ce* does not occur in the spoken language);
- (c) the dummy subject marker *il*, used with so-called impersonal verbs like *il faut* 'it is necessary', *il paraît* 'it seems' etc. and in subject-verb inversion constructions (cf. section 2.2); this *il* is frequently omitted;⁸
- (d) the adverbial clitic *y* 'there'.

The subject clitics in (a) - (c) can be followed by one or several non-subject clitics. In this paper, clitics will often be written in the phonetically shortened forms in which they are used in spoken French (e.g. *il*→*i'*, *tu*→*t'*, *vous*→*vs'* or *s'* etc.; for details on the shape of spoken French clitics cf. Lambrecht 1981:12ff).

The post-verbal focus constituent can be any type of lexical phrase, including a subject NP of the presentational type (cf. 2.2 below). It can also be a pronominal NP containing a pronoun of the independent (non-clitic) series *moi, toi, lui* etc. An example of a pronominal focus is given in (5) below. In this paper I will only consider NP foci, since I am mainly interested in the way in which discourse referents are syntactically coded in the sentence.

The term *focus*, which stands for the more explicit relational expression

focus of the assertion or *focus of the new information*, refers to that element in the clause which is singled out as the most salient part of the new information, or, a little more precisely, to that element by which the assertion expressed by the proposition differs most saliently from the pragmatic pre-supposition, which I define as the assumed state of information of the addressee at the time of the utterance. Note that the focus expresses “new information” only insofar as it indicates an unpredictable (or non-topical, cf. below) relationship between a referent and a proposition. The referent of the focus constituent (if the focus is a referential item) does not have to be new in the discourse. It is important to draw a distinction between the *focus of the new information*, which is found in every clause, and a *new discourse referent*, which is not an obligatory part of every clause. A new discourse referent is a referent that is neither *given* nor (pragmatically) *recoverable* in the context of utterance. A *given* referent is a referent that is assumed by the speaker to be present in the consciousness of the addressee at the time of utterance (Chafe 1976). A *recoverable* referent is a referent that is not yet given, but whose identity the addressee is assumed to be able to recover from the discourse context. A referent can be recoverable because it was mentioned before, because it can be inferred from other previously mentioned items, or because it is saliently present in or inferrable from the extra-linguistic context of the utterance.⁹ In spoken French, every new discourse referent that the speaker wishes to mark as such must appear in focus position. But, as noted above, every focus constituent does not have to contain a new discourse referent (for an example see (5) below). Whereas the “newness” of the focus is due to the unpredictable relationship of a referent with a proposition, the newness of a discourse referent consists in the inherent pragmatic status of non-recoverability the referent has in the discourse. Thus, while ‘focus’ refers to a pragmatic relation expressed in a proposition, ‘given’, ‘recoverable’ and ‘new’ refer to temporary psychological statuses of referents in the mind of the speaker/hearer, independently of the role these referents play as elements in a proposition.

The relational concept *focus* as I define it here contrasts with the relational concept *topic*. The relation *topic of* is the relation of *aboutness* holding between a referent and a proposition with respect to a discourse (cf. Reinhart 1982). The topic expression in a sentence indicates the referent about which the speaker wishes to add information or with respect to which the information expressed in the proposition is presented as relevant. The topic referent is a referent that has to be “taken for granted” at the time of utterance. In spo-

ken French, for a proposition to be 'about' a referent this referent must normally have the inherent pragmatic status *given* (cf. Lambrecht 1984a).

To prevent some of the misunderstandings that tend to arise when there is talk about topic let me try to clarify the concept by narrowing it down for the sake of this discussion. Since topic involves a pragmatic relation between a referent and a proposition, the word 'topic' is often used to designate the discourse *referent* itself about which new information is being added in the proposition. This referent will be called here the *topic referent* or sometimes simply the *referent*. This common use of the term 'topic' as referring to a non-linguistic element (a referent) should be sharply distinguished from the use of the term to refer to a *linguistic expression* designating the topic referent in a sentence. This linguistic expression will be called here the *topic expression* or the *topic*. It is this linguistic concept of topic that I am mainly concerned with in this study.

There are basically two ways in which a topic expression can designate a referent in a sentence. The topic expression in a sentence can *name* the topic referent, by means of *lexical phrase* and in the syntactic form of an NP. Such a lexical topic constituent will be designated with the capital letter *T* (or *AT*, which stands for "Antitopic", cf. 2.2.4 below). But the topic expression can also be, and usually is, a (complex) morpheme that refers *deictically* to the topic referent, or *anaphorically* to some lexical representation of the topic referent, in pronominal i.e. *non-lexical* form. This topic morpheme will be designated with a small *t*. The *t* morpheme can be a clitic pronoun, a zero or the relative pronoun *qui*, *que*. Whereas, in spoken French, *T* is normally an extra-clausal constituent with a merely lexical naming function and no case role in the proposition, *t* indicates the semantic role the topic plays inside the proposition and the syntactic relation it bears to the clause (cf. section 2.1.3 below, ex. (17) and discussion). This explains, among other things, why *t*, but not *T*, is morphologically case-marked (cf. Lambrecht 1981:34ff.). Thus, since the *T* constituent is not part of the proposition proper, it is strictly speaking not with *T* but with *t* that the aboutness relation is expressed within the proposition. Under specific circumstances, to be analysed in section 3, *T* and *t* can merge and be expressed by a *lexical subject NP*. In my analysis, a subject NP with a topical referent is a pragmatic *agglomerate*, which combines the referential function of *T* with the relational function of *t*.

With these distinctions in mind, the structure of the preferred clause, together with its lexical topic satellites, can now be schematically represented, in pragmatic terms, as $(T) [(F) t V (F)] (AT)$, where the first *F* indi-

cates the position for clause-initial focus constituents in COMP (especially QU-phrases), where the second F indicates the unmarked post-verbal focus position, and where T and AT are the extra-clausal topic constituents, which stand in a coreference relation with the intra-clausal t (cf. 2.1.3 below).¹⁰ The overwhelming frequency with which the preferred clause structure recurs in natural discourse is evidence, I believe, that the syntactic sequence clitic-verb-NP, with its pragmatic mapping topic-verb-focus, must have some cognitive or processing advantage over other possible sequences (such as SVO structures). At the end of this paper I will suggest an interpretation of the preferred clause as a language-specific manifestation of a universal pragmatic principle governing the information flow in the sentence.

2.1 Grammatical constructions and the preferred clause

In order to preserve this cognitively preferred unit of syntax as invariably as possible, the grammar of French offers its speakers a number of *grammatical constructions*, whose function, I claim, is to order lexical phrases in accordance with the pragmatic requirements of discourse, and in particular to allow NPs that would become lexical subjects to appear elsewhere than in preverbal subject position. The term ‘grammatical construction’ is used here in the sense of Fillmore, Kay, O’Connor (1983), Fillmore (1985), Lakoff (1984), and Lambrecht (1984b). Roughly, a construction is a productively used non-derived structure whose properties cannot be predicted from the general syntactic and semantic properties of the grammar and whose form is often directly linked to its pragmatic function. The constructions of spoken French to be discussed here all have in common that they respect, in one way or another, the preferred clause structure [clitic+Verb (X)].

In the remainder of this section I will briefly characterize these different constructions and define their various pragmatic functions in discourse. The pragmatic functions expressed are the *identificational* or *focus marking* function (serving to identify a referent as a focus argument in a proposition, section 2.1.1), the *presentational* function (serving to introduce a new referent into the discourse, section 2.1.2) and the *topic marking* function (serving to mark as a topic a referent that the speaker assumes to be pragmatically recoverable in the discourse, section 2.1.3).

2.1.1. The *identificational* or *focus marking* construction

Unlike English, spoken French has a quasi-absolute constraint against the mapping of the pragmatic relation of focus onto the syntactic relation of

subject. With the exception of postverbal subjects (cf. the discussion of inversion in 2.1.2), I have found no instances of subject NPs with focus function in the corpuses I have analysed. Initial focus NPs do occur in pragmatically marked, strongly contrastive contexts, associated with clause-final, i.e. falling, intonation on the initial constituent and lack of stress on all post-focal elements in the clause. However these initial focus constituents hardly ever seem to be subjects. A focus-initial construction is illustrated in example (1). Here and in the following examples, the focus is in capital letters:

- (1) *T'as pas faim? - Faim non. SOIF J'ai.* (Stempel 1981)
 'Aren't you hungry? - Hungry, no. Thirsty I am.'

I will not deal in this paper with such constructions involving initial focus constituents. (For some discussion, cf. Stempel 1981; cf. also Prince 1981b and Silva-Corvalán 1983 for discussions of focus-initial constructions in English and Spanish.)

The constraint against foci in subject position can be illustrated with the following made-up dialogue:

- (2) A: *Où est mon rasoir?* 'where is my razor?'
 B: a. ??PIERRE l'a 'Peter has it'
 b. *C'est PIERRE qui l'a* 'It is Peter who has it'

The answer to A's question is unacceptable with the focus *Pierre* in initial position as in (2a). Instead, the *c'est*-cleft construction has to be used, as in (2b). The *c'est*-cleft is formally related to the English *it*-cleft, but unlike in English, where the use of this construction seems to be quite restricted in the spoken language, the use of the *c'est*-cleft is widespread in spoken French. Its range of use is furthermore much broader than the range of its English equivalent, as some of the following examples will show (cf. also Lambrecht 1984a for further examples and discussion). The tendency to keep subject foci out of initial position is so strong in spoken French that the *c'est*-cleft is frequently used to place even question word subjects after the copula, i.e. in the unmarked focus position, as shown in example (3b):¹¹

- (3) a. *QUI a fait ça?* 'who did that?'
 b. *C'est QUI qui a fait ça?* 'it is who that did that?'

In the pragmatically oriented functional approach to syntax adopted here, the *c'est*-cleft is interpreted as a syntactic device by which a constituent whose referent plays the pragmatic role of focus in a proposition but whose normal position does not mark it as focal is allowed to appear in the preferred

post-verbal position for foci via creation of an additional or “auxiliary” clause of the preferred type, containing the copula *être*, in whose free focus position the constituent can appear. Thus the *c'est*-cleft is essentially a *focus marking* device. As a corollary, the clause which now lacks a focus constituent is marked as non-focal or pragmatically presupposed, i.e. its propositional content is assumed by the speaker to be given or recoverable in the hearer's mind at the time of utterance.

The *c'est*-cleft construction is in a sense a reversal of the pragmatically unmarked sequence, in which a topical element is followed by a predicate containing new information about this element. In the *c'est*-construction, it is the predicate that is pragmatically recoverable, and the clefted NP that adds the new, i.e. unpredictable piece of information. This interpretation of the *c'est*-cleft also accounts for the observed discourse tendency for the clefted constituent to correspond to a *subject* NP or an *adverbial* phrase in the non-clefted version of the sentence, but not to an *object* NP.¹² It is well known that subjects and scene-setting adverbials, but not objects, tend to be topical constituents. Because of this discourse tendency there is a greater functional need for focus marking when the focus falls on one of these normally topical constituents.

While the function of the *c'est*-construction is to mark a constituent as a focus, the inherent discourse-pragmatic status of the focus referent as given, recoverable or new is irrelevant. Although a clefted NP can have a *new* discourse referent, as in (4)

- (4) A: *si, c'était à... comment, celui qui nous a vendu le champ là, c'était eh*
- B: *oui Beri-, c'était BERITO qu'a vendu le champ* (François 1974:764)
- A: ‘yes, it belonged to... what's his name, the guy who sold us the field, that was uh
- B: yes Beri, it was Berito that sold the field’

the *c'est*-cleft can be used also with highly recoverable and even given referents in focus function, as shown in (5), where the clefted NP is a 1p pronoun of the tonic series:

- (5) *tous ceux qu'ya dans le quartier, c'est MOI qui leur a donné des bouts* (François 1974:782)
- all those that are in the neighborhood, it's me that gave them cuttings'

Example (5) shows that the pragmatic function of the *c'est*-construction cannot only be to keep lexical material out of subject position, since the non-clefted version of (5) would have the clitic pronoun *je* as its subject, i.e. would in fact conform to the preferred clause pattern (cf. *tous ceux qu'ya dans le quartier, je leur ai donné des bouts*). However this non-clefted version would not exhibit the intended topic-focus distribution. That the *c'est*-cleft cannot be uniquely defined as a “subject-NP-avoiding” construction is clear of course also from the fact the the clefted constituent does not have to correspond to a subject in the non-clefted version, even though clefted objects are quite rare. Nevertheless the general structural and pragmatic properties of the *c'est*-cleft characterize it as a construction whose primary function is to maintain the preferred clause structure in discourse.

2.1.2. The presentational construction

More directly relevant to the problem of lexical subjects in spoken French is the strong constraint in this language against the occurrence of new discourse referents in initial subject position. The existence of this constraint can be easily verified for indefinite-specific NPs, i.e. for NPs which are formally marked as having referents that the speaker does not assume to be identifiable by the hearer at the time of utterance (Chafe 1976) and that therefore are necessarily new in the discourse. In the corporuses I have analysed I have not found a single instance of an indefinite NP in initial subject position. This constitutes clear evidence for a pragmatic constraint against the introduction of “brand-new” (Prince 1981a) referents in subject position. But the constraint holds also for “unused” (Prince) referents, i.e. for definite NPs whose referents are assumed to be identifiable by the hearer but not yet pragmatically available in the context of the utterance. Virtually all subject NPs in the corporuses have referents that are pragmatically highly recoverable (the only apparent exceptions being definite NPs with generic referents; cf. section 3.1.3).

New discourse referents, in particular new referents that are intended by the speaker to become topics in subsequent discourse, are introduced in spoken French, as in many languages, not in canonical subject position but in post-verbal focus position, by means of a number of *presentational* constructions. In these constructions, the NP expressing the new referent always has a non-agentive case role. At the core of all presentational constructions are semantically highly intransitive clauses containing such verbs as *avoir* ‘to have’,¹³ certain verbs of *motion* and *existence*, and verbs of *perception*. These

clauses are among the lowest in transitivity the language possesses. Their function is not to predicate something about a referent but to simply present or "locate" the referent in the universe of discourse. In most cases the new referent introduced by means of one of these constructions is made pragmatically accessible in the discourse through the intermediary of the referent of a clause-initial clitic. In all cases, the presentational construction conforms to the preferred clause pattern.

The most frequently used of the presentational constructions are no doubt those involving the verb *avoir* 'to have', which I take to be a semantically intransitive verb (cf. footnote 13). This verb is peculiar in the system of French syntax in that although it is semantically intransitive it has two argument positions, a subject and an object position. *Avoir* thus allows for the use of a clause-initial clitic and a post-verbal NP argument without involving the usual transitivity relation between a subject and an object. I believe it is this syntactic-semantic peculiarity that makes *avoir* the preferred candidate for the presentational function. The most frequent use of *avoir* is made in the "idiomatic" sequence *y+a* (spelled *ya* in the following examples), which consists of the distal deictic clitic *y* 'there' and the 3p present form of *avoir* (tenses other than the present rarely occur with this construction, but are attested). Spoken French *ya* corresponds to standard French *il y a*, the dummy subject morpheme *il* being as usual dropped in the spoken language (cf. section 2 and footnote 8).

The sequence *ya NP* is roughly equivalent to English *there is NP* in its non-deictic, existential function and can be used, like the existential *there-construction*, to introduce a previously unidentified referent into the discourse by metaphorically "locating" it in the speech setting (as in *ya un livre sur la table* 'there is a book on the table').¹⁴ But the specific use of *ya* I am interested in here is its occurrence in what I call the *ya-cleft construction*. In this construction, the preferred clause *y+a NP*, which introduces the new referent, is immediately followed by a *qu(i)-clause*, whose subject must be coreferential with the NP and in which the status of the newly introduced referent is changed from new to given. The *ya-cleft construction* is thus a sequence of two clauses of the preferred type in which a referent first appears as a focus (the NP) and then as a topic (with *t = qu(i)*). An example is given in (6):

- (6) *à l'heure actuelle, j'm'plains pas, ya un camarade d'usine qui m'ramène en voiture jusqu'aux Quatre Routes pour prendre l'autobus* (François, 1974:818)

'right now I'm not complaining, (there's) a friend of mine from the factory (who) drives me back to Quatre Routes to take the bus'

In (6) the new referent *un camarade d'usine* is introduced via *ya*-clefting in focus position in the first clause and immediately becomes a topic in the appended *qui*-clause, whose subject (*qui*) must be coreferential with the NP. (The discourse following the fragment in (6) continues to be about the topic *un camarade d'usine*) To summarize, in the *ya*-cleft construction a new discourse referent that the speaker wishes to make available as a topic is introduced as a lexical NP in the focus position of a semantically intransitive clause, so that by the time it assumes the role of a t it has acquired the givenness required for this role. The structure [*y+a NP qu(i) VP*] is a pragmatically governed syntactic device whereby a new referent that plays the role of topic in a proposition is kept from appearing as an initial subject NP. Whether the newly introduced referent actually becomes a "discourse topic", i.e. whether subsequent discourse will continue to be about this referent or not, depends on the intention of the speaker. The relevant feature here, as in the other presentational constructions discussed below, is the avoidance of a lexical subject NP and preservation of the preferred clause sequence.¹⁵

The *ya*-cleft is used not only with indefinite NPs, as in example (6), but also with definite NPs designating referents that are not yet assumed to be recoverable in the discourse (i.e. with "unused" NPs). This is illustrated in the next example:

- (7) A, a Frenchman living in California, looking at pouring rain:
- A: *ça sera l'été un jour?*
 B: *c'est pas du tout normal cette année*
 A: *ya mon frère qui vient dans trois semaines, et j'espère bien qu'i va faire plus beau quand i sera là*
 A: 'is it going to be summer some day?
 B: it's not at all normal this year
 A: my brother is coming in three weeks and I really hope the weather is going to be better when he's here'

The canonical SV equivalent *mon frère vient dans trois semaines* would be distinctly odd in this context, as would be a left- or right- dislocated construction, because the referent of the NP *mon frère* is not yet pragmatically available for topic status at the time A utters the NP, even though the existence of the brother is assumed to be known to the addressee.

A presentational device that is closely related to the *ya*-cleft is the con-

struction in which a new discourse referent is introduced after the verb *avoir* but in which the initial clitic is a personal pronoun. As with *ya*, the new referent is metaphorically ‘located’ in the discourse, the reference point being the initial clitic, whose referent is deictically or anaphorically anchored in the discourse. Here is an example:

- (8) *j'ai eu mon beau-frère, moi, qui a fait un, un, euh Paris-Nice, le, la course de lenteur, il a été pénalisé parce qu'il allait trop vite* (François 1974:817)
 '(I've had) my brother-in-law (me, who) did Paris-Nice, the slowness race, he was penalised because he went too fast'

Semantically this use of *avoir* is odd in that the cooccurrence of the sequence *j'ai* with the following possessive *mon beau-frère* seems redundant. The literal meaning of (8), which is reflected in the English gloss, makes little sense if we try to understand the sentence following the rules of compositional semantics. But the anomaly disappears if we understand the sequence *j'ai NP qui* as the pragmatically governed construction it is in spoken French. The verb *avoir* in its presentational function does not express possession but existence or presence in the discourse. This is particularly clear in these two examples cited by Blanche-Benveniste (1983):

- (9) *moi j'ai encore un formulaire que j'ai pas*
 '(me) I have another form I don't have'
 (10) *moi j'ai pas mon père qui fait les poubelles*
 '(me) I don't have my father who does trash cans'

Both sentences would express logical contradictions if *j'ai* were understood literally as ‘I have, I possess’. Appropriate English glosses are not the ones given above but rather, for (9), ‘there's another form I don't have’ and for (10) ‘my father doesn't do trash cans’.¹⁶

Another strategy French speakers make frequent use of in order to introduce new discourse referents is to present the NP as an object of a *verb of perception*, in particular of the verb *voir* ‘to see’.¹⁷ Examples are given in (11) and (12):

- (11) *puis alors maintenant au printemps alors elles tombent, ya la pousse qui s'fait derrière et tu vois les vieilles qui tombent* (François 1974:783)
 'but now in the spring they fall, the young shoot develops behind, and (you see) the old ones (that) fall off'

- (12) *j'm'rappelle, étant gosse, on voyait les avions passer, on disait ah si c'est joli ça, on voyait tout le monde sortait dans... les rues (...) pour regarder un avion passer, maintenant on voit les gosses qu'ont ça au bout d'une ficelle* (François 1974:816)

'I remember, when I was a kid, you would see the planes go by, people would say oh isn't that pretty, (you'd see) everyone would run out to the street to watch a plane go by, fifty years ago, now (you see) the kids (that) have them at the end of a string'

As in the previously discussed cases, the strategy involving the verb *voir* allows the NP designating the new referent to appear after the verb, in focus position, without the clause having the degree of transitivity normally associated with subject-verb-object sequences. The semantic role of the presented NP is that of an entirely unaffected participant. The proposition containing it does not predicate anything about the referent but simply locates it perceptually with respect to a deictically anchored given referent (the clitic). The semantic non-compositionality of these examples is reminiscent of the semantic anomaly in the *avoir* strategy. In all cases, a periphrastic construction is used to break down into two propositional units a piece of information that would be pragmatically unacceptable if it appeared as a canonical SV(O) sequence. For example in (12) it would be grammatically unobjectionable but pragmatically odd to say *les avions passaient* 'the planes went by' instead of the actually used *on voyait les avions passer*, or to say *les gosses ont ça au bout d'une ficelle* 'the kids have them at the end of a string' instead of *on voit les gosses qu'ont ça au bout d'une ficelle*.

The last presentational device I would like to mention here is the construction known as *subject-verb inversion*. Except in embedded clauses introduced by QU-complementizers (*que*, *quand*, *comment* etc.) and in a few main clauses with adverbs in initial position, the corpuses contain mostly examples in which the subject slot left open after the inversion process has taken place is filled with the dummy subject marker *il*. The inversion construction is illustrated in the following example:

- (13) *un beau soir il descend une de mes voisines* (Albert)
 'one evening one of my neighbors comes down'
- (14) *après il meurt son fils, il meurt sa belle-fille* (Albert)
 'afterwards his son dies, his daughter-in-law dies'
- (15) *il va être construit deux immeubles* (François 1974:830)
 'there are going to be built two buildings'

- (16) *à Genève il s'est créé des cooperatives d'enseignement*
 'in Geneva teaching cooperatives were created'

As in other languages that have similar constructions (whether they involve subject-inversion or not), the predicates are restricted in French to certain verbs of motion (*venir* 'to come', *arriver* 'to arrive', *descendre* 'to come down' etc.) as well as to a few verbs expressing the presence or arrival at, or the departure from, the scene of the discourse or a more general scene (including the "scene" of life, as example (14) shows). Note that the detransitivizing device of the passive and the reflexive-passive can be used to make a predicate accessible to the inversion construction (exx. 15, 16). Unlike in the presentational constructions discussed earlier, the NP designating the new referent in the inversion construction still bears the *subject* relation to the verb.¹⁸ However the fundamental principle is the same here as elsewhere: the grammatically possible canonical SV(O) sequence is avoided in favor of the preferred clause sequence with its initial clitic and post-verbal focus constituent.

2.1.3. Marked topic constructions

The third grammatical device a speaker can use to preserve the preferred clause structure and thus "avoid" the canonical SV(O) pattern is the "dislocation" of a topic NP to the left or to the right of the clause which contains the information about the referent of this NP. Continuing an earlier usage, I will often refer to a left-dislocated NP as a *Topic* NP (T) and to a right-dislocated NP as an *Antitopic* NP (AT). I have presented elsewhere a lengthy discussion of the syntax and pragmatics of T and AT constructions in spoken French (Lambrecht 1981) and I will content myself here with a brief summary. In addition, since T and AT constructions present syntactic and pragmatic alternatives to the SV(O) pattern, it will be appropriate to discuss further examples in connection with the discussion of SV(O) sentences in section 3. The symbol S will be used from now on to designate (non-dislocated) lexical subject NPs in preverbal position.

Representative examples of a Topic and of an Antitopic construction are shown in (17). The two examples will be further discussed, in their full context, in section 3.1 (ex. 19).

- (17) a. *ce lycée, on m'a dit qu'il était pas terminé*
 'this lycee, I was told it wasn't finished'
 b. *où est-ce qu'il est, ce lycée?*
 'where is it, this lycee?'

In these examples, the NP *ce lycée*, which precedes the preferred clause, as a Topic, in (a) and follows it, as an Antitopic, in (b), has the function of lexically expressing the topic referent. Within the preferred clause structures, the subject clitic *il* then functions as the t marker (cf. section 2 above) indicating the syntactic and semantic role the Topic/Antitopic NP plays in the proposition (the expression *où est-ce-qu'* in (17b) functions as a single question word in COMP).¹⁹

Taken as a single group, Topic and Antitopic constructions are more frequently used in spoken French than SV(O) sentences, although the numerical difference is not overwhelming. The number of Topic, Antitopic and Subject NPs in the four corpuses I have analysed is listed in table I. Only those instances of T and AT are counted whose t anaphor is the *subject* of its clause.

TABLE I
Number of Topic, Antitopic and Subject NPs

	François I	François II	François III	Albert	Total
Topic NP	39	36	27	18	120
Antitopic NP	8	10	18	8	44
Total T/AT	47	46	45	26	164
Subject NP	40	13	30	21	104

In table I are counted all occurrences of NPs in the three positions, including non-lexical items like demonstratives, “indefinite pronouns” and quantified non-specific NPs (e.g. *celui-là* ‘that one’, *tout* ‘everything’, *rien* ‘nothing’, *tout le monde* ‘everybody’ etc; cf. section 3.1). As the table shows, even though ATs are always fewer in number than Ts or Ss, the total number of dislocations of both types is systematically higher than the number of Ss, with an average difference of roughly 50%. The proportion would shift further in favor of T/AT if indefinite pronouns and repeated identical subject NPs were not counted (e.g. François I has nine S occurrences of *les enfants* ‘the children’). A considerably higher proportion of Ts is reported in a recent paper by Barnes (1984), in which 159 Ss contrast with 310 Ts (not counting ATs).

From the syntactic point of view, the Topic and Antitopic constructions differ from the previously described Identificational and Presentational constructions in that the lexical NP does not appear in post-verbal focus position but in a “non-relational” position, i.e. in a position outside of the semantic-syntactic network of the proposition. This entails that the T and AT NP is essentially autonomous with respect to the syntax and semantics of the clause

(cf. Lambrecht 1981:53ff). There are important syntactic differences between T and AT constituents, but the main criterion for relational independence from the proposition is the same in both cases: both Ts and ATs can always be omitted from a sentence without causing syntactic or semantic ill-formedness.

This independence of Ts and ATs from the propositions with which they are associated correlates with the pragmatic status of their referents as *recoverable* elements in the discourse. This is of course not to say that their presence is superfluous or redundant. I take their general function to be the *naming*, in its lexical form, of an already recoverable but not yet given referent so that within the proposition expressing the information about it this referent can acquire the givenness status it needs for t function in the clause. As I mentioned earlier, givenness is normally the pragmatic status a topic referent must have acquired in spoken French before it can be involved in an aboutness relation with a proposition. This explains the overwhelming preference for t to be a pronoun.

Although the general pragmatic requirement for dislocated NPs to have recoverable referents is the same for T and AT constructions, there is usually a pragmatic difference between the two strategies. This difference has to do with the different degree of topic *continuity* the referent has in the discourse, i.e. with the different degree to which the referent of the topic expression can count as being pragmatically established in the discourse (for the concept of topic continuity cf. Givón 1983). ATs are more continuous than Ts, i.e. their referents are assumed to be more easily recoverable in the context than T referents (but of course less recoverable than t referents, which need no lexical representation). For the more discontinuous strategies of *topic switching* and *topic establishment* a T construction must be used. The difference between the two strategies can be illustrated with this example:

- (18) Husband to wife, complaining about the food on his plate:

- H: a. *Ça n'a pas de goût, ce poulet*
 b. ?*Ce poulet, ça n'a pas de goût*
 'this chicken has no taste'

- W: a. *Le veau, c'est pire*
 b. ??*C'est pire, le veau*
 'veal is worse'

Even under the assumption that the husband's remark is discourse-initial, the AT device is appropriate in the first turn. The chicken on the plate is already a quasi-established topic referent because of its salient presence in the dis-

course setting, particularly since in the given situation food is an expected topic of conversation. ATs occur frequently in such “pointing” contexts. A topic-shifting T construction would here be an overuse of a more powerful strategy and therefore less appropriate (though not entirely unacceptable, I believe). In the wife’s apologetic reply, however, the topic-shifting T device is obligatory and the more continuous device of the AT would be unacceptable. This is so because the new generic topic *le veau* ‘veal’ is not yet established in the discourse. But the referent of *le veau* is nevertheless pragmatically inferrable because it takes part in the general “meat scenario” or frame that was evoked by the husband’s remark about the chicken. Without this possibility of frame inference neither a T nor an AT would be acceptable and a new-referent-introducing (presentational) construction would have to be used instead.

In summary, the T and AT constructions can be interpreted from a cognitive-pragmatic point of view as grammatical devices whereby speakers can name pragmatically recoverable topic referents outside the proposition in order to make them available for given t status within the clause. Whereas the previously discussed Presentational constructions can be defined as strategies “promoting” a referent from focus to t status, the Marked Topic constructions are strategies promoting an already recoverable (T or AT) referent to t status. In all cases however, application of the strategy results, in one way or another, in preservation of the preferred clause structure [clitic + Verb (X)].

One peculiarity of the “referent promotion” that takes place in the AT construction is that by the time the AT referent is named in its lexical form it has already been referred to in *non-lexical* (clitic) form inside the clause. It is important to realize that this does *not* entail that the AT is an *afterthought* in the proper sense of this word (as has often been claimed). The speaker who taining the associated t and not after some clause higher in the tree structure. It also explains why, in those cases in which the t is a genitive or dative to. But the speaker can expect the hearer to be able to temporarily “hold” the propositional information until the AT is uttered, precisely because the occurrence of the t pronoun is a signal (under normal cooperative conditions) that its referent is going to be named immediately afterwards and that this referent cannot be new in the discourse (because new referents do not have t agreement). This explains why — unlike the T, which can be indefinitely far removed from the proposition about its referent — the AT is subject to the “Right-Roof Constraint”, i.e. must appear immediately after the clause containing the associated t and not after some clause higher in the tree structure. It also explains why, in those cases in which the t is a ‘genitive’ or ‘dative’

clitic, the AT, but not the T, must receive a case marking corresponding to the case of the clitic, in the form of the preposition *de* or *a*.²⁰

I will now turn to the analysis of SV(O) constructions involving lexical subjects, whose occurrence constitutes an exception to the general tendency in the language towards preservation of the preferred clause structure. In the course of the discussion, the SV(O) pattern will be contrasted whenever necessary with topic marking as well as with presentational constructions.

3. The status of lexical subjects

3.1. High and low topicality of referents

As I observed earlier, all occurrences of S, T and AT NPs in the corporuses have referents that are pragmatically recoverable at the time the NP is uttered. Thus, even though there can be subtle differences in referential continuity between these different strategies, the principal difference is not one of the inherent pragmatic status of the NP referent in the discourse. Rather the general claim I will make concerning the difference between SV(O) constructions and those constructions that preserve the preferred clause unit is that the choice of one or the other strategy is to a large extent determined by the higher or lower degree of *topicality* the referent of the NP has in the discourse. This difference in topicality often correlates with the difference between *foregrounded* and *backgrounded* parts of the discourse, in the sense of Hopper (1979) and Hopper and Thompson (1980). Lexical subject NPs in spoken French strongly tend to have referents whose topic status is low, and they often occur in backgrounded portions of a discourse (discourse being mostly synonymous with conversation in this study). The pragmatic devices described in the first part of this paper on the other hand tend to be used as foregrounding devices by which referents are singled out as more salient participants in the ongoing discourse. The following parameters will be shown to be criterial for the choice of one or the other of these strategies:

Topicality parameters

High Topicality	Low Topicality
more salient referent	less salient referent
more anaphoric referent	less anaphoric referent
more specific referent	less specific referent
higher transitivity of clause	lower transitivity of clause
little or no syntactic subordination	frequent syntactic subordination

These parameters interact with and depend on each other in various ways. Higher topicality of a referent entails that the referent is a more salient protagonist in the discourse. And salience in the discourse entails that the referent will tend to be a topic in more than one clause, i.e. will extend anaphorically over a stretch of discourse. A more salient referent is also likely to be more specific and individuated, because people tend to talk more about things whose identity matter than about unspecified things. Furthermore a topic referent is usually described as being involved in some action or process rather than in a state. And actions and processes tend to involve more agentive participants. Referents with high topicality will therefore tend to appear in clauses of higher transitivity. And high transitivity is usually considered to be a property of main rather than subordinate clauses.

3.1.1. Topicality and salience

I would like to begin with a text example that illustrates the general topicality properties of the three main devices at hand, i.e. the T, AT and S devices. The example is a fragment from a conversation about a new housing project in a suburb of Paris. The relevant NPs are in boldface:

- (19) A: *ya des écoles aussi?*
 B: *ah ya des écoles, ah oui ya des écoles (...)*
 A: *et le lycé d'Argenteuil (T_i)...*
 B: *ça y est*
 A: *... ça va être par là?*
 B: *oui*
 C: *non, écoute, moi je n'sais plus, parce que là ce lycée que tu m'dis sur le boulevard (T_j)*
 B: *Oui sur le boulevard*
 C: *ba alors, ce lycée (T_j) on m'a dit qu'il était pas terminé et qu'i'serait à peine termine pour quand les enfants (S) pren-draient au lycée, alors je voudrais...*
 B: *alors peut-être*
 C: *...savoir où est-ce qu'il est, ce lycée (AT_j), si c'est celui qu'tu m'dis qu'ya déjà les enfants dedans (François 1974:769)*
 A: are there schools there too?
 B: sure there are schools, oh yes there are schools
 A: and the Argenteuil lycée...
 B: it's right there

- A: ...is going to be over there?
- B: yes
- C: no, listen, (me) I don't know anymore, because there this lycée you're telling me on the boulevard
- B: yes on the boulevard
- C: well, this lycée, I was told it wasn't finished and it would hardly be finished for when the children would enter the lycée, well then I would like to...
- B: well maybe
- C: ...know where it is, this lycée, if it's the one you're telling me that has already the children in it

After the new discourse referent *des écoles* 'schools' is introduced in the first turn by means of a presentational device, the topic T_i , can be established directly because its referent is inferable as an instance of the set *écoles*. In the somewhat confusing discussion following the first mention of this topic by speaker A, speaker C tries to identify a specific highschool whose construction is not finished and to distinguish it from another school which speaker B has claimed earlier to be already used by pupils. The relevant fact here is that speaker C uses the T device first to establish (*ce lycée que tu m'dis sur le boulevard*) and immediately afterwards to confirm (*alors, ce lycée*) a parallel topic T_j , but later on resorts to the AT device (AT_i) to continue commenting on the previously established topic T_i .

There is a clear pragmatic difference between the underlined T and AT constituents referring to the lycée and the subject NP *les enfants* 'the children'. Whereas the referents of the T and AT NPs are in some intuitive sense what the propositions they are associated with are *about*, it is intuitively much less obvious, in the context of (19), that the subject *les enfants* expresses a referent about which the predicate *prendraient au lycée* adds some new information. The non-specific referent of the phrase *les enfants* does not seem to have the necessary salience in the context to be considered a topic at all. Rather the entire information contained in the *quand*-clause is in a sense semantically and pragmatically subordinated to the sentence topic *le lycée*. This semantic and pragmatic subordination is then reflected in the syntactic subordination of the *quand*-clause. This becomes clear if we apply the *aboutness* test (Reinhart 1982) to verify the topic status of the NP. It would make sense to say "I was told about this school that the students wouldn't be able to use it" but it would hardly make sense, in the context of this example, to say "I was told about the students that the school wouldn't be finished". Even though in

the proposition *les enfants prendraient au lycée*, taken in isolation, we can say that the predicate is about the subject, we cannot say that this aboutness relation holds in the particular context of example (19). In context, certain sentences, like the one containing the subject NP *les enfants*, evoke a single scene, an event or a state in which the subject referent matters only insofar as it is a necessary component in the scene, not as an independent discourse participant with topic status.²¹

The association of high topicality with the T/AT device and of low or no topicality with the S device becomes particularly obvious in contexts where one and the same referent is coded with one or the other device depending on its varying salience at different points in the discourse. Such a case is illustrating in the following example. The topic of the discourse from which (20) is taken is the youngest daughter in the family and her problems in passing a certain highschool exam. The daughter is referred to in the first passage with the clitic *elle* 'she'. The clitic *i* 'they' at the beginning refers to the school authorities; *Mademoiselle G.* is the daughter's teacher; and *ça* 'it' at the end of the second passage refers to *l'âge* 'the age' of the child:

- (20) A: *i regardent l'âge, alors* Мадемоиселле Г. (*S*) *m'a dit du fait qu'elle (t_j) est tout de même - oh évidemment faut dire c'qu'il est, y en a beaucoup qui passent à dix ans, normalement elle (t_j) est de l'âge*
 (twenty-two turns)
- A: *ah oui j'sais bien, m'enfin quand même, regarde ma... moi je n'sais pas maintenant, Mademoiselle G.* (*T_j*) *c(t_j)'est comme tout hein, elle(T_j), c(t_j)'est une ancienne institutrice, hein, et elle (t_j) *m'a dit ça joue quand même un rôle chez les enfants* (François 1974:773)*
- A: they look at the age, well Miss G. told me since after all she is - oh you gotta admit there are many who pass at age ten, normally she's reached the age
 (.....)
- A: oh yes I know, but nevertheless, look my... me I don't know now, Miss G. she's really, uh, (she) she's a former elementary school teacher, uh, and she told me it plays a role after all with the children

The school teacher *Mademoiselle G.* has not been mentioned in previous discourse but is pragmatically inferable from the school frame evoked in connection with the daughter. Otherwise the NP could be neither a S nor a T or

AT. When Mademoiselle G. is mentioned for the first time, as S_i, the salient sentence (and discourse) topic is the daughter. The clitic *elle* unambiguously refers to this topic, not to the subject NP. The teacher is only casually mentioned in relation to the daughter and there is no anaphoric pronoun referring to her after this mention. Her topic status is low, therefore the NP appears as an S. In the second passage however, twenty-two turns later in the conversation, the teacher Mademoiselle G. acquires greater salience, even though the primary topic is still the daughter. Her professional background is now mentioned and her opinion in school matters is reported. The referent has acquired topic status, therefore the coding of the NP changes from S to T, with the anaphoric clitics (*c'* and *elle*) now referring to her, not the daughter.²²

The difference between high and low topicality of referents and the association of S coding with low pragmatic salience is well illustrated also in the following passage, which is taken from a discussion about the problem of obesity in the United States (data from Barnes 1983). Speaker M. is a French-woman married to an American. The passage narrates the first encounter between the speaker's parents and the parents of her husband:

- (21) M: *ben alors, moi je vais te dire, quand mes parents* (S) *sont venus pour le mariage, alors euh... évidemment, mon père* (S) *a la même taille que moi, ma mère* (S) *est plus petite, euh, mon père* (S) *fait euh cent dix pounds cent dix pounds, c'est à dire que cinquante deux kilos*
- E: *oui*
 M: *cinquante deux kilos*
 C: *c'est un moustique!*
 M: *mais quand on l'a vu, alors la famille de Bill... évidemment, son frère* (T), *il fait deux cents et quelques pounds*
 E: *deux fois ton père!*
 M: *son père* (T), *qui, qui est vraiment trop gros... la mère* (T) *bon, ça va, mais enfin, enfin, une famille typiquement américaine de c'point d'vue-là. Quand ils ont vu papa, tout petit, tout chétif, ya mon beau-frère* (ya-cleft) *qui l'a porté comme ça. Il l'a soulevé comme ça. Il en revenait pas de sa légèreté!*
 M: well then, (me) I'm going to tell you, when my parents came for the wedding, then uh... of course, my father is the same size as me, my mother is smaller, uh, my father weighs, uh, 110 pounds, 110 pounds, that is, only 52 kilos

E: yes
 M: 52 kilos
 C: he's a mosquito!
 M: but when people saw him, well, Bill's family... of course his brother he weighs two hundred and some pounds
 E: twice as much as your father!
 M: his father, who, who is really too fat... the mother, well she's ok, but anyway, anyway, a typically American family from that point of view. When they saw papa, so little, so puny, my brother-in-law carried him like this. He picked him up like this. He couldn't get over his lightness!

The main event speaker M. wishes to narrate is the encounter of the two families, highlighted by the striking physical difference between them. In order to introduce this event, M. first gives a minimum of background information, in the form of the preposed adverbial clause *quand mes parents sont venus pour le mariage* 'when my parents came for the wedding', in which the referent of the NP *mes parents*, being an element of the background, is characteristically coded in S form. However the speaker then realizes that this background information is not sufficient because her audience knows nothing about her parents' physical appearance. She therefore interrupts herself at the beginning of the main clause, which is introduced by *alors* 'then', in order to provide more information about her parents. She does so in the form of three short clauses describing her father and her mother, preceded by the pragmatic particle *évidemment* (roughly 'of course'), which marks the information provided in these clauses as the obvious yet necessary background. The relevant fact here is that even though these clauses clearly present information about her parents, i.e. even though *mon père* and *ma mère* can be interpreted as the topics of these clauses, the referents are coded as lexical subject NPs. S coding thus marks these referents as pragmatically backgrounded elements with respect to the yet to be narrated main portion of the story.

Having provided the background information about her parents, speaker M. then proceeds to narrate the main event. The form she chooses for the narration is the same as in her first attempt: an adverbial clause followed by a main clause introduced with the adverb *alors*. However at this point the speaker again realizes that in order to make the main event understandable she has to provide more background information, this time about her husband's family. Again she interrupts herself to provide this infor-

mation, and again she uses the particle *évidemment*, marking the information both as necessary and as obvious. This time however, in describing the physical appearance of her husband's family, beginning with her brother-in-law, the speaker resorts to the T strategy. Note that this change in syntactic coding occurs despite the fact that the descriptive vocabulary is almost identical in both passages. I believe that this difference in syntax, in spite of the similarity in semantic content, is the result of two competing pragmatic factors. On the one hand the description of the American family represents background information with respect to the main event, on the other hand this background itself pertains directly to the issue of obesity, i.e. to the discourse topic of which the whole narration is intended to be a relevant illustration. Thus compared to the members of the French family, the Americans described here are more topical discourse referents. This difference in relative topicality is then expressed in the formal difference between S and T coding.

Having now provided all the necessary elements for the audience to understand the main piece of information she is about to present, the speaker, for the third time, begins her narrative with an adverbial *quand*-clause. And this time the following main clause expresses the main event, which is the high-light of the narration. Of particular interest here is the use of the presentational *ya*-cleft construction as a foregrounding device for the presentation of salient new information. Even though the referent of the *ya*-clefted NP *mon beau-frère* is clearly already recoverable, i.e. even though the newness of the referent which is normally required in the *ya*-construction does not obtain, the more dynamic presentational construction is used instead of the dislocation device, which would be less acceptable in this context. Due to the fact that in the presentational *ya*-construction normally a new referent is introduced into the discourse and immediately followed by a proposition presenting new information about this referent, this construction has a pragmatic "all new" character that makes it the ideal coding device for the pragmatic function of *event-reporting* or for the marking of a piece of information as *unexpected* (cf. Lambrecht 1984a). This dynamic function can be exploited here, despite the fact that one of the appropriateness conditions for the presentational device, the newness of the referent, is not satisfied.

Note that in all three syntactic devices used here, the T, S and *ya* devices, the relevant selection criterion is neither a difference in the inherent semantic features of the nouns (all nouns are kinship terms) nor a difference in the pragmatic status assigned to the referents in the discourse (all referents are

equally recoverable from the evoked kinship frame), but rather a difference in the relative salience and topicality of the referents in the context.

In view of examples like (21) it seems necessary to define the pragmatic relation topic-of as a *scalar* notion. Even though in the passages describing the French and the American family the predicates of all clauses can be said to add information about the different family members, i.e. even though the various NPs all are in some sense the topics of the clauses with which they are associated, the different referents are topical to a higher or lower degree in their respective contexts. Nevertheless on the syntactic level the scalar notion becomes necessarily a polar one: within the background-foreground contrast expressed in (21), only the more foregrounded referents, i.e. those with relatively higher topicality, are formally marked as topics.

3.1.2. Anaphoric continuity

As I mentioned earlier, the non-salient status of an S referent in a discourse entails that such a referent is normally not anaphorically referred to beyond the single clause in which it appears. But a referent that is salient enough to acquire topic status typically extends anaphorically over more than one clause. This difference in anaphoric continuity between more vs. less topical referents can be observed in all three fragments discussed so far. A particularly clear case is the difference in anaphoric “scope” between *le lycée* and *les enfants* in example (19), which was analysed in section 3.1.1. As an apparent exception to the principle that associates high anaphoricity with topic NPs and low anaphoricity with subject NPs we might cite the case of the subject NP *mon père* in (21). This NP is anaphorically referred to after its first mention with the clitics *c'* and *l'*. It may be possible to explain this exception psychologically, as a result of the unplanned character of speaker M’s discourse, in which the referent gradually takes on a degree of salience it was originally not meant to have. In addition, since we analysed the referent of *mon père* as a case of *relative* low topicality, a certain degree of anaphoric continuity seems naturally compatible with this subject referent.

The relationship between high topicality and referential continuity is described by Hopper (1979) in a discussion of Old English narrative prose:

Now although new characters can be, and often are, introduced in foregrounded narrative, it is usually with a view to a role of some kind in the narrative, which is then related immediately; the casual presentation of new personages is characteristic rather of backgrounded material. (...) (We find) high topicality of the subject, which is almost always either an anaphoric pro-

noun or a definite noun without focus. The characteristic “oldness” of the subject in foregrounding is, of course, a natural consequence of the tendency for narratives to be concerned primarily with a small number of participants and, hence, to have continuity of topic-subject in the main story-line. In background, on the other hand, a variety of other topics can be introduced to support and amplify the story-line. (Hopper 1979:224)

Although the rules for literary written prose are of course not in all respects comparable to the rules of spontaneous conversation (in particular in spoken French definite subject NPs do not code referents with high topicality), the common syntactic characteristics are obvious in Old English and in contemporary spoken French.

3.1.3. Referential specificity

An important semantic parameter influencing the degree of topicality of a referent is the parameter of referential *specificity*. As a general rule, the less specific a referent, the more likely it is to be coded in S form, although non-specific referents do sometimes appear as T or AT NPs. This is a natural consequence of the fact that non-specific referents are inherently less topic-worthy, i.e. less “interesting” to talk about, than specific, individuated referents. In spoken French, NPs designating non-specific referents can be divided into two classes: those which, for pragmatic reasons, tend to be S-coded but which can grammatically also appear as Ts or ATs, and those which the grammar only allows in S-coding. The first group is the set of *generic* NPs, the second group is the set traditionally referred to as *indefinite pronouns*.

An already discussed example of a non-specific *generic* S is the NP *les enfants* ‘the (school) children’ in (19), which contrasted with the highly topical and specific NP *le lycée* ‘the highschool’. Two more examples of generic S referents, taken from the same conversation as (19), are given in (22) and (23).

- (22) *pour le moment, les enfants qui vont au lycée vont à Champagne là haut* (François 1974:769)
‘for the time being the children that go to (the) lycee go to Champagne’
- (23) *tu comprends, les élèves qu'on trouve en sixième ont pour la plupart...auront leur douze ans revolus dans l'année* (François 1974:773)
‘you know, the children that you find in sixth grade have for the most part... will have completed their twelfth year during the year’

The S phrases in boldface in these two examples do not refer to specific individuals or groups of individuals, but to all members of a particular class (the class of all high school students in a geographic area (22), and the class of all sixth-graders (23)). In (23), the class is then restricted by the following quantifier phrase *pour la plupart* ‘for the most part’.²³ Generic NPs are often interpreted as a subset of (universally) *quantified* NPs, and quantification is to some extent incompatible with the pragmatic relation of aboutness (cf. Reinhart 1982, and below). There are many more examples of S-coded generic referents in the corpuses, e.g. *les enfants* ‘children’ (with nine occurrences in Francois I), *les cités* ‘housing projects’, *les gens de la mer* ‘people who live near the ocean’ etc.

Examples (22) and (23) are particularly interesting in that they involve complex subject NPs, i.e. NPs of the type sometimes characterized as “heavy”. Heaviness of an NP is sometimes invoked as one of the psychological factors favoring dislocation: because it can happen with such NPs that a clause is separated from its subject noun by an intervening relative clause, the thus created distance between the subject and the verb is thought to favor the “repetition” of the subject before the verb, in the form of a “resumptive” pronoun. The fact that in spite of the heaviness of the subject phrases dislocation does not take place in (22) and (23) may be interpreted as another piece of evidence that dislocation is essentially a *pragmatically* motivated phenomenon, involving the status of referents in a discourse, not a purely syntactic process determined by formal properties of the sentence.

That genericity is not in principle incompatible with topic status is shown in the following example, in which a semantically highly non-specific NP (*les gens* ‘(the) people’) is coded first as an S, then as an AT. The example is taken from a conversation about the difficult living conditions in Marseille under the Nazi occupation.

- (24) *tenez, quand on vous joue des films de cette époque-là, hein, ben, les gens (S) doivent se dire, mais c'est pas vrai, ils vivaient comme ça, les gens (AT), fallait toujours se cacher (Albert)*
 ‘look, when they show you movies from that period, uh, well, people must say to themselves, I can't believe it, they lived like that, the people, you always had to hide’

In its first occurrence, the NP *les gens* refers to the entirely indefinite set of all people who might watch these movies. It is this sort of highly indefinite referent that often gets grammaticalized in languages into an indefinite 3p pronoun

(cf. e.g. French *on* from Latin *homo* ‘man’, or German *man* etc.). It is clear here that the predicate *doivent se dire* does not add information about the “referent” of *les gens*. The NP is not a topic, therefore S-coding is used. But in the second occurrence, *les gens* refers to the people living under the occupation and whose life is described in the movies mentioned in the example. The proposition *ils vivaient comme ça* adds information about these people, as does the last clause in the fragment (and further discourse following it in the corpus). Therefore the NP is coded as an AT. Example (24) contains a revealing minimal pair demonstrating that non-specific referents can be topics when they play a role of some sort in the discourse but must be S-coded when such a role is not intended.

The case of the indefinite S *les gens* in (24) with its quasi-pronominal character is similar to the case of so-called *indefinite pronouns*, which cannot normally appear dislocated in T or AT position. Such indefinite NPs are *quelqu'un* ‘someone’ (in its non-specific sense), *rien* ‘nothing’, *tout* ‘everything’, *tout le monde*, *tous les gens* ‘everybody’. These quantified NPs have in common that they either do not have any referent at all or that their referents are so indefinite that they cannot be talked about, i.e. that no information can be added about them. Consequently they do not appear as Ts or ATs in the corporuses. However it sometimes happens that an indefinite quantified NP globally refers to the members of a specific set, and in such cases topic status is again possible. One such case is the NP *tous* ‘all of them’ in example (25):

- (25) A: *oui, enfin, lui, Guerini (?i) meurt (...) après il meurt son fils, il meurt sa belle-fille*
 B: *tous i' sont morts, tous (Albert)*
 ‘yes, okay, (him) Guerini (?he) dies (...) afterwards his son dies, his daughter-in-law dies all of them they died, all of them’

The NP *tous* here refers to the set of all members of the specific family being talked about and as a consequence T-coding is used.

3.1.4. Transitivity

An important parameter associated with the use of subject NPs and their backgrounding function in discourse is the *low transitivity* of the clauses in which they occur. I am using ‘transitivity’ here as a scalar notion, in the sense of Hopper and Thompson (1980), i.e. as a global property of a clause determined by various semantic, syntactic and pragmatic parameters. In spoken

French Ss occur in their vast majority in *intransitive* clauses, in particular in clauses containing the verb *être* ‘to be’. A text count of the François corpus revealed the following clause types. Among the 83 clauses containing subject NPs, 69 (83%) are syntactically intransitive and have semantically non-agentive subjects. In the few cases where a post-verbal NP cooccurs with these Ss this NP is semantically a locative or it is a predicate noun (as in *les cités longent la ligne de ceinture* ‘the housing projects are located along the belt line’, *la femme était marchande de légumes* ‘the wife was a produce seller’). More than half of the intransitive clauses have *être* ‘to be’ as their predicate (38 occurrences). The remaining 31 intransitive clauses have stative predicates (*longer* ‘to be located along sth’, *se reposer* ‘to rest’ etc.), predicates that indicate a change of state (*se développer* ‘to develop’, *se former* ‘to form’ etc.) or predicates that express motion (*venir* ‘to come’, *partir* ‘to leave’ etc.).

In the 14 syntactically transitive clauses containing lexical subject NPs, i.e. in the clauses with more or less agentive subjects, we find six occurrences of *dire* ‘to say’, two occurrences of *raconter* ‘to tell’, and single occurrences of *donner* ‘to give’, *remettre* ‘to hand’, *mettre* ‘to put’, *se regarder* ‘to look at one-self/each other’ (a reflexive-reciprocal verb, thus a verb of reduced transitivity), *tirer* ‘to pull’ and *photographier* ‘to photograph’. Note that in almost all of these transitive clauses the S is the only lexical NP element. The object is typically a clitic pronoun or it is not expressed at all. Non-expression of the object is observable in particular with the verb *dire* ‘to say’ (as in *Mademoiselle G. m'a dit* ‘Mademoiselle G. told me’, ex. 20). Concerning the verb *dire*, it is interesting to refer to a recent paper by Munro (1982), in which ‘say’ verbs are cross-linguistically analysed as a special class of *intransitive* verbs. Munro observes that non-expression of the object of ‘say’ verbs is a common feature in many languages. If, following Munro, we count the six occurrences of *dire* ‘to say’ and the two occurrences of *raconter* ‘to tell’ as occurrences of intransitive verbs, we eliminate the only recurring exceptions to the rule which associates Ss with intransitive clauses. Finally it should be observed that among the few occurrences of agentive S’s many are *proper names*, whose exceptional status as “pronoun-like” NPs will be discussed in section 3.1.6.

3.1.5. Syntactic subordination

The last parameter associated with lexical subject NPs which I would like to discuss here is the relationship between the backgrounding function of SV clauses and the fact that they frequently occur as *subordinate clauses*. The

correlation between backgrounding and syntactic subordination is well-known (cf. e.g. Hopper and Thompson 1980), as is the correlation between certain so-called main-clause phenomena and pragmatic foregrounding (Hopper and Thompson 1973, Givón 1979).²⁴ In spoken French, S's generally appear more freely in embedded clauses than T's or AT's. Among the 83 subject NPs in the François corpus, 22 (26,5%) occur in embedded clauses. But only 10 out of the 102 occurring T NPs (9,8%) and 4 out of the 36 AT NPs (11,1%) are found in subordinate position. As recent research has shown (e.g. Haiman and Thompson 1984, Lakoff 1984), the difference between main and subordinate clauses is not as clear-cut as has usually been assumed and is often a matter of degree rather than of categorial distinctness. In order for a comparison between embedded Ss and embedded Ts/ATs to be fully meaningful it would therefore be necessary in each case to determine the degree to which the clause can be considered subordinate, taking into account such factors as the preposing vs. postponing of the embedded clause with respect to the matrix as well as the presuppositional status of the different preposed and postposed clauses. Not being able to go into sufficient detail here I will content myself with presenting a few clear cases illustrating the association of backgrounded S status and syntactic subordination.

The occurrence of subject NPs in temporal *quand*-clauses was already mentioned in the discussion of examples (19) and (21) above. Possible psychological evidence for a quasi-grammaticalized association of low topicality with syntactic subordination can be seen in the following fragment taken from a discussion of the respective advantages of the ocean and the mountains as vacation places:

- (26) A: *c'est plus varié, bah oui mais tu parlera ça à des gens de la mer...chez nous on a une Bretonne, elle te dira qu'la mer* (S) *n'est...*
 B: *oui ah ah*
 A: *...jamais la même*
 B: *hein? ah ba ah*
 A: *elle te dira la mer* (T) *c'est jamais la même* (François 1974:796)
 A: 'it (i.e. the mountains) is more varied, okay yes, but you say that to ocean people...at our place we have a woman from Brittany, she'll tell you that the ocean is...'
 B: yes uh uh
 A: ... never the same
 B: what? oh well uh

A: she'll tell you the ocean it's never the same'

Since the referent of *la mer* is topical in the context of (26) the speaker may have felt that S-coding of this referent, motivated by an unconscious association of the conjunction *que* with S, was not the appropriate coding. This may then have motivated the switch from S to T and from an embedded to a main clause. I have found no other examples of such apparently automatic association between the syntactic status of the clause and the pragmatic status of a referent, and it may therefore be premature to speak of grammaticalization here.

A relatively strong correlation between syntactic subordination and S-coding is found in the constraint against left-dislocation in subordinate clauses that are parts of syntactic "islands", in particular in relative clauses (cf. Lambrecht 1981:58ff for some discussion). An example of S-coding in a relative clause is given in (27):

- (27) A: *alors, tu as du chèvre-feuille maintenant...*
- B: *ah le chèvre-feuille, j'l'ai adopté*
- C: *ah oui du chèvre-feuille*
- A: ...*que maman t'a donné* (François 1974:782)
- A: so you've got honeysuckle now...
- B: oh the honeysuckle I've adopted it
- C: oh yes honeysuckle
- A: ...that mom gave you

A T construction would seem less acceptable here:

- (28) ? *le chèvre-feuille que maman elle t'a donné il a pas pris*
 'the honeysuckle that mom she gave you it didn't catch on'

Clear acceptability judgments are hard to come by in the domain of topic embedding.²⁵ Pending further research, the correlation between S-coding and syntactic embedding has to be characterized as relatively weak, but nevertheless observable.

3.1.6. A class of exceptions: Proper names

I should mention here one class of exceptions to the general rule which associates S-coding with low topicality and pragmatic backgrounding. This exception has to do with the particular referential properties of *proper names* and certain common nouns that function like proper names. In any discourse, certain referents occupy particularly prominent positions and are

therefore pragmatically more easily accessible than others. This is always the case for the speaker and the hearer, who are deictically referred to with 1p and 2p pronouns. But there can be other referents in a discourse whose recoverability is almost as high as that of the speaker/hearer, because they are physically present as prominent participants in the speech situation or because they stand in a particularly close relationship with the speaker/hearer and are in a sense “mentally present”. Such highly recoverable referents are typically the members of the family of the speaker and/or the hearer and sometimes close friends. They are referred to with proper (first) names (like “Mary” or “John”) or with certain name-like expressions (like “mommy” or “daddy”). In a sense, such expressions have a function analogous to the function of deictic or anaphoric pronouns, because *in a given context* names, like pronouns, “point to” or identify their referents directly rather than via a category out of which the hearer has to pick the intended individual.²⁶ Therefore these expressions can sometimes (but by no means always) be “substituted” for t clitics. They will then appear as Ss, but their topicality will be much higher than that of other lexical subjects.

The following example illustrates this peculiar use of proper names designating familiar referents. The two main referents in (29), *Guerini* and *Nicolas*, are salient topics in the discourse preceding this fragment. Guerini is a person the speaker had known a long time ago, and Nicolas is the speaker’s husband, who also participates in the conversation as speaker B:

- (29) A: *oui enfin lui, Guerini (?i) meurt - Guerini ou Martini i's'ap-pelait, j'm'en souviens plus, ah oui, bon*
 B: *non Guerini, Guerini*
 A: *après, il meurt son fils, il meurt sa belle-fille*
 B: *tous i'sont morts, tous*
 A: *et Nicolas (S) est toujours en vie, lui, parce qu'à l'époque il était maigre, mon mari hein (Albert)*
 A: ‘yes okay (him) Guerini (?he) dies - Guerini or Martini was his name, I don’t remember, oh yes okay
 B: no Guerini, Guerini
 A: afterwards his son dies, his daughter-in-law dies
 B: all of them they died, all of them
 A: and Nicolas is still alive, (him), because at that time he was skinny, my husband uh’

The syntactic status of *Guerini* as a T or an S is not entirely clear because the

3p agreement clitic *i* is phonetically indistinguishable from the final *i* in *Guerini*. However T-coding seems highly likely. But the case of *Nicolas* is clear. Even though the topic *Nicolas* is contrasted with the topic *Guerini*, i.e. even though the appropriateness conditions for the topic-shifting use of the T device clearly obtain, the proper name appears directly in subject position. Contrastiveness is instead expressed through the AT pronoun *lui* (cf. footnote 22). It is clear that the NP does not designate a backgrounded referent in this context and that the proposition is *about* the topic *Nicolas*. That the NP *Nicolas* has here a *quasi-pronominal* function is confirmed by the fact that an AT pronoun like *lui* can normally occur only in coreference with a t clitic or with another T or AT constituent, but not with an S (cf. e.g. the contrast between *i've bien, lui* 'he's doing fine, him' and *?cet homme va bien, lui* 'this man is doing fine, him'). Striking evidence for the special status of the proper name *Nicolas* is also provided by the fact that in the same sentence the common noun *mon mari* 'my husband', although coreferential with *Nicolas*, is *not* coded as an S but as an AT.

As another example consider (30), in which the noun *maman* 'mom' functions like a proper name:

- (30) A: *moi j'dis allez, en vacances j'aime mieux aller à Charreau, c'est pour s'retirer*
- B: *ba oui mais maman (S) se repose pas à Charreau, ya trop de bruit à l'hôtel* (François 1974:806)
- A: me I say okay, on vacation I prefer going to Charreau, it's to get away
- B: okay yes but mom doesn't get any rest in Charreau, there's too much noise in the hotel

Even though the individual referred to as *maman* does not participate in the conversation, the high pragmatic prominence of this referent allows the speaker to code it as a quasi-pronominal subject. And as with *Nicolas* in (29), S-coding does not entail backgrounding here. Note that this syntactic coding of *Nicolas* and *maman* is pragmatically different from S-coding in the case of e.g. *mes parents* 'my parents' or *mon père* 'my father' in example (21) above. Although these nouns also designate a close kinship relation with the speaker, they are regular common nouns, and the topicality of their referents is low (cf. also the subject NPs *mes enfants* and *ma soeur* in example (31) below). The case illustrated by (29) and (30) thus constitutes an exception to the general rule which associates S-coding with low topicality and pragmatic

backgrounding.

3.1.7. A short narrative

I would like to conclude this section on the status of lexical subject NPs with the discussion of a short narrative in which the pragmatic functions of the different syntactic constructions described in this paper are well illustrated. The speaker in this narrative is a working class woman from Marseille who is talking about the food shortage under the Nazi occupation. The passage occurs at the beginning of the corpus:

- (31) 1 *Pour nous personnellement voyez, nous personnellement parce que - je vous dis mes enfants (S) se contentaient de peu - je vais vous citer un cas, euh, je montais souvent à... ma soeur (S) avait un bar à Aubagne - et elle - et ce bar (S) était fréquenté beaucoup par des paysans - et avec les paysans ma soeur (S) avait de tout - ma soeur avait de tout - et je montais une fois par semaine avec mes enfants - et mes enfants (S) se faisaient un banquet là-haut parce que ma soeur (S) les privait de rien, hein - j'avais la petite de ma soeur (present. O) - ma nièce - si vous aviez vu cette petite*
- 10 *- elle avait de tout - elle mangeait des frites avec, euh, de la bonne huile - des bons bifteks - elle était maigre comme un clou - maigre comme un clou - mes enfants (T) qu'est-ce qu'ils avaient eu à manger - peu - peu mais tout ce qu'i mangeaient il'l mangeaient euh avec appetit - et elle qu'elle avait de tout (T)*
- 15 *elle mangeait tout avec délicatesse hein - mes enfants (T) ils avaient une figure euh on aurait dit des lunes - et elle (T) on aurait dit qu'elle sortait de Buchenwald.*

(Albert)

'for us personally you see, we personally because - I'm telling you, my children were happy with very little - I'm going to tell you a case, uh, I would often go to... my sister had a bar in Aubagne - and she - and this bar was frequented often by farmers - and with the farmers my sister had everything - my sister had everything - and I would go once a week with my children - and my children would have a banquet up there because my sister didn't deprive them of anything - I had the little daughter of my sister - my niece - if you had seen this girl - she had everything - she would eat French fries with uh good oil - good steaks

- she was skinny as a nail - skinny as a nail - my children, what did they have to eat, little - little - but everything they ate they would eat with appetite - and she who (she) had everything she ate everything in a picky manner uh - my children they had uh faces like moons - and she she looked like she came right out of Buchenwald.'

The narrative proper, which starts in line 3 with the sentence *je vais vous citer un cas* is divided into two parts, the background information (line 2-8) and the main story (9-19), in which the speaker makes a comparison between the eating habits of her own children and those of her sister's daughter. Out of the seven clauses (or eight, if we count the fragment in 3) that make up the background portion, six contain subject NPs. The referents of all these subjects are restricted to the one clause in which they occur, i.e. they are not anaphorically referred to in subsequent clauses. Although the referent of *mes enfants* (2) is to some extent topical given that the whole narrative is about the speaker's family and in particular her children, neither *mes enfants* nor any of the other S referents is marked as a topic in this backgrounded part of the narrative. The various referents mentioned here are relevant only as necessary elements leading up to the main story.

The topicality of the referents changes drastically with the beginning of this main part of the narrative (line 9). The first protagonist, the sister's daughter, is introduced with a presentational device (*j'avais la petite de ma soeur*; cf. section 2.1.2), i.e. in focus position, even though this referent is pragmatically recoverable from the general family frame, which in the first part allowed e.g. *ma soeur* to appear in subject position without prior mention. (Note that the only S referent in the first part of the narrative that is not inferable from this frame, *ce bar* (line 4), is first introduced as an object in focus position (*un bar*, line 4).) The presentational device in line (9) marks *la petite de ma soeur* as a salient discourse participant, which is to acquire topic status in subsequent discourse: the next four clauses following the first mention of this referent are about the daughter. The second set of protagonists in the main part of the story, the speaker's children, is introduced in a T-construction (*mes enfants*, line 12), rather than with a presentational device, because the children were already mentioned earlier in the story. These referents are then anaphorically maintained over three clauses. The end of the narrative consists in successive T-constructions expressing topic shifts in which are contrasted the two topic NPs *elle* (cf. fn. 22) and *mes enfants*.

4. Summary and conclusion

In this paper I have tried to establish two facts concerning the structure of the sentence in spoken French. The first is that the canonical SVO sentence type of linguistic theory is not the type used in actual discourse, and that a preferred clause type is used instead, whose basic form is V(X), the subject being a preverbal clitic bound to the verb. I have furthermore tried to show that the language has systematic ways of preserving this preferred structure by using grammatical constructions which have the effect of placing NPs in positions other than preverbal S position. In these constructions, the NP appears either as a focus constituent after the verb or as a topic constituent outside the clause, depending on whether the referent of the NP has the pragmatic relation of focus or of topic with the proposition.

The second fact I have tried to establish is that there exists a class of rarely occurring but nevertheless fully functional exceptions to this preferred clause structure, in the form of SV clauses, where S is an NP. In these SV clauses, the referents of the subject NP (in as much as the NP is referential) are pragmatically backgrounded discourse participants. This distinguishes SV clauses from the alternative syntactic strategies involving the preferred clause structure, in which the referents are pragmatically salient, topical participants. The backgrounded character of SV clauses entails that the S referents have low topic status, i.e. that their pragmatic relation to the proposition is not or not to the same degree, the aboutness relation found with more highly topical referents. The backgrounded S referents tend to be non-specific, non-anaphoric and non-agentive. There are virtually no cooccurring lexical object NPs in SV clauses.

Thus lexical subjects are not topics; but neither are they foci. They represent in some sense the pragmatic "default case". They usually occur when the referent of the NP plays the role of an obligatory part in some conceptual frame, of an argument in a proposition, not of a topic in a discourse. Sometimes lexical subjects occur as minor topics, when the referent as well as the proposition about the referent are backgrounded with respect to some more foregrounded piece of information elsewhere in the discourse. In all cases, the referent of the subject NP tends to be contained within the narrow limits of the clause in which it occurs. By its syntactic coding, the S referent is marked as an element of no or secondary importance for subsequent discourse.²⁷ SV clauses are thus to some extent self-contained pieces of information, unlike the preferred clauses, which are marked by their syntax as ele-

ments in an informational sequence. This pragmatically autonomous character of SV clauses may well be the main reason why the SV(O) sentence type has been the preferred model of grammatical description (cf. Introduction), and why SVO sentences are so easy to elicit in metalinguistic situations, even though their pragmatic function in discourse is so highly restricted.

From the point of view of discourse, it seems clear that the preferred clause structure, the structure that contains no S, is the fundamental propositional unit of information. It is fundamental also from the cognitive point of view, as the optimal processing unit in spoken communication. The cognitively most efficient unit at the clause level seems to be a structure in which the topic referent(s) can be taken for granted, and in which non-topical referents, i.e. referents whose identification normally requires lexical coding, appear in a position reserved for non-agentive arguments, which in a VO language like French is the position after the verb. There thus seems to exist a correlation between constituent order, transitivity and lexical coding such that lexical NPs are preferred in post-verbal (object) position as the normal position for less agentive NPs, and avoided in initial (subject) position as the normal position for agents.

Any lexical NP that is an argument in a proposition codes in fact two functions, the *naming* function, which identifies the referent of the NP, and the *relational* function, which indicates the syntactic-semantic role this referent plays in the clause. Although from grammatical tradition we are used to seeing these two functions combined, they are nevertheless cognitively independent from each other. The data suggest that cumulation of the two functions, the naming function and the relational function, is cognitively more difficult when the position of the NP is one of greater agentivity. From the point of view of discourse this entails that *introducing* a referent in a proposition and *talking about* that referent as involved in some action are two tasks that are best carried out independently of each other. This discourse constraint imposed on the cumulation of the referential and the relational function can be expressed in the form of a pragmatic maxim: "Do not introduce a referent and talk about it at the same time."

The asymmetry between subjects and objects (or between agents and patients) with respect to their lexical naming function has been sporadically observed in the literature (e.g. Limber 1976, DuBois 1981, Chafe this volume, Ochs forthcoming). Chafe calls it the "light topic" and the "heavy comment" constraint, with discourse-active elements appearing to the left side (the subject side), and not yet activated elements to the right side (the object

side) of the verb. A corollary of this subject-object asymmetry is that the optimal processing unit on the level of the proposition has the further property of containing at most *one* major “piece of new information”. This piece of new information is what I have called the *focus*, which may be any syntactic constituent except the topic. The focus can be the verb itself or, perhaps more rarely, an adverbial phrase (two cases I have excluded from consideration in this paper). Or it can be a lexical NP, i.e. a phrase whose principal pragmatic function is to name a referent whose discourse role is not yet established.

The idea that the cognitively preferred number of “new elements” per clause is *one* has also been sporadically discussed in the literature. It appears for example in Givón’s suggestion that “there exists a strategy of information processing in language such that the amount of new information per a certain unit of *message transaction* is restricted in a fashion — say ‘one unit per proposition’” (Givón 1975:202); it is expressed in Chafe’s “one-recall-at-a-time constraint” (Chafe, this volume) and in DuBois’ “one noun phrase constraint” (DuBois 1984). The form of the preferred clause in spoken French and its high frequency in discourse is a nice piece of evidence in favor of this idea.

It should be emphasized that the occurrence of SV clauses in spoken French, while being an exception to the preferred clause structure, is not an exception to this processing constraint on the number of lexical elements per clause. SV and VO/VS structures have in common that they contain no more than one lexical NP in a primary grammatical relation. Furthermore, even though the S in SV clauses is in the wrong place, so to speak, it does share the property of low agentivity with the focus constituent in the preferred clause, since SV sentences with agentive referents, let alone SVO sentences, are virtually absent from the corpuses. Thus S constituents (whether pre-verbal or post-verbal) share one important property with O constituents: they strongly tend to be *non-agentive*. This entails that in spoken French there is a level at which the group of Ss and Os consistently contrasts with the group of (agentive) As since As do not occur as lexical NPs but as clitic t markers. It is but a small step from here to the conclusion that there exists an *ergative undercurrent* in the syntax of spoken French. This ergative undercurrent is caused by the powerful flow that directs the information in the clause from topic to focus, from predictable to unpredictable, from “old” to “new”.

NOTES

1) I am grateful to Claudia Brugman, Wallace Chafe, Katherine Demuth, Pamela Downing, Martin Harris, Charles Fillmore, Tom Larsen, David Solnit, Russ Tomlin, Marie-Paule Woodley and to members of the UCLA Discourse Group for many helpful comments on earlier versions of this paper.

2) Cf. Limber (1976), Prince (1981) and Chafe (this volume) for English, DuBois (1984) for Sacapultec and Ochs (forthcoming) for Samoan.

3) These numbers are quoted by François. My own count (cf. section 2.3 below) differs somewhat from hers because of certain differences of interpretation and because I have counted repeated instances of the same lexical noun. These differences do not invalidate the general point I am making here.

4) The concept of the *preferred clause* is discussed by DuBois in his work on Sacapultec discourse (DuBois 1981, 1984), under the name of "preferred argument structure". Cf. Also Ochs' discussion of the "basic utterance type" in oral Samoan discourse (Ochs, forthcoming). Interestingly, the preferred clause in French as discussed below has the same basic form as the preferred clause in Sacapultec and Samoan, namely [V (NP)].

5) The corporuses used in this analysis are the three corporuses in phonetic transcription in vol. 2 of François (1974), as well as a corpus established by Suzanne Albert (Université de Provence, Aix-en-Provence). I would like to thank Colette Jeanjean from the University of Aix for making this corpus available to me. I have also used data from Barnes (1983). Examples with no indication of the source are from my own data collection. Most data used in this paper are from spontaneous conversations among more than two speakers.

6) This section is a modified version of Lambrecht (1984a).

7) Cf. Lambrecht (1981) for an analysis of the spoken French pronoun system as a topic-agreement marking system.

8) *Il*-deletion is much more sporadic in the subject-verb inversion construction than with impersonal verbs. In Lambrecht (1981:27ff) I argue that the weak status of the dummy subject *il* has to do with the fact that this clitic never stands in an agreement relation with a noun. This lack of grammatical function can then lead to total deletion of the phonetically weak subject morpheme.

9) Cf. Chafe (this volume) for a psychological interpretation of the concepts *given*, *recoverable*, *new*, for which Chafe now suggests the terms (*hearer-*)*active*, (*previously*) *semi-active* and (*previously*) *inactive* respectively. For a taxonomy of the different types of referential newness or recoverability cf. Prince (1981a).

10) I am leaving open here the important question of the grammatical category to which belongs the entire structure including T and AT, at whose core is the preferred clause. It would seem natural to call it *sentence*, if it is understood that 'sentence' designates here not a syntactic but a discourse unit. For some discussion of the problematic status of the notion 'sentence' in spoken discourse cf. Chafe (this volume).

11) There is a general tendency in spoken French not to place questioned constituents (QU-constituents) in COMP position. This tendency too can be interpreted as a result of the general preferred-structure-preserving force in the language. For a type of question formation similar to (3b) in Sesotho, as well as for a number of Sesotho constructions that are reminiscent of those described here for spoken French cf. Demuth (this volume).

- 12) The rareness of clefted direct objects in English *it*-clefts is noticed in Prince (1978).
- 13) For an interpretation of *have* as an intransitive verb of location or existence cf. Clark 1970 and Van Oosten 1978. The semantic interpretation of the subject argument of *have* (as well as of perception verbs) as a *locative* is also adopted by Foley and Van Valin 1984:48f.
- 14) As in the English existential *there*-construction, the original deictic meaning of the adverb is all but lost in the *ya*-cleft. The *deictic* presentational function is expressed in French with the *voilà*-construction, as in *voilà Pierre* ‘there is Pierre’. This *voilà*-construction is etymologically related to the presentational construction involving the verb *voir* ‘to see’, which is discussed below.
- 15) I am mentioning here only the simplest presentational function of the *ya*-cleft. Another important function is the *event-reporting* function (as in *ya le téléphone qui sonne!* ‘the phone’s ringing!’) and the marking of *unexpected information*. Cf. example (21) and discussion.
- 16) A similar use of the verb ‘have’ is found in such (attested) English constructions as *I have a friend of mine from Chicago’s gonna meet me downstairs* or *We had a friend of mine from Norway was staying here*, whose pragmatic function seems identical to the function of the French *avoir*-construction. The main difference between the English and the French construction, besides the presence vs absence of a “relative” prounoun, seems to be that in English the “presented” NP must be indefinite.
- 17) Presentational use of verbs of perception in spoken English discourse is noticed by Ochs-Keenan and Schieffelin (1976:249). The authors call these verbs “locating verbs”. Cf. Also footnote 13 above.
- 18) In fact, subject status of the inverted NP is debatable since the NP lacks one crucial subject property: verb agreement. The NP agrees neither in number (exx. 15, 16) nor in gender (exx. 13, 14) with the verb. In Lambrecht (1984a) I define as one of several formal differences between topic and focus in spoken French that topic involves verb agreement and focus does not. The formal similarity between (what I call) presentational subjects and direct objects has been noticed e.g. by Burzio 1981 (following Perlmutter 1978). Burzio proposes to generate such subjects in Italian directly as objects in VP, i.e. to the right of V.
- 19) For the purposes of this discussion, I am ignoring autonomous topic constructions of the type *la mer, tu vois de l'eau* ‘the ocean, you see water’, in which the T constituent has no coreferential t marker inside the clause. Cf. Lambrecht 1981:chapter 3.
- 20) For a detailed discussion of the syntactic and case-marking properties of T and AT constituents cf. Lambrecht 1981, Chapter 3.
- 21) The difference between the high topic status of *le lycée* and the low topic status of *les enfants* shows, incidentally, that the inherent semantic property of animacy or humanness, often invoked as a topicality criterion (cf. e.g. Givón 1976), is not an essential factor in spoken French as far as 3p NP topics are concerned.
- 22) That *Mademoiselle G.* is now a topic is confirmed by the occurrence of the autonomous prounoun *elle* (in *elle, c'est une ancienne institutrice*). This *elle* is not a t clitic but a T prounoun of the topic-shifting series (*moi, toi, lui, elle* etc.), whose members can cooccur with lexical topic NPs in marked cases of topic-shift. (Cf. the cooccurrence of *lui, Guerini* and *Nicolas, lui* in example (29) below.) The topic-agreement sequence is thus: [Mademoiselle G.(T)[c'(t)est...]] *elle*(T) [c'(t)est...] et [*elle*(t) m'a dit...]]. The difference between the two clitic t markers *c'* and *elle* is due to a rule in French that obligatorily converts a personal clitic to *ç(a)* when it is followed by an indefinite predicate NP; thus e.g. *elle est institutrice* contrasts with *c'est une institutrice*, both meaning ‘she's a school teacher.’

23) Martin Harris (p.c.) has pointed out to me that changing the article *les* in these two examples into the demonstrative *ces* 'these/those' would have the effect of individuating the generic referents, thereby making T-coding quasi-obligatory.

24) In Japanese, the association of topic with main clause status is grammaticalized to the extent that the topic marker *wa* may not appear in subordinate clauses (Pamela Downing, p.c.).

25) Marie-Paule Woodley (p.c.) has observed that the low acceptability of (28) seems to improve with the NP *ma mère* 'my mother' replacing *maman*. This would confirm the analysis of *maman* as a "quasi-pronominal" NP presented in the next section.

26) That names and pronouns can form a single pragmatic category is observed also by Limber (1976), who notices that only one out of thirty subjects in a child language corpus are NPs like *the baby*. All other subjects are either pronouns or names. Limber observes that the pragmatic similarity between names and pronouns has a syntactic correlate: the two categories have in common that they are syntactically non-expandable (e.g. by adjectives or relative clauses). The special pragmatic status of proper names has also been observed by Givón (1983:10), who writes that proper names "often constitute exceptions to the text measurements that reveal the rules which govern the discourse distribution of topics."

27) In other languages, the presence vs. absence of a *numeral* associated with the noun can have a function analogous to the function served by the contrast between T-coding and S-coding in spoken French. In certain languages that have numeral *classifiers*, the NP that is preceded by the classifier is marked as topical for subsequent discourse (cf. Dowling (1984:ch.7) for Japanese, and Hopper (this volume) for Malay.). In other languages, the distinction is expressed by the contrast between presence or absence of the numeral 'one', as with Latin *unus* (Wehr 1984:39ff), Turkish *bir* (combined with the accusative case suffix on the noun, Comrie 1981:128), and Hebrew *exad* (Givón 1983:26 and fn. 14).

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ON THE ROLE OF CONDITIONALS IN GODIE PROCEDURAL DISCOURSE

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Most discourse studies assume that there are grammatical units larger than the sentence, typically called “paragraphs” (Longacre, 1979) or “episodes” (van Dijk, 1981). Research is currently being carried out to determine what constitutes such units in various languages and how these units are linguistically encoded. While most of the evidence for such units comes from studies of narrative, it appears that other discourse genres have “higher level” discourse organization as well (Hinds, 1979). In this paper I attempt to examine procedural texts from Godié, a West African language.¹ First it is observed that in this particular genre, an unusually high number of conditional clauses occur. It is then claimed that these clauses have an important text-organizing function, breaking the discourse into significant units. Finally, it is suggested that the high frequency of conditionals is directly related to the goal of this particular discourse type.

1. The data

Data in this paper come from eleven procedural texts in Godié. ‘Procedural’ is a term applied to a discourse genre which gives directions for carrying out a given task (Grimes, 1975). In English, we encounter procedurals in how-to manuals of all types (cookbooks, car-repair manuals, etc.), as well as each time we ask someone for directions on how to accomplish some task. While this discourse genre is perhaps not attested in every language,² oral procedurals are common place in West African society and are a standard way of transmitting knowledge within the community.

The data here consist of 10 oral and 1 written text collected from five different speakers. They explain how to carry out various tasks relevant in a Godié context:

<i>Speaker³</i>	<i>Topic</i>	<i>Text</i>
1	how to plant rice	A
1	how to make palm wine	B
1	how to catch monkeys	C
1	how Godiés stop the rain	D
1	how to make kids walk	E
1	what to do when someone drowns	F
1	what to do when someone dies	G
2	how to build a house	H
3	women's work	I
4 (written)	how to plant rice	J
5	how to find snails	K

For this study I have also examined procedural text from three other Kru languages: Tepo Kroumen, Nyabwa, and Wobé:

6 (Tepo)	how to make palm nut stew	L
7 (Nyabwa)	how to make fufu	M
8 (Wobe)	how to make attieke	N

From the data, a very clear picture emerges as to what constitutes a procedural text, not only Godié, but across the language family as well.

2. Features of the Godié procedural

Like other discourse types (such as narratives, histories, folktales, etc.), the procedural begins with an introductory statement. Eight out of eleven texts make reference to *à 6lú* 'our country' in the introduction as the setting for the procedural. Speaker (3) begins her discourse on women's work in the following way:⁴

- (1) à 6lú gògie krv d[^] krv n[^]
 our country Godié on place on NF
 zù ku zì n[^], ñ ku yláa 6à n[^]
 day if break NF you if sleep:loc leave NF
 ñ nylapl nàa glù krv nú ñ pl[^]
 you sweep:imp your ground on and you enter:imp
 nàa jàlèé
 your kitchen:loc
'In our Godie land, if it's morning, if you wake up, you sweep out-

side and then you go in the kitchen.'

Sometimes a more elaborate introduction is given stating who requested the information and who the speaker is.⁵ If the introduction is lengthy, greetings (*ayayoka*) are inserted before beginning the real procedural. A similar strategy is used in narratives.

After this introduction, the procedural begins to diverge from other discourse types. The most obvious ways in which procedurals differ from the other genres are (i) the theme and (ii) overt reference to the addressee. As noted above, the theme of a procedural centers around activities to be performed in accomplishing some task. The addressee in a procedural is normally second person singular and this reference is made explicit in procedural texts, as can be seen in example (1). In contrast, narratives, folktales, riddles, etc., constantly refer to third person and the addressee is only rarely referred to overtly. In the sample of eleven texts, seven made direct and constant reference to $\hat{\lambda}$ 'you (sg.)'.⁶

Another feature of Godié procedurals is the frequent use of the focus construction. Focused elements occur in sentence-initial position where they are optionally followed by a focus marker *mú*. There is a gap in the clause where the focussed item would normally appear. As the speaker goes through the various procedures which accompany some task, s/he may use the focus construction to draw attention to certain noun phrases which are crucial parts of the procedure. The following example comes from the text on house-building. (H):

- (2) a. *zì kʉ zì*,
day if break,
- b. *nàa dìvànvv* *mú* $\hat{\lambda}$ *l&k& nē*.
your machete:D FOC you FUT sharpen
- c. *naa dìvànvv* $\hat{\lambda}$ *kʉ-v nē* *n&*, *zì kʉ zì*,
your machete:D you if-it sharpen NF day if break
- d. *kl&* ($\hat{\lambda}$) *mʉ yi l&*.
forest you go now PART
- e. $\hat{\lambda}$ *kʉ kl&* *mʉ n&*,
you if forest go NF
- f. *sii* *mʉ* $\hat{\lambda}$ *l&k& dù*.
trees FOC you FUT cut

'If it's morning, you sharpen your machete. Your machete, if you've sharpened it, if it's morning, you go to the forest. If you've gone to the forest, you cut trees.'

In this example, every main clause contains a focussed item (lines b., d., and f. In line c., *dìvànvv* ‘the machete’ is topicalized; not the resumptive pronoun *v* ‘it’ occurring in the clause. While focussing does not occur in every clause in procedurals (compare example (1)), it is typical of this discourse genre.

Another major feature of Godié procedurals is their irrealis viewpoint. Procedurals contain a very high number of futures, connected so closely to realis modes — is not a feature of procedurals. In (1) above, two conditionals are followed by two imperfective clauses (indicating habituality). More commonly, future modals occur, as seen in (2) above and in the following example:

- (3) from text B (how to make palm wine)

ñ kʌ-v *yoku slʌ nʌ,*
 you if-it side clean NF
 ñ lʌkʌ *yt lete kʌ 6li*
 you FUT now adze up take
 ñ kʌ *yt gɔlvv 6li kàààà...*
 you FUT now palm:D dig until
 nú *gɔlvv lʌkʌ 6li*
 and palm:d FUT fall

‘If you’ve cleaned the side of it, then you pick up your adze and you dig around the palm a long time and then it falls down.’

In Godié, there are two future modals, a volitive *kʌ* (or related *lʌkʌ*) and a potential *yi*:

- (4) ñ kʌ *sʌ pt*
 I VOL down lie
 ‘I want to/will lie down’
- (5) ñ yi *yi*
 he POT come
 ‘He will/can/may come’

Interestingly, in procedurals, it is the *kʌ* volitive future which occurs overwhelmingly in this context. In the texts studied here, 45% of all main clauses contain *kʌ* or *lʌkʌ*, while only 3.4% contain *yi*. One possible explanation for *kʌ* is derived from the verb *kʌ* ‘have’.

In Kru (and, indeed, in languages throughout the world), there is evidence that the verb ‘have’ may pass through various stages of semantic shift (Marchese, 1979):

have > must/should (have to) > will > want

The frequent use of *kʌ* in procedurals could be a reflection of the older ‘obligatory/should’ meaning.

Another feature of procedurals is the special use of the perfect auxiliary *yʌ*. In narratives, *yʌ* may be used to slow down the action (and thus build suspense) right before the climax of the story (Marchese, forthcoming). It is also used in both narratives and procedurals to signal events which are out of the natural temporal sequence (Marchese, 1978):⁷

- (6) from text 1 (women’s work)

...nú ʌ ywv-a kosu yòku ná ʌ pi l3
 and you put:IMP-it fire side and you cook: there
 IMP
nàa nyəðnyu . Mléε, ʌ dyʌ-ε-a zʌ
 your sauce meat:D you *PERF*-it-recent already
mudidi. ʌ yʌ-ε w3. ʌ yʌ-ε nyidaá ywv.
 cut-up you *PERF*-it wash you *PERF*-it pot:LOC put
 ‘...and you put it (rice) next to the fire and you cook your sauce.
 The meat, you have already cut it. You have washed it. You have
 put it in the pot...’

A special use of the perfect in procedural discourse is its appearance at the end of the discourse, where it signals that the task has been completed. For example, in text F (what to do when someone drowns), the desired result of the procedure — retrieving the body — appears at the end of the procedure in the perfect:

- (7) á *nyukpɔɔ yʌ* *kv glʌ*
 your man:D *PERF* up come-out
 ‘Your man has appeared’

Similarly, in the text on women’s work, the end of the procedure is signalled by the perfect aspect:

- (8) from text I

ʌ *ku budo nʌ, ʌ yʌ s kv.*
 you if wash NF you *PERF* down be
nàa nɔnv yʌ yi 6tʌ.
 your work *PERF* now finish
 ‘If you wash, you have sat down. Your work has finished.’

A similar shift to the perfect has been observed in Swahili (Wald, MS:22) and in at least one speaker of Liberian English (Singler, 1984).

But of all the features associated with procedurals, certainly the most striking is the use of the conditional clause. In Godié, the condition-consequence relationship is expressed by two clauses, the first of which contains the conditional auxiliary *ku* and a non-final marker *n* \wedge (which is sometimes elided, leaving behind a low tone). Conditionals are typically used in Godié to predict future events or to describe unreal or imaginative situations:

- (9) *ɔ ku wà n* \wedge , *ɔ yi yi*
 he if want NF he POT come
 'If he wants, he'll come'
- (10) *ɔ ku a monii nìi n* \wedge , *ɔ yi a tobii pi* \wedge .
 he if PAST money see NF he POT PAST car buy
 'If he had some money, he would buy a car.'

They also occur frequently in proverbs where they present general truths:

- (11) *yikpinyɔ ɔ k* \wedge *yikpinyɔ 6εɛ n* \wedge ,
 blind man he if blind man carry NF
kofə wa 6li.
 hole they fall
 'If a blind man leads a blind man, they both fall in the ditch' (kagbo dialect).

Conditional clauses in Godié are also used to express the occurrence of an expected or inevitable event:

- (12) *᳚ ku mà n* \wedge , *sə nɔ àyo*
 you if go NF tell him hello
 'If/when you go, tell him hello.'

Despite this semantic overlap, conditionals contrast with temporal (when) clauses, which never contain the conditional *ku* and always have a 'real world' reading:

- (13) *᳚ ní-᳚ n* \wedge , *ná ɔ yií kv 6l̩*
 I see-him:PFTV NF and he SEQ:me up take..
 'When I found him, he took me....'

It is the conditional with *ku* (and not the temporal subordinate clause) which occurs with high frequency in procedural texts. In this discourse sample from Godié, conditionals make up 79.6% of all initial subordinate clauses and 25.6% of the total number of clauses:

It is the conditional with *ku* (and not the temporal subordinate clause) which occurs with very high frequency in procedural texts. In this discourse sample from Godié, conditionals make up 79.6% of all initial subordinate clauses and 25.6% of the total number of clauses:

speaker	Text	total # clauses	% of conditional clauses per text				
			#main clauses	#initial sub clauses	#conditionals	% COND (of sub clauses)	% COND (of all clauses)
1	A	71	50	21	16	76.7%	22.5%
1	B	123	93	40	33	82.5%	26.8%
1	C	61	35	26	20	76.9%	32.7%
1	D	18	11	7	4	57.1%	22.2%
1	E	19	12	7	5	71.4%	26.3%
1	F	53	37	16	11	68.7%	20.7%
1	G	32	16	6	5	83.3%	15.6%
2	H	166	117	49	46	93.8%	27.7%
3	I	124	76	48	46	95.8%	37.0%
4	J	29	19	10	7	70.0%	24.1%
5	K	14	11	3	3	100.0%	21.4%
		AVERAGE <u>79.6%</u>				<u>25.6%</u>	

Though clearly a smaller sample, the data from the other Kru languages shows comparable (and sometimes higher) scores:

6	L (Tepo)	26	14	12	12	100.0%	46.1%
7	M (Nyabwa)	44	323	12	12	100.0%	27.2%
8	N (Wobe)	24	19	5	4	80%	16.6%

From the tables above, it can be seen that the percentage of conditionals in Godié procedural texts (A-K) range from 15.6% to 37%. In other Kru languages (L-N), they make up from 16.6% to 46.1% of all clauses. To show that a high frequency of conditionals is associated with this particular discourse genre, a count was made of conditionals in several discourse types in Godié:

Average % of conditionals per text according to discourse genre

procedurals	25.6%	(10 texts)
proverbs	15.8%	(200 proverbs)
riddles	3.3%	(5 texts)
songs	3.3%	(10 songs)
animal folktales	2.3%	(8 texts)
narratives	2.0%	(5 texts)
prayers	1.2%	(2 texts, one lengthy)

These figures show that in long stretches of speech, conditionals are most frequent in procedurals. With the exception of proverbs, conditionals account for less than 4% of clauses in non-procedural texts. The question then arises: what motivates the appearance of high numbers of conditionals in this genre and what is their discourse role?

3. Role of conditional clauses

In an earlier study (Marchese, 1977), I reported that clause initial subordinate clauses in Godié function as *topics*. To summarize the findings of that study, it was discovered that conditionals as well as temporal adverbials and preposed relatives share the following characteristics with simple noun topics (Chafe, 1976; Haiman, 1978):

- (i) they are only loosely connected to the main clause
- (ii) they do not function as arguments of the main predicate
- (iii) they are highly repetitive, containing old or assumed information (definite)
- (iv) they serve to frame the event in the following clause

These features can be seen in the examples below, where each initial subordinate clause repeats information of the previous clause and 'frames' the following comment:

- (14) a. initial relative clause

nuykpo 6lu gbu ḥ nuñ gwənia ta.
 man one certain he marry:PFTV women three
 $\hat{\wedge}$ n \wedge , gwənia ta ḥ nuñ l \wedge n \wedge ,
 I say women:D three he marry PART NF
wa g \wedge yúo ta.
 they gave-birth:PFTV children three
 ‘A certain man married three women. I say, *the three women he married*, they gave birth to three children.’

- b. initial temporal clause

nú ḥ yi ḥ ní.
 and I SEQ him see

$\hat{\wedge}$ ní-ጀ n \wedge , nu ḥ yií kv 6l \acute{u}
 I see-him:PFTV NF and he SEQ:me up take
 ‘and I found him. *When I had found him, he took me...*’

- c. initial conditional clause (from 2 d-f)

kl \wedge (ጀ) mu yi l \wedge .
 forest you go now PART

$\hat{\wedge}$ ku kl \wedge mu n \wedge , sii mu $\hat{\wedge}$ l \wedge k \wedge d \acute{u} .
 you if forest go NF trees FOC you FUT cut
 You go to the forest. *If you've gone to the forest, you cut trees.*

Note that the clause $\hat{\wedge} ku kl \wedge mu n \wedge ‘if you go to the forest’ contains known information that sets the scene for the next procedure to be performed. Thus, on a local level (i.e. from sentence to sentence), these clauses appear to be linking devices (Grimes, 1975). However, eventually we will see that sentence-initial conditionals play a more crucial role in discourse organization.$

Taking the analysis one step further, we could try to apply the notion of backgrounding and foregrounding to this data. Hopper (1979: 214-6) characterizes backgrounding and foregrounding in narratives in the following way:

<i>foreground</i>	<i>background</i>
main line events	comment on narration
iconic order	not in sequence
REALIS	IRREALIS, more modals
main route thru narrative	lower degree of assertiveness
new information in predicate	new info can appear in subject

Thus foregrounded actions typically trace out the skeleton of main events in a narrative and are usually in the perfective aspect, while backgrounded events provide supportive material and are typically in imperfective or durative-type aspects. Hopper applies this distinction only to the narrative discourse type, but one is tempted to see if it can characterize the procedural discourse type as well. Indeed, there are some parallels. The consequence clauses of conditionals do appear to correspond to narrative foregrounding as described by Hopper. They provide the steps of the procedure, are typically iconic, and if irrealis (future, imperfective, imperative), are at least more ‘real’ than conditional clauses containing *ku*. They supply new information, and, as can be seen in subsequent examples (15e, f) may contain focussed (sentence-initial) elements. In contrast, conditionals (i.e. antecedents containing *ku*) appear to be backgrounded in that they do not report main line events, they are more irrealis than any other clauses, and they have a lower degree of assertiveness. While topics may appear in backgrounded clauses (*L5, gw^shH* ‘that medicine’ in (15k), focussed elements do not occur. However, conditionals do occur in strict sequence and thus are iconic. And, as we will see later, they in some sense “trace a main route” through the procedural text itself. Thus the background/foreground distinction as it applies to narrative does not exactly fit procedural discourse genre.

Probably the most helpful clue to the function of conditionals in procedurals is the observation made by both Hopper (1979) and Givón (MS) that subordinate clauses are *discontinuous*. Let us examine a more complete text to see what this means. The following extract is from a procedural telling what steps must be taken to ensure that a Godié child learns to walk:

(15) (from text E)

- a. *Ayayoka*
greetings
- b. *Mà, cices^, à 6lu ñwló ku g^ n^,*
now really our country woman if give-birth NF
- c. *yío ku dàaboó*
child:D is cloth:LOC
- d. *Mà, o ku dàaboó 6à n^,*
But he if cloth:LOC leave NF
- e. *gw^shH wa l^ká o fió nv*
medicine they FUT him after do
FOC

- f. *iyl gw̄s̄u* *imí* *lak* *yl pl̄e leleli*
and medicine:D it you FUT there heart rub
FOC
- g. *iyl* *ɔ k̄ kwalie bɔt̄*
and he FUT spider hit (= turn over)
- h. *ɔ k̄ kwalie bɔt̄ n̄,*
he if spider hit NF
- i. *nu* *wa* *lak k̄ boko yiḡd̄ gw̄s̄u kv 6li*
and they FUT again another med. up take
- j. *iyl* *ɔ k̄ s̄ kv*
and he FUT down be (sit)
- k. *l̄s* *gw̄s̄u* *ɔ k̄ yi* *s̄-kv-l̄* *6i n̄*
there med:D he if now down-be-NOM finish NF
- l. *nu* *wā* *lak yi* *l̄ boko gw̄s̄u l̄* *l̄*
and they FUT now there again med. there kind
kv 6li
up take
- m. *ɔ k̄ kipe*
he FUT walk
- n. *ɔ kipeli* *k̄ yi* *s̄i l̄* *6I...*
his crawling if now also there finish...

‘Greeting! Now really, if a woman from our country gives birth, the child is placed in a (special) cloth. If he leaves the cloth, they will put medicine on him. This medicine you will rub on his chest and he will (learn to) turn over. If he (knows how to) turn over, they will take another kind of medicine and he will (learn to) sit up. If he has finished sitting up (by using that medicine), they will get a different kind of medicine and he will crawl. If his crawling has finished...’

From this text, it can clearly be seen that conditionals have a *text-organizing* function. Notice that conditionals occur every two or three clauses (marked by arrows). Thus, the text is broken into a set of steps outlining the procedure. Each conditional along with its consequent seems to represent a sequence of events which the speaker sees as closely connected. It seems likely that these “chunks” represent some kind of cognitive unit. In fact, taking the content of the conditional clauses alone, one can construct an outline of the basic steps in the procedure:

1. birth
2. leaving the daaboo (special cloth)
3. hitting the spider (turning over)
4. sitting up
5. crawling

These breaks occur where English might use 'first', 'second', 'third' for indicating significant steps in a procedure. Conditionals in Godié seem to be the oral equivalent of such breaking devices.

Further evidence for the breaking effect of conditionals is the presence of the marker *mà* (lines (b) and (d)) and the discontinuity of subject NP's. *Mà* has been recognized as serving as a paragraph marker (Gratrix, 1978: 313). While it does not occur with every conditional in the data base, it often co-occurs with them. Perhaps more convincing evidence comes from the data concerning subject discontinuity. Well over half (57.5%) of all conditional clauses examined in this study precede a change in subject — a confirmation that conditionals are signalled some kind of natural break. Notice, for example, that the subject of the conditional in (b) is *ywlí* 'woman', while the subject of the main clause switches to *yló* 'child' (line (c)). 'Child' is taken up again as the subject of the next conditional (line (d)), but again the subject of the main clause switches to *wa* 'they' in (e). These switches have been represented in the text by diagonal arrows ↗. Thus, as noted earlier, conditional clauses are entirely *given*. This may be a point of difference between narratives and procedures, since, according to Hopper, backgrounded clauses in narratives tend to tolerate new information in pre-verbal position.

The actual size of these units varies and may be dependent on several factors. Counting ten of eleven texts,¹¹ the longest unit is 8 clauses long (excluding the conditional), though such a long string is rare. More often, there is only one clause following the conditional, and this clause is immediately followed by another unit (see example (2)). The average number of clauses in a unit is 2.53. As noted above, each clause following the conditional seems to represent an *event*. Turning back to example (3):

- (3) (from how to make palm wine)
 ↗ *khu-v yoku slu n^,*
 you if-it side clean NF
 ↗ *l&k& yu lete kv 6li'*
 you FUT now adze up take

ñ kñ y^t gɔlvv 6li kàààà...

you FUT now palm:D dig until

nú gɔlvv lñkñ 6lñ

and palm:D FUT fall

If you've cleaned the side of it, then you pick up your adze and you dig around the palm a long time and then it falls down.

We see that there are three steps in the wine-making process after the side of the palm is cleaned:

- (i) you pick up the adze
- (ii) you dig around the palm
- (iii) the palm falls down

It is difficult to predict the number of clauses which will occur in each unit. It seems likely that the length of the unit is dependent on how difficult the procedure is to process or how much the speaker gauges the hearer to already know. As Hinds (1979: 148) notes in his study of Japanese procedurals:

The decision for how a procedural discourse should be organized is largely an individual matter. There are often a number of different ways a process could be completed successfully, so there may be several extremely different "correct" organizational patterns. It is therefore impossible to predict with any degree of certainty how an individual...will segment a recipe; but, *once the individual has constructed the discourse, it is possible to determine what he considers to be the discrete steps.* [emphasis, L.M.]

similarly in Godié, the discourse reveals two things:

- (i) the events the speaker sees as crucial to carrying out the task (encoded in each clause)
- (ii) the grouping of events which the speaker chooses to impose on an otherwise long list of procedural steps (encoded in each "chunk" following a conditional break)

Many questions could be raised as to the factors contributing to (i) and (ii). For example, one could ask why the speaker in (3) spells out 'you take up an adze', rather than simply saying 'you dig around the tree with an adze'. From this text, it would appear that the speaker is restricted the amount of new information per clause to a verb and one 'new' object complement (*take adze, dig palm fall*). While an interesting hypothesis, more study needs to be done to determine the actual limits of new information per clause in this discourse context.

4. Frequency of conditional clauses

Now that it has been determined that conditionals play a role in text-organization in procedural text, it is important to understand why these conditionals are so frequent in this discourse type. It is claimed here that the frequency of conditionals can be directly attributed to the discourse goal of teaching someone a procedure. It stands to reason that the smaller the chunks, the easier it will be for the hearer to identify and remember the processes involved. Thus, conditionals are more frequent in procedural discourse because we are dealing with a process which must be remembered and carried out. It must be noted that in narrative texts in Godié, sentence-initial temporal clauses perform a similar role in discourse — dividing the text into “episodes” of some sort. In narrative text, however, there do not need to be as many divisions and the units do not have to be so small, since the goal is merely to process the information coming to the hearer. A likely hypothesis is that cross-linguistically units in procedurals will be smaller than in narrative-type discourse. This seems to be true in English, where procedurals have short, quick steps:

- (12) (from a Datsun repair manual)

When changing tires, carefully take the following steps:

1. Park on a level surface and set parking brake firmly. Set manual transmission in reverse (automatic transmission in “P”)
2. If parked on or near road, activate hazard warning flasher.
3. Remove the spare tire and tools from the storage compartment
4. Place wheel chock at both the front and back of the wheel diagonally opposite the jack position
5. Place the jack under the jack-up point illustrated....

In attempting to transmit a procedure orally, Godié speakers lay out the steps similarly, but they do so through the use of conditional clauses.

Along with this, conditional clauses are an excellent pedagogical device. They are *repetitive*, a standard method of ensuring that the hearer will remember the message. Furthermore, they offer an opportunity for a rather unique speaker-hearer interaction. As noted in Marchese, 1977, conditionals clauses, like other subordinate clauses, are followed by a non-final marker *n* ^ . Here the speaker pauses and quite often, it is at this point that the hearer acknowledges that he is following the message. He does so by making a verbal response: ^ ^ :

- (13) SPEAKER: *ñ kʉ kl& mʉ n&*,
 you if bush go NF
 HEARER: *ññ*

This verbal response can occur in other discourse types — for example, in narratives, but the frequency of conditionals in procedurals means that this interchange is more frequent in this context. Thus, the speaker-hearer relationship is much tighter in this discourse genre than in any other discourse type. The “teacher” is continually checking up to see if his “student” is following him (see Wald, MS: 11, 12 for a discussion of a similar phenomenon in Swahili).

5. Conclusion

The role of conditional clauses in Godié procedural texts is clear: they break the text into manageable units and facilitate the learning process. Judging from the procedural text from three other Kru languages, conditionals are used in exactly the same way throughout the Kru family. In fact, this may be a general African strategy, since others report hearing similar phenomena in other parts of West and East Africa (C. Lord, P. Bennett, M. Lewis, p.c.). And if it is indeed true that languages generally use subordinate clauses as markers of discontinuity, many more languages may use conditionals in a way similar to Godié.¹² What is interesting in the Godié case is, not only do conditionals signal a breaking point in the discourse, but they also seem to have been “singled out”, and in a sense “grammaticized, emerging as the most distinctive feature of a specific discourse genre, the procedural text.

NOTES

*I would like to thank Sandy Thompson and Tucker Childs for their helpful comments on an earlier version of this paper, as well as Doris Payne and members of my advanced syntax class for discussing various points with me.

1) Godié is a Kru language spoken in southwest Ivory Coast by approximately 20,000 people. Kru is part of the Niger-Kordofanian language family which covers most of sub-Saharan Africa.

2) Both W. Chafe and D. Payne have noted (p.c.) that the procedural genre does not seem to exist in some Amer-Indian languages.

3) Speaker 1 is Zadi Sassi Michel, 29 at the time the texts were recorded. Speaker 2 is “Gregoire”, about the same age. Speaker 3 is “Marguerite”, a young woman about 24 years old at the time of the recording. Speaker 4 (the writer) is Dago Jean-Claude, from an eastern Godié dialect.

Speaker 5 is Nyapi Djawli Matthieu, approximately 12 years old at the time of the recording. With the exception of the text by Dago Jean-Claude, all the above texts were collected by Carol Gratrix-Brinneman and myself during 1972-1975 in the village of Dakpadou, Ivory Coast. The remaining texts in Tep, Wobe, and Nyabwa were supplied to be by P. Thalmann, I. Enger, and J. Bentinck. Unfortunately names of these speakers are not available.

- 4) In this and subsequent example, the following abbreviations are used:

D	definite	NOM	nominalizer
FOC	focus	PART	particle
FUT	future	PERF	perfect
IMP	imperfective	PFTV	perfective
LOC	locative	POT	potential future
NF	non-final	SEQ	sequential
VOL		VOL	volitive future

Godié has three tones: high (‘), mid (unmarked), and low (‘). While Godié does not have contrastive vowels, two vowels are written when a vowel carries two tones. The symbol 6 designates an implosive bilabial stop, g, a voiced velar fricative.

5) There appears to be a strong tendency in Godié discourse to justify “holding the floor”. Procedurals and stories of all types are very often prefaced with lengthy justification which may include (i) a summary of the request for information (ii) the identity of the person making the request (iii) the identity of the speaker (iv) reason why the speaker is qualified to answer the request (cf. Walk, MS:16).

6) The use of ã ‘you’ seems to depend on whether the speaker can see himself in the agentive role in the procedural or not. For example, speaker 1 uses ‘you’ when describing male-oriented tasks, whether his audience is male or female. He switches to third person when he would not be actively involved as in text extract (15). In the sample of a written procedural, the author uses only third person. This may be due to the fact that the author was in the capital, Abidjan, describing how villagers plant rice, and was thus divorced from the situation. We will have to wait for Godié written literature to develop before we can tell if a switch to third person will be a feature of written style.

7) Note that what is called ‘perfect’ here was labelled ‘perfective’ in Marchese (1978). Since that time I have changed labels to come more in line with traditional terminology, with perfective designating an event viewed in its entirety and perfect referring to a past event with current relevance (Marchese, 1979).

8) Conditions follow consequence clauses only rarely when the relationship is entirely logical (i.e. non-temporal) (Marchese, 1976).

9) Conversational material was not considered in this study. I have restricted my data to more structured ‘monologue’-type material.

10) The case of proverbs is quite interesting. Usually proverbs are 3-4 clauses long. Often times they begin with a conditional. It may be significant that both procedural texts and proverbs can be considered *teaching* tools.

11) One text was not analyzed because there were several complex complements and it was not immediately clear to me how these should be counted.

12) English sometimes uses conditionals in a similar way. For example, in a five page essay by J. Wright, “TV commercials that move the merchandise”, a conditional clause “breaks” the essay into two essential parts. Wright argues that there are two basic commercial types: music-related

and celebrity-related. As he shifts in mid-essay from one subject to the other, we find paragraph initially:

If good music can actually get consumers to sing about an advertiser's products, the use of a star or celebrity helps to catch the viewer's attention.... (italics, L.M.)

In this essay, the conditional presents old information, serving as an introduction to a new topic. It thus parallels the Godié examples, except that the units it creates are much larger. Of course, this discourse use of conditionals is much rarer in English than it is in Godié.

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IS BASIC WORD ORDER UNIVERSAL?

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A fundamental assumption underlying much current work in syntactic typology is that all languages have some basic, syntactically defined, constituent order. It is generally recognized that this order may be altered somewhat for pragmatic purposes, but the basic order is considered a primary characteristic, from which other features of the language can be predicted. It is questionable, however, whether all languages actually have such a basic order. Discourse data from a number of genetically and areally distinct languages indicate that syntactic ordering and pragmatic reordering processes may not in fact be universal. In what follows, it will be shown that forcing such languages into the mold of any basic word order at all is at best descriptively unnecessary, and at worst an obstacle to the discovery of interesting universals.

For many languages, the basic constituent order seems so obvious that criteria for determining it need not be specified. In languages where one order predominates statistically, and any rarer alternative orders are highly marked pragmatically, several reasonable criteria converge to indicate the same choice. For other languages, however, these criteria lead to conflicting results. Sometimes the choice is the statistically most frequent order (Hawkins 1983, Dryer 1983). Sometimes it is whatever order permits the simplest overall syntactic description (McCawley 1970). Sometimes, it is the order accompanied by the least morphological marking (Hawkins 1983). Finally, it may be the least pragmatically marked, or neutral order, although identifying pragmatically neutral sentences is itself problematic. In some of these cases, discourse-intial sentences have been considered the most neutral because they presuppose no preceding context (Pullum 1977: 266). In others, the preferred order for potentially ambiguous clauses has been judged the most neutral (Chomsky 1965: 127). In still others, 'simple, declarative, active clauses

with no complex verb or noun phrases' are assumed to exhibit neutral order (Chomsky 1957:107, Greenberg 1966: 74, Pullum 1981). There have been a few observations on the interrelationships of these criteria. Givón (1979: 87-8) hypothesizes that the statistically most frequent order is actually that found in main, declarative, affirmative, active clauses, and, furthermore, that this is also the least presuppositional. Hawkins, in his ambitious study of word order universals, states that of his three criteria (textual frequency, frequency within the grammatical pattern, and grammatical markedness) simple textual frequency usually provides a sufficiently sensitive basis for the identification of basic order (1983: 13-14). For many languages, however, grammarians note that nearly all logically possible constituent orders appear with sufficient regularity in main clauses to render identification of even a 'preferred order' difficult.

The isolation of pragmatic effects on word order in various languages has also been somewhat problematic, due in part to the well known diversity of terminology and its usage in the analysis of discourse. Linguists associated with the Prague School have traditionally described pragmatic ordering in terms of the concepts 'theme' and 'rheme'. Mathesius (1939) defined the theme as 'that which is known or at least obvious in the given situation, and from which the speaker proceeds' in his discourse (cited in Firbas 1964: 268). Firbas (1964, 1972) sought to refine the notion of theme in terms of 'communicative dynamism'. 'By the degree of communicative dynamism carried by a linguistic element, I understand the extent to which the element contributes to the development of the communication, to which, as it were, it "pushes the communication forward"' (1972: 78). That element carrying the lowest degree of communicative dynamism is called the 'theme', that carrying the highest, the 'rheme'. The Prague School linguists and others (see, for example, Firbas 1964: 270, Greenberg 1966: 100, Lyons 1977: 508, Givón 1979: 296) have remarked that the normal pragmatic ordering of constituents seems to be theme-rheme, or topic-comment. In Firbas' terms, the basic distribution of communicative dynamism is a gradual increase in degree from the beginning of the sentence to the end. Lyons notes that 'Not surprisingly there is a very high correlation, not only in English, but in all languages, between occupying initial position in the utterance and being thematic, rather than rhematic ... To many scholars it has seemed natural that the cognitive point of departure and the communicative point of departure should coincide.' (1977: 507-8)

A number of facts indicate that the interaction between basic word order

and pragmatic theme-rheme reordering principles is not constant from one language to the next. Following work initiated by Mathesius (1928), Thompson (1978) pointed out that languages can vary in the relative effects of syntactic, semantic, and pragmatic considerations on surface word order. In languages like English, the syntactic roles of constituents are the primary determinants of word order, while in languages like Russian and Czech, pragmatic considerations may have a stronger effect. When pragmatic factors do play a role, furthermore, it is not clear that all languages follow the 'natural' progression from theme to rheme. Tomlin and Rhodes (1979: 307) point out that 'in Ojibwa, a VOS Algonquian language, the unmarked distribution of thematic information is reversed from the language-general tendency for thematic information to come earlier in a sentence or clause.' Givón (1938: 145) reports that Ute, 'a mature SOV language with a high degree of pragmatically-controlled word-order flexibility', shows comment-topic order. Similarly, Biblical Hebrew 'is rigidly VO but shows a pragmatically-controlled VS/SV variation' (Givón 1983: 28), also with the order comment-topic.

In the sections below, ordering principles will be examined in some of the languages that have posed problems for grammarians and syntactic typologists. It will be shown that for languages of this type, the assumption of any syntactically defined word order is unmotivated and misleading, as is the assumption of theme, rheme pragmatic reordering. It will also be shown that the existence of such languages has important consequences both for the reliability of standard strategies used in detecting basic word order, and for word order typologies.

1. Word Order in Some Perplexing Cases

In this section, the ordering of constituents will be examined in Cayuga, Ngandi, and Coos. Although unrelated genetically and areally, the three languages show surprising parallelisms in their surface constituent orders.

1.1. The General Character of the Languages

All three of these languages are highly polysynthetic with obligatory pronominal affixes within all verbs. Cayuga is an Iroquoian language spoken in Ontario. Each verb contains obligatory pronominal prefixes referring essentially to its agent and/or patient. Thus a verb like *-atekany-* 'bite' contains an agent pronoun, while a verb like *-nqhqtani* 'be sick' contains a patient pronoun. A verb like *-kqhek-* 'hit' contains a transitive pronoun, referring to a

particular combination of agent and patient. Since no more than two arguments can be referenced in a verb, agent pronouns are used not just for prototypical agents, but for the most agentlike of the primary arguments. Thus in verbs like *-ke-* 'see' or *-nqhwe-* 'like', which do not involve agents, the agentive pronouns refer to the seer and the liker.

Because of their pronominal prefixes, single verbs can stand alone as predication in themselves, and often do.*

- (1) *Shakó-nqhwe'-s.*
he/her-like-HABITUAL
'He likes her.'

One or both arguments of the verb may be further identified by a separate nominal. The pronominal prefixes remain unchanged.

- (2) *John shakónqhwe's.*
John he/her-like-HABITUAL
'John likes her.'
- (3) *Mary shakónqhwe's.*
Mary he/her-like-HABITUAL
'He likes Mary.'

Interestingly, although speakers agree that it is perfectly grammatical to include both a separate agent/subject noun phrase and a patient/object noun phrase within a single sentence, such full sentences occur relatively rarely in spontaneous discourse. It is easy enough to elicit them from bilingual speakers, however. When asked, speakers agree that all logically possible constituent orders are grammatical: SOV, SVO, VSO, VOS, OSV, and VSO.

Ngandi, an Australian aboriginal language of eastern Arnhem Land, is also polysynthetic with obligatory pronominal prefixes within the verb. As in Cayuga, the prefixes remain in the verb whether separate noun phrases further identify the subject or object or not. All Ngandi data here come from texts recorded by Heath (1978).

Ngandi (Heath 1978: 192)

- (4) *Barma-ma-ŋi.*
3PI/MA-get-PAST CONTINUOUS
'They used to get it.'
- (5) *ma-datam-yug* *barma-ma-ŋi.*
MA-water lily fruit-ABS 3PI/MA-get-PAST CONTINUOUS
'They used to get water lily fruit.'

- (6) *Barma-ma-ŋi* *ba-din?-du-yuj.*
 3PI/MA-get-PAST CONTINUOUS Pl-woman-ERGATIVE-
 ABS

'The women used to get it.'

Ngandi nouns are classified into noun classes. The noun referring to the water lily fruit above is of the MA class, and accordingly carries a prefix *-ma-*. The noun referring to the women, of the BA class, carries a prefix *-ba-*.

Case relations are marked on nouns by suffixes, so that the noun 'women', referring to the subject of the transitive verb 'get', carries an ergative suffix *-du*. (Objects of transitives and subjects of intransitives carry zero suffixes. The suffixes glossed as ABS by Heath are not case markers.) While nominal case marking is ergative, pronominal reference within verbs is accusative.

As in Cayuga, clauses containing both a separate subject and a separate object are possible, but rare. When they do occur, any order is possible.

Coos, an Oregon language, is also polysynthetic with pronominal affixes. Subjects of intransitive verbs are referenced by 'loosely prefixed' pronominal clitics on the verb. Subjects of transitive verbs are referenced by combinations of the proclitics and transitive verbal suffixes. All data here come from the Hanis Coos texts recorded by Frachtenberg in 1909 and published in 1913 and 1922.

Coos (Frachtenberg (1922:351, 425)

- (7) *e^č-ā mī*
 you-take-I
 'I take you along'
- (8) *ī lxa-ts* *lE yā bas;*
 look at-TRANSITIVE the maggot
 'he looked at the maggots'
- (9) *x-yā bas* *q!m-its.*
 DISCRIMINATIVE-maggot eat-TRANSITIVE
 'maggots ate him'

(Third person pronominal affixes appear as zero.) Subjects of transitive verbs, like the maggots above, carry the prefix *x-*, termed 'discriminative' by Frachtenberg. Thus case marking within both nouns and verbs is essentially ergative.

As in Cayuga and Ngandi, clauses containing both a separate subject and

a separate object are relatively rare, and word order is variable. As Frachtenberg noted, 'The syntactic structure of the Coos sentence is very simple, and is characterized by the facility with which the different parts of speech may shift their position without changing in the least the meaning of the sentence.' (1922: 319)

1.2. Strategies for Determining Basic Word Order

Since all word orders occur in all of these languages, the identification of a basic order is not as straightforward as in many other languages. Several strategies are possible.

1.2.1. Statistical Frequency

As noted above, a common diagnostic of basic order is statistical frequency (Dryer 1983). Whichever order appears the most often might be considered basic. The crucial constructions, however, clauses containing both separate subject and separate object noun phrases, are relatively rare in spontaneous discourse in all of the languages. Sample counts of clauses in texts indicate that in Cayuga, perhaps 1% - 2% of all clauses contain three major constituents, in Ngandi, approximately 2%, and in Coos, 2% - 3%. Yet even among these small sets of clauses, all orders are represented. Since such constructions appear so rarely, strong statistical evidence for any order is simply lacking.

1.2.2. The Ambiguity Test

Another frequently cited diagnostic is the word order preferred in potentially ambiguous sentences (Chomsky 1965). A Cayuga speaker was presented with the sentences below, constructed from shorter sentences he had produced in a narrative.

- (10) a. *Khyotro:wé: Ohswe:ké' ahqwati:kwé:ni'*. (SOV/OSV)
Buffalo Six Nations they beat them
- b. *Ahqwati:kwe:ní' Khyotro:wé: Ohswé:ké'*. (VSO/VOS)
they beat them Buffalo Six Nations
- c. *Khyotro:wé: ahqwati:kwe:ní' Ohswé:ké'*. (SVO/OSV)
Buffalo they beat them Six Nations

He remarked that they were all good Cayuga sentences, but that in all cases, it was unclear who beat whom. He could not choose a preferred reading. Other similar sentences produced the same reaction. The overall rarity of

such full sentences suggests that their very appearance is a marked phenomenon, so that none of them should be considered reliable models of unmarked constituent structure. (In the following discussions, all subjects will be labelled S, whether they are agents or patients, ergatives or absolutives, since all follow the same principles, and this facilitates comparison among languages. Direct objects will be labelled O, and predicates V.)

1.2.3. Relative Order within Pairs

Predicates do appear frequently with a single nominal constituent. This fact suggests that in order to discover the basic constituent order of Cayuga, one could determine the orders found between pairs of constituents, then combine the results. (If SV and VO, then SVO.) This is of course analogous to the usual strategy for determining the relative order of morphemes in a language when all of them could not possibly cooccur in a single word.

Separate subject nominals are somewhat rare in Cayuga discourse, appearing in approximately 12% of the clauses. (All examples cited below were taken from spontaneous narratives or conversation unless otherwise specified.) Sometimes subjects appear before their predicates. The sentence below is from a discussion of how severe the winter is likely to be. The Whites have predicted a hard winter, but the speaker is not convinced.

SV

S

V

(11) *Ne:’ ki’ kwáhs ts’inqwahé’tá’ ahsq̄ hne:’ kaná:kre’.*

it is just most fishworm still contr dwell

‘There are still plenty of fish worms around.’

S

Tsi’t’eshq:’q̄ hni’ ahsq̄ thé hne:’

birds also still not contr

‘The birds haven’t left yet either.’

V

nq̄:kyé t’eonahqué:kyq:

this they have not gone

Subjects can also appear after their predicates. The sentence below comes from a description of how to hunt rabbits.

VS

V

S

(12) *... the’ théshatiyé:ti: wa’ne:’ hénq:kwe’tase’shó:’qh.*

not they don’t know today young men

‘The young men of today do not seem to know how to do it.’

Direct object nominals often appear before their predicates.

Objects also appear after their predicates.

- (14) *Ne': s'eké:s ne' swe'ké:ha henatéhni:nq kq:s*
 it is usually the long ago they sell usually
 'A long time ago, they used to sell rabbits.'
 O
ne' kwa'yq'.
 the rabbit

Time adverbials can occur on either side of the predicate.

- (15) *Sqhé kyę́:’ nónę́:’ ka:tó teyonátawenye’.*
 night this you know I say they stir themselves
 ‘As I said, at night, they walk around.’

- (16) *O:né kę: hne:' thó kaya'taní:yq:t*
 then usually contr there body hangs
 'Then usually the body will be hanging there
 T
settsí:ha thó:kyęh.
 very early that
 in the morning.'

Locative constituents can appear on either side of the predicate.

- (17) *Kaha:kq: həhse:*
 in the bush there you will go
 'You will go out in the bush.'

- (18) *Teyo:natawenyé' se' ne:' kyotkq:t ohnékakq:.*
 they are stirring just it is always in the water
 'They are always moving around in the water.'

Manner adverbs can also precede or follow verbs.

- (19) *Ske:nq:’q sh̥e n̥ehse:kwe:ní’ t̥ehsátaħahk.*
 slow as so you will be able you will walk
 ‘Walk as slowly as you can.’

- (20) *Ethsatwata:sé'* ske:nq:’oh.
 you will come around slow
 ‘You should come around carefully.

Nearly any word order is possible. As can be seen from the examples above, even the predicates have no constant position.

Ngandi shows the same variation. Separate subjects occur in only about 10% of Ngandi clauses, but they can precede or follow their predicates, whether these are transitive or not.

- (Heath 1978: 206) S V

(22) *Načuwelen̨-uy* *gu-jark-yuŋ* *gu-ja-walk*, ...
 then-ABS GU-water-ABS GU-now-go through
 ‘Then water passes through’

- (Heath 1978: 206) V S
 (23) *Načuwelen-uy* *gu-ja-geyk-da-ni* *gu-jark-yuŋ*
 then-ABS GU-now-throw-AUG-PR GU-water-ABS
 niču?.
 this way
 ‘Then the water rushes through.’

Objects also appear either before or after their predicates.

- (Heath 1978: 199)

O	V	
---	---	--

(24) *Ni-yan-a-yuŋ n̥aru-ja-bol-kuba-na gamakun?*, ...
 NI-honey-ABS IPIEx:NI-now-go out-CAUS-PR properly
 'We take out the honey entirely.
 (We then put it entirely into the what's-it, the cooliman.)

V	O
<i>naru-gorla-ŋi</i>	<i>ni-guŋ-yuŋ</i> , ...
IPIEx/NI-put in-PAST CONT	NI-honey-ABS
We used to put the honey in.'	

Oblique nominals appear anywhere as well. Instrumentals appear either early or late in the clause.

- (Heath 1978: 197) I V
 (25) *ma-darpa?-du-yun ñara-ja-derp*, ...
 MA-string-INST-ABS IPIEx/A-now-attach
 ‘We attach it (the spearhead) with string.’

- (Heath 1978: 241) V I
 (26) *barba-ja-poison'em?-du-yi manga?, ma-mawuya-tu*,
 3PI/3PI-now-poison-AUG-PCON maybe MA-poison-INST
 ‘Maybe someone poisoned them, with magical poison.’

Datives appear both early and late.

- (27) *ni-bot-gu* *naru-bak-wan?*,
 NI-bee-DAT IPIEx/NI-BEN-look
 'We look for bees.'

- (Heath 1978: 213) V Dat
 (28) *yanači ñar-ja-ruđu-ni* *gu-galaŋ-gu,*
 longtime !PIEx-now-go-PRES GU-egg-DAT
 ‘We go for a long time looking for eggs.’

Allative noun phrases, indicating locative goal, can appear early or late.

- | | | |
|--|---------------------|-----------------------|
| (Heath 1978: 197) | Allative | V |
| (29) <i>A-murjiñ-uy</i> | <i>ma-gami-gič</i> | <i>ñara-yo-ŋana</i> , |
| A-shovelspear-ABS | MA-spearshaft-ALL | IPIEx/A-put on-PR |
| 'We put the shovel spearhead onto the spear shaft.' | | |
| | V | Allative |
| <i>buluki?</i> <i>a-wiłmur-yuŋ</i> | <i>ñara-yo-ŋana</i> | <i>ma-gami-gič</i> , |
| also | A-wirespear-ABS | IPIEx/A-put on-PR |
| We also put the wire spear prongs onto their spear shaft.' | MA-shaft-ALL | |

As in Cayuga, all constituent orders appear. Even the predicate can occupy almost any position within the clause.

Constituent ordering in Coos is as variable as it is in Cayuga and Ngandi. Subjects can appear either early or late in their clauses, whether transitive or intransitive.

(Frachtenberg 1922: 426)

S L V

- (30) *X:ōwāyās hän dji'letc xa'lEmats ...*
 snake his at thighs it wraps around him
 'The snake coiled around his thigh.'

L V S

- Hän we'hel lau he'taq lE x:ōwā'yas.*
 his to waist that it arrived the snake
 It crawled up to his waist.'

Objects can also appear either early or late.

(Frachtenberg 1913: 7)

O V

- (31) *TE kā'wil hanL īs yō'qat.*
 that basket shall we two split it in two
 'Let us split this basket in two!'

(Frachtenberg 1913: 6)

V O

- (32) *Ūx k:iłō'wit tE L!tā.*
 they two saw it that land
 'They saw the land.'

The same mobility is typical of oblique nominals. Compare the position of the locative nominals in the sentence below.

L V

- (33) *Tsō ltce'īsetc lau ūx hí'tōuts.*
 now ocean beach on that they two put it down.
 'They put it on the sand beach.'

(Frachtenberg 1913: 18)

- (34) *K:iłō'wít ltciła'āis.*
 he saw it shore close to
 'He saw (different kinds of food lying) along the beach.'

No basic word order emerges from the examination of pairs of constituents. All alternatives occur. The obvious question raised by sets of sen-

tences like these is just what function the alternatives serve. Surely speakers would not randomly vary a feature as salient as word order. Since order does not signal the syntactic or semantic roles of constituents, perhaps it has a pragmatic function.

1.3. Definiteness

As noted earlier, pragmatic ordering has most often been described as a tendency for thematic information, or topics, to appear before rhematic information, or comments. Unfortunately, themes, or topics, have been defined in a variety of ways. One characteristic often associated with themes is givenness, or predictability, in contrast to the newness or unpredictability of rhemes. Recall that Mathesius defined the theme as 'that which is known or at least obvious in te given situation, and from which the speaker proceeds' (1939: 234, cited in Firbas 1964: 268). Since definite nominals refer to entities that the speaker assumes the hearer can identify, either from general knowledge or specific context, a comparison of the positions of definite and indefinite noun phrases might provide a key to the identification of pragmatic factors in word order. Li and Thompson pointed out, for example, that the tendency in Mandarin and Russian 'to place indefinite nouns after the verb and definite nouns before the verb seems to be a manifestation of a general and widespread tendency among languages to put known information near the beginning of the sentence and new information near the end of the sentence' (1976: 172).

None of the three languages described here marks definiteness obligatorily, but definiteness can be specified by means of certain nominalizing particles and demonstratives. Cayuga has a particle *ne'* that can optionally precede definite nominals, including proper and possessed nouns. When this definite particle is inserted into manufactured sentences containing both separate subject and object nominals, a relationship between definiteness and word order can be detected. The particle cannot grammatically precede a nominal early in the sentence below.

- (35) a. **Ne' John shakónqhwé's Mary.* (*ne'S-V-O)
the John he likes her Mary
- b. **Ne' Mary shakónqhwé's John.* (*ne'O-V-S)
the Mary he likes her John.
- c. **John ne' Mary shakónqhwé's.* (*S-ne'O-V)
John the Mary he likes her

- d. **Mary ne' John shakónqhwé's.* (*O-ne'S-V)
 Mary the John he likes her

It can, however, precede a nominal near the end of a sentence, and is often added when full sentences are repeated by speakers. All of the (elicited) sentences below mean 'John loves Mary'.

- (36) a. *John Shakónqhwé's ne' Mary.* S-V-ne'O
 John he likes her the Mary
 b. *Mary shakónqhwé's ne' John.* (O-V-ne'S)
 Mary he likes her the John
 c. *Shakónqhwé's John ne' Mary* (V-S-ne'O)
 he likes her John the Mary
 d. *Shakónqhwé's Mary ne' John.* (V-O-ne'S)
 he likes her Mary the John
 e. *Shakónqhwé's ne' Mary ne' John.* (V-ne'O-ne'S)
 he likes her the Mary the John

This ordering of indefinite before definite is the reverse of that found in Chinese, Russian, Czech, and the more familiar Indo-European languages for which pragmatic ordering has been described. It should be emphasized that the sentences cited above were elicited, not culled from narratives or conversation. A survey of spontaneous discourse does indicate that indefinite nominals tend to appear near the beginning of their clauses, while definite nominals tend to appear near the end.

- Indef V
 (37) *Katsihwá' kihsa:s.*
 hammer I seek
 'I am looking for a hammer.' (said in a hardware store)
 V Def
 To: ti' nika:nq:' nq:kyę katsíhwa'?
 how then so it costs this hammer
 'How much does this hammer cost?'

The indefinite-definite order appears to be characteristic of Ngandi discourse as well. Note the translation of (22) above. When the water is first mentioned, it appears early in the clause and is translated with an indefinite noun. At the second mention, in (23), it appears late, and is translated with a definite noun. In the passage below, the narrator is describing how Aborigines used to get yams and roast and peel them. When the yams are

introduced, they are indefinite, and appear early. When the skin first appears in the second line, it is identifiable from the preceding context, so it appears late. In the third line, it is identifiable from previous mention, so it appears late again.

(Heath 1978: 210-211)

- | | | |
|--|-----------------|------------------------------|
| | Indef | V |
| (38) <i>buluki?</i> | <i>ma-jalma</i> | <i>barma-ma-ni</i> , ... |
| also | MA-yam sp | 3Pl/MA-get-PRESENT |
| 'They get round yams (and roast them) | | |
| | V | Def |
| <i>ma-ja-bolk-du-ni</i> , | | <i>ma-gula?-nuŋayi-yuŋ</i> , |
| MA-now-appear-AUG-PRES | | MA-skin-its-ABS |
| Their skin comes off. | | |
| | V | Def |
| <i>barma-geyk</i> , <i>barma-geyk</i> | | <i>ma-gula?-yuŋ guniŋ</i> , |
| 3Pl/MA-throw | | 3Pl/MA-throw MA-skin-ABS |
| that's all | | |
| They throw the skin away, and that is that.' | | |

The indefinite order also appears characteristic of Coos. The identity of the child in the second line below is inferrable from the preceding line; as a definite nominal, it appears late. The person mentioned in the last line is new on the scene, indefinite, and clause-initial.

(Frachtenberg 1913: 11)

- | | | |
|--|------------|----------------------|
| | Indef | V |
| (39) <i>Má</i> | <i>lau</i> | <i>mitsilti'ye</i> . |
| nevertheless | that (he) | pregnant became |
| 'Nevertheless he became pregnant. | | |
| | V | Def |
| <i>Ta lau qanō'tca l'nuwít l'E ā'la.</i> | | |
| and that outside to (he) pulls the child | | |
| The child was all the time trying to come out, | | |
| | V | Def |
| <i>Hats in qantc lau L!ēitc la ā'la.</i> | | |
| just not way that go out his child | | |
| but could not do it. | | |
| | Indef | V |
| <i>Tsō mā īilt.</i> | | |
| now person (he) sent (it) | | |
| So they sent someone (to the north).' | | |

1.4. Old versus New Information

Overt definite marking accounts for a significant proportion of constituent ordering in all three languages, yet it does not account for all of it. A principle must be found that correlates highly with definiteness, but explains the remaining cases as well. Consider the following Cayuga passage. A dinner guest was asked whether he liked baked potatoes. He replied that yes, he thought he probably did.

- (40) *Ne:’ kyé:’q̄ thréhs i:nq̄ kyé:’q̄ é:ke:k.*
 it is I guess too far I guess I will eat
 ‘It’s just that I eat them so seldom.

Def NEW V

- Ne:’ tshq: ne’ oa’wistá’ the’ ní:’ t’e:ke:s.*
 it is only the peelings not I do I eat
 I just don’t eat the skins.

V Def Old

- Kwiskwís kyé:’ hne:’ tshq: ka:tí:s ne’ oa’wista’.*
 pig just contr just they eat the peelings
 Only pigs eat the skins.’

In the second line, the skins appear before the verb, although they are definite, inferrable and thus identifiable from the previous mention of the potatoes. The skins represent newer information than the verb ‘eat’, which had just appeared in the preceding sentence, however. In the third line, the skins, now old information, appear late, while the pigs, completely new information, appear first.

The same is true in Ngandi. In the passage below, the wood *wulčum* spears are generic. When first introduced, they appear early in the clause. After that, they appear late.

(Heath 1978: 187)

New V

- (41) *gu-wulčum balaka ñaru-ga-?-yaw-du-ŋi,*
 GU-wood spear before IP1Ex/3MaSg-Sub-DUR-spear-AUG-P
 V Old
a-jeñ-uj bara-ga-yaw-du-ni, gu-wulčum-du.
 A-fish-ABS 3Pl/A-Sub-spear-AUG-P GU-wood spear-INST
 They used to spear fish with *wulčum* spears.’

The same is true of Coos. New information tends to precede old informa-

tion, as can be seen in the following passage. Both noun phrases referring to the mat are definite, but the first time the mat occurs, it appears at the beginning of its clause. The second time, it is at the end.

(Frachtenberg 1913: 7)

- | New | V | Old |
|---|---|-----|
| (43) <i>TE tc!̄i'cil yūL iš yō'qat ...</i> | | |
| that matting we two split it | | |
| “Let us split this mat.” | | |
| (They did so, and went down to examine the earth. The earth was | | |
| still not solid, even ...) | | |
| <i>i lau tcī ux hī'touts hE tc!̄i'cīl.</i> | | |
| when that there they two put it down the matting | | |
| after they had put down the mat.’ | | |

The principle of new information before old predicts the order of constituents in a large majority of clauses. It is not surprising that this should correlate so often with the indefinite/definite distinction, since new entities are most often definite. There are still some constructions that cannot be explained purely in terms of a preference for new before old, however.

1.5. Importance

In some cases, both constituents are equally given or equally new. A Cayuga speaker telephoned his friend to announce that he had lost his wallet.

- | New V | New O |
|---|-------|
| (44) <i>Ni: k̄e: thóne:' qkahtq̄: ne' akétkw'̄eta'.</i> | |
| just here there I lost it the my wallet | |
| ‘Mind you, I lost my wallet.’ | |

Both constituents are completely new, neither present nor alluded to in previous discourse (there was none) nor in extralinguistic context (also absent, since this was a telephone conversation). In this case, the new verb precedes the new object. Yet consider the utterance below. A man has just told his friend that he cut his foot with an axe. His friend, horrified, asks if he is badly hurt. He replies no, not really,

- | New O | New V |
|--|-------|
| (45) <i>thréhs kȳe:́ q to:kéhs w̄ahatk̄waté:s tewaké:sq:.</i> | |
| because just-suppose really thick shoes I wear | |
| ‘I guess because I had really thick shoes on.’ | |

Again, both the verb ‘wear’ and the object ‘thick shoes’ are completely new, neither mentioned in previous discourse, nor referred to subsequently. This time, however, the new object precedes the new verb.

A father, trying to make his daughter hurry in the morning, said,

- | New V | New S |
|---|------------------|
| (46) <i>O:né kokhwáihse:</i> | <i>sanó:ha'.</i> |
| now she has finished the food | your mother |
| ‘Your mother has already finished cooking breakfast.’ | |

Both elements are equally new, neither mentioned or alluded to in previous discourse, neither within view of the speaker or hearer, but equally identifiable. Neither is referred to again in subsequent discourse. The new predicate precedes the new subject.

The speaker cited below was describing his misadventures in the woods. No saplings or bushes had been mentioned previously, nor of course any grabbing, or even the coat. The saplings are not totally unexpected, since the setting is the woods, but the grabbing is also not totally unexpected, since the speaker’s clothing is torn. Neither is mentioned subsequently. The order is new subject before new predicate in this case.

- | New V | New S |
|---|------------------------------|
| (47) <i>Shé nyq:’ n’atq:ta:ké:’ thó hne:’ ohq:tá’</i> | <i>takay’ataw’ithrá’keh.</i> |
| so far on the way there contr sapling | |
| ‘Along the way, bushes | |
| it grabbed me on my coat. | |
| caught on my coat.’ | |

In each of the sentences above, the constituent conveying the principal information of the utterance appears first. The most important part of (44) the loss, of (45) the thickness of the shoes, of (46) the finished state of the breakfast, and (47), the bushes. Since new information is usually more important than old information, the principle of new before old usually accounts for constituent order.

The importance principle works equally well in Ngandi. In the passage below, the narrator is describing how Aborigines used to fish with a hook and line, in addition to the spears. (The verb root *-woyk-* is translated as ‘angling, fishing with line and hook’, but contains neither the noun root *-jeñ-* ‘fish’ nor the verb root *-ma-* ‘get’.)

(Heath 1978: 198)

- (48) *buluki?-yuŋ ñar-ga-woyk*,
 also-ABS IPIEx-SUB-angle
 ‘We also go angling.
ñar-ja-woyk-du-ni *a-jara-ɬu*,
 IPIEx-now-angle-AUG-PRESENT A-what’s it?-INST
 We go angling with what’s it?
o-monaya-ku-yiňuŋ ñar-ja-bak-woyk
 A-White-GEN-REL IPIEx-now-BEN-angle
 the thing belonging to Whites, we go angling then.

Old V	Old O	
<i>ñar-ga-woyk-du-ni</i>	<i>ñara-ga-ma-ni</i>	<i>a-jeň-uy</i> ,
IPIEx-SUB-angle-AUG-PR	IPIEx/A-SUB-get-PR	A-fish-ABS
We go angling and catch fish.’		

In the last line, both the verb ‘get’ and the object ‘fish’ are inferable old information, since the entire discussion has been about fishing. (Neither has been mentioned lexically.) Note that here, the old predicate precedes the old object. This is because the point of the discussion is the getting, the fact that when they use a hook and line, they still do catch fish.

The passage below is from a description of plum gathering.

(Heath 1978: 195)

- (49) *ma-mala-galič-uŋ ñarma-ŋu-ni*,
 MA-group-other-ABS IPIEx/Ma-eat-PAST CONT
 ‘Some (of the plums) we ate (as they were),
 New V
ma-mala-galič-uŋ ñarma-gul?-du-ŋi
 MA-group-other-ABS IPIEx/MA-pound-AUG-PC
 New Loc
gu-jundu-gi
 GU-stone-LOC
 others we pounded on a stone (so that they became

Both the predicate and the locative nominal are completely new. The locative follows the predicate. Compare the passage below.

(Heath 1978: 211)

New Loc New V

- (50) *a-dandiya?-gi barma-ja-yo-ŋana*,
 A-mat-LOC 3PI/MA-now-put in-PRESENT
 'We put (that food) on mats.'

Here again, both the locative nominal and the predicate are completely new. No previous mention had been made of mats or putting. In this case, however, the locative precedes the verb. The reason is clear. In (49), the pounding is more important than the rock while in (50), the mats convey the most important information of the clause.

The same principle can be seen in the Coos texts. The sentence below is near the beginning of a narrative. There has been no previous mention of any body of water nor of dryness or wetness.

(Frachtenberg 1913: 14)

- | New V | New S |
|-----------------------------|------------------|
| (51) <i>īn tc!le'xEm tE</i> | <i>tā'nik:</i> |
| not dry | that there river |
| ‘There was no low tide.’ | |

Here, the new predicate precedes the new subject. Compare the sentence below, however. Again, both the subject and predicate are new. This time, however, the new subject precedes the new predicate.

(Frachtenberg 1913:9)

- | New S | New V |
|---|-------|
| (52) <i>Haqa'tí laā'ya ltce'ísītc le'úx nhä'wis L!tā.</i> | |
| tracks go to it beach on their ready land | |
| (‘Suddenly they saw tracks on the ocean beach.’) | |

The main point of the clause in (51) is the lack of dryness (because Crow had no chance to get food), while the most important constituent in (52) is the tracks. Sentences like this one suggests a particular way in which constituents may be considered important in discourse.

1.6. Topic Shift

The Cayuga passage below comes from the cosmology legend. A woman has fallen from the heavens through a hole in the sky, and as she falls, she wonders what will become of her. Suddenly she notices something.

- (53) *ne' nq:kyé ne' nq: eya'tqkyé'*
 the this the then her body is flying along
 ‘And then, as she was falling,
nékwa' a'qñihna:tó:k tho:kyeh ne:' nqne:'
 and then she noticed it there it is you know
 she noticed

ne:’ ts'i't'q̥shq:’qh, ha'tekatiy'atá:ke:
 it is birds many bodies
 birds, all different kinds of them,
tho katiky̥enq:kyé’s teyakotíkāhne:’
 there they are flying around they are looking at her
 flying around there, looking at her,
shēnhó: n̥e:ky̥eyá’tq̥kye’.
 where this her body is flying
 as she fell.

S

Ne:’ ne’ o:né n̥e:ky̥et ts'i't'q̥shq:’q
 it is the now this birds
 Now at this time, these birds

V

teyotiya’towéhtq atkatiya’to:wéht ne’ n̥óne:’
 they are thinking they thought the you know
 were thinking that
n̥e:ky̥et a:kenat’enyé:te’ ...
 this they should try
 they should really try (to lessen her misfortune).’

Note the early position of the underlined *ts'i't'q̥shq:’q* ‘birds’ in the second sentence. This noun is neither new information, since the birds were just mentioned in the previous clause, nor necessary for disambiguation, since the zoic plural pronoun in the verb ‘they are thinking’ clearly refers to the birds and not to the woman. It is prominent for another reason. It represents a new topic, a new point of view. The text continues to describe the birds’ decisions and their resulting attempts to save the poor woman. A shift in topic can thus be considered sufficiently important to appear early in a sentence.

Not all new subjects appear clause-initially. Not all new subjects introduce new topics. A man and his wife had left a tape recorder running for a long time as they conversed about a wide range of different things, including what was scheduled at the longhouse that evening, who might be putting on a supper and how it would be done, a neighbor who was to get her fortune told, and when the husband was planning to return from his weekend trip. At that point a car was heard outside. The wife said:

V

S

(54) *Kwé: sakáeyq’, thó:kyeh.*
 well they (F) arrived again that

'Well, they're back.'

The husband answered:

- | | | |
|--|---|---|
| | V | S |
|--|---|---|
- (55) *O:né ki' key:' sakáeyq', kashehawáhkshq'.*
 now just then they returned your daughters
 'Yes, your daughters have returned.'

The daughters had not been mentioned at all up to this point. The significant part of the message here was the return, rather than the daughters, however, because it meant that the conversation was over. The daughters were not introduced as new topics.

The same importance of new topics can be seen in the Ngandi texts. The passage below is part of the narrator's reminiscences about his experiences as a police tracker. He and two others had captured a criminal and taken him to the government office, where they sat waiting. Finally,

- (Heath 1978: 250)
- | | | |
|-------------|---|--|
| New Topic S | V | |
|-------------|---|--|
- (56) *ni-Ted Ervin-yuŋ ni-yimi-ñ-? “...”*
 MaSg-Ted Ervin-ABS 3MaSg-say-PPUNC-Ø
 'Ted Ervin (a high-ranking government official) said, "...”'

Ted Ervin, a new topic, appears at the beginning of the clause.

The function of topics within narratives can often be seen by comparing the contexts of different constructions. The first sentence below is part of a description of the various kinds of foods Aborigines used to collect. The narrator has just mentioned that they used to roast and eat euros and antelopine kangaroos.

- (Heath 1978: 192)
- | | | |
|-------------|---|---|
| New Topic O | V | S |
|-------------|---|---|
- (57) *ma-datam-yuŋ, barma-ga-ma-yi ba-din?-yuŋ,*
 MA-water lily fruit-ABS 3Pl/MA-SUB-get-PC Pl-woman-ABS
 'The women used to get water lily fruits (seed pods).'

Both the water lily fruit and the women are new information here, neither previously mentioned, nor inferable. This discussion is about types of food, however, so the water lily fruit appears first. The narrator continues discussing the food: 'We ate that food, we ate vegetable food'.

In a different narrative, the same speaker mentioned the same custom. This time, he had said, 'Then we get up and leave. We are going now for veg-

etable food instead of meat, for water lily root corms, fruits, and stems — we eat that.'

(Heath 1978: 210)

- | New Topic S | V |
|--|--|
| (58) <i>ba-din?</i> <i>yanači</i> <i>ba-ja-wulup,</i> <i>ba-ja-diŋ?-gu</i> | Pl-woman all along 3Pl-now-bathe 3Pl-now-woman-DAT |
| ‘The women go into the water, (that work) is for women. | |
| <i>manga?</i> <i>ma-guyk</i> | <i>barma-ma-ni, ...</i> |
| maybe MA-water lily species | 3PI/Ma-get-PRESENT |
| Maybe they get guyk, ...’ | |

Both the women and going into the water are completely new here, as before, but this time the women appear first in the clause instead of last. This passage is about women and women's work. The women remain the subject of the next several clauses.

The same prominence of new topics can be seen in the Coos texts. The narrative cited below begins with a description of Crow and his habits. Then a new character is introduced.

(Frachtenberg 1913: 15)

- | New Topic S | V |
|--------------------------------|---------------------|
| (59) <i>Xyî́xei dä́mil lau</i> | <i>hálqait.</i> |
| one man (to) that one | (he) came to him |
| ‘Once a man came to Crow, | |
| <i>Lau xwändj tīlt</i> “...” | |
| that one that way | (he) told it to him |
| and said, “...”’ | |

The narrative continues with the man's suggestions.

1.7. Contrast

Important contrasts are not limited to new topics. Any constituent representing a focus of contrast is generally considered sufficiently important to occur early in the clause, whether it is indefinite or definite, new or old, a topic or not. These constituents represent a focus of contrast.

The following (elicited) Cayuga sentences illustrate the positions of contrasting constituents.

- V S
 (60) *Thę' t'a:ke:ká's ohya', kęhswahéhs ní:'.*
 not do I like it fruit I hate it I
 'I don't like fruit, I hate it.'
- S V
 (61) *Thę' ní:' t'a:ke:ká's ohya', Péte hne:' hó:ka's.*
 not I do I like it fruit Pete contr he likes it
 'I don't like fruit, Pete does.'

The use of the separate pronoun *ní:* 'I, myself' in the last sentence above is interesting. Languages with pronominal affixes always contain separate pronouns as well, although they appear much less frequently than in languages without the affixes. Grammarians of such languages often note that the separate prefixes seem to appear near the beginning of clauses unusually often. This is no accident. In polysynthetic languages, separate pronouns have a special function; they generally indicate special emphasis or contrast. The contrastive force of the independent pronouns can be seen in the Cayuga sentence below. The speaker was provided with a context and asked to translate the English sentence 'I'm the one who broke it.'

- (62) *I:' atkriht.*
 I I broke it
 'I'm the one who broke it.'

Pronominal contrasts are not automatically the most important elements of their clauses, as can be seen in (60) above. They may also be used to set up a double contrast. Offered a platter of chicken, the dinner guest said:

- Cayuga
 (63) *Ohsı:ná' ki' ní:' q:ke:k.*
 leg just I I will eat it
 'I'll have a leg, myself.'

This reply contrasts two entities: the drumstick as opposed to other pieces, and the speaker as opposed to other diners. Here, the drumstick contrast was more important than the diner.

The other languages exhibit similar ordering or contrastive information. In each Ngandi clause below, the initial constituent represents the focus of some contrast.

Ngandi (Heath 1978: 201)

- (64) *gu-dawal-?ñirayi-gi-yuŋ ma-gami-bugi? ñar-ga-jal-du-ŋi,*
GU-country-our-LOC-ABS MA-spear-only IPIEx-SUB-hunt kg
‘In our country we used to hunt kangaroos with spears only.
gu-ni-?-yuŋ gu-dawal-yuŋ ba-wan-gu,
GU-this-Ø-ABS GU-country-ABS PI-PRO-GEN
This country belongs to someone else.
ñer-yuŋ gu-na-? yuri,
we-ABS GU-that-O north
As for us, (we were) there to the north.’

Before the Coos sentence below, the narrator described a bargain suggested by Crow. Crow wants to exchange his lightning for the evening low tide. The bargain is accepted, and Crow obtains the tide.

Coos (Frachtenberg 1913: 18)

- (65) *Halt! xä'ka hE lō'waku L!āa.*
now he the lightning has as booty
‘while the other man came into possession of the lightning’

The contrastive pronoun *xä'ka* ‘he’ occurs at the beginning of the clause. The second focus of contrast, the lightning, follows. Any kind of constituent, pronominal, nominal, or verbal, can be the focus of a contrast. In all cases the ordering is the same. If the contrast is the main point of the predication, and thus the most important, the focus of the contrast will appear initially.

1.8. The Determination of Word Order in Cayuga, Ngandi, and Coos

1.8.1. The Newsworthiness Principle

Word order in these languages is thus based on pragmatic considerations, on the relative newsworthiness of the constituents to the discourse. An element may be newsworthy because it represents significant new information, because it introduces a new topic, or because it points out a significant contrast.

A test for the ‘most newsworthy first’ principle is provided by questions and answers. Presumably in normal conversation, the most important constituent of an answer is that which corresponds to the interrogative word of the question. In Cayuga, this word appears initially, whether it be a subject, object, time, location, or anything else. (All of the questions and answers below were spontaneous, not elicited.)

SV

- (66) Q. *Sq: ḥesne:?*
 who you two will go
 'Who are you going with?'
 A. *Sám ḥya:khne:’.*
 Sam we two will go
 'I'm going with Sam.'

OV

- (67) Q. *Tq' hq'te' a:yé:’ ihse: a:shni:nq’?*
 what it seems you think you would buy
 'What do you think you'd like to buy?'
 A. *O:, akya'tawi'thrá' ki' a:yé:’ kihsa:s a:khní:nq’.*
 Oh dress just seems I seek I would buy
 'Well, I am just looking for a dress.'

TV

- (68) Q. *To: ti' n'aonishé' tho hekae's?*
 how then so it lasted there they two were there
 'So how long were they there?'
 A. *Tekhní: akyaqtatokéhthé' konáhtékyq:.*
 two weeks they two were away
 'They were away for two weeks.'

LV

- (69) Q. *Kqe ti' h̃eswe:?*
 where then you all will go there
 'Where are you all going then?'
 A. *Ó:, othow'eké ḥeya:kwe:’.*
 Oh at the cold we will go there
 'Oh, we'll go up north.'

QV

- (70) Q. *To: ti' nika:nq:?*
 How then so it costs
 'So how much does it cost then?'
 A. *Kéi n'ate'wənya:w'é sikwa:ti:há nika:nq:’.*
 four so hundreds a bit beyond so it costs
 'It costs a little more than four hundred dollars.'

Answers to alternative questions yield the same evidence. The constituent

that provides the most important information, the one whose information answers the question, appears first.

SV

- (71) Q. *Atisníjtháę' kéh, John, Mary k'ishęh?*
 you two talked ? . John Mary or
 'Did you talk to John or Mary?'
 A. *Máry ki' akyakhníjtháę'.*
 Mary just we two talked
 'I talked to Mary.'

OV

- (72) Q. *Oti:, kéh, kha:fí nikę'q ęhsnékeha?*
 tea ? coffee either you will drink
 'Will you have tea or coffee?'
 A. *Oti: ękhnékeha'.*
 tea I will drink
 'T'll have tea.'

Answers to yes-no questions provide the same evidence again.

LV

- (73) Q. *Kahqwakókéh ha'káhtahk?*
 in boat ? they went there
 'Did they go by boat?'
 A. *Thé'. Tekatęhné ha'káhtahk.*
 no in it flies they went there
 'No. They went by airplane.'

PossV

- (74) Q. *I:s kęh satshe:nę' thó:kyę só:wa:s?*
 you ? your pet that dog
 'Is that your dog?'
 A. *Ehé', t:' ake:tshé:nę'.*
 yes I my pet
 'Yes; it's mine.'

The same ordering characterizes Ngandi answers. The constituent which answers the question appears first.

(Heath 1978: 250)

SV

- (75) Q. *ŋi-ŋja miri? ŋi-ni-?-yuŋ?*
 MaSg-who Q MaSg-this-O-ABS
 ‘Who is this?’
- A. *Ni-wačinbuy ŋi-na-ri-yuŋ*
 MaSg-Wacinbuy MaSg-that-IMM-ABS
 ‘That is Wacinbuy.’

Coos questions and answers show the same pattern.

(Frachtenberg 1913: 10)

SV

- (76) Q. *E^ɛxtcī́tcū mä?*
 thou what sort person (are)
 ‘Who are you?’
- A. *Niloxqaínis mä il.*
 I medicine person (am) surely
 ‘I am a medicine man.’

This newsworthy-first principle appears to be the same as that first described by Firbas in terms of communicative dynamism ('the degree to which a sentence element contributes to the development of the communication'), but in reverse. Do Cayuga, Ngandi, and Coos exhibit essentially the same type of ordering as a language like Czech, but backwards? If they do, and if it is assumed that a progression from theme to rheme is inherently more natural cognitively, are Cayuga, Ngandi, and Coos somehow less natural or logical?

1.8.2. The Naturalness Issue

Themes, or topics, as noted earlier, have been variously defined as the elements carrying the lowest degree of communicative dynamism or oldest information, as the starting point of an utterance (Mathesius 1939), and as the focus of the speaker's empathy (Kuno 1976). Themes establish an orientation and a perspective, so they typically appear first in a sentence (Halliday 1967). If themes do indeed provide such a point of departure, how can Cayuga, Ngandi, and Coos speakers leave them until the end?

An examination of discourse shows that these speakers do not save orienting material until the end any more than English speakers do. Narra-

tives typically open with an establishment fo the general topic of discussion. This is usually sufficiently significant to fill an entire sentence or intonation unit. (See Chafe 1980.) Other orienting devices, such as time and perhaps location, are set early as well. The following passages open narratives.

Cayuga

- (77) *Ta: ahi:’ ne.’ a:kathro:wí’*
 now I thought this I would tell
 ‘Now I thought I would talk about
shq niyohtqhné:’ ne’ swé;’keh.
 how it used to be the long ago
 how things used to be a long time ago.’

Ngandi (Heath 1978: 229)

- (78) *walkundu-yuŋ naki?*
 Walkundu-ABS there
 ‘There at Walkundu (a place south of the Roper River),
walkundu baru-ga-maka-na,
 Walkundu 3PI/Bu-SUB-call-PRESENT
 they call that place Walkundu,
ni-ruɖu-ɳi ni-yul-yu:::ɳi
 3MaSg-go-PAST CONT MaSg-man-ABS
 a man was going along there.’

Coos (Frachtenberg 1922: 419)

- (79) *Ûx sla ’tcínt̄.*
 they two cousins (were) mutually
 ‘Once upon a time there were two cousins.’

If new themes appear early, what of the most common themes, those already established and present in the mind of the speaker? Speakers typically establish a topic and stay with it for a certain length of time. In the absence of counterindications, hearers normally expect the topic to remain constant. Since it is expected, a continuing topic need not occupy a prominent position in the clause. Reference to it within the pronominal prefixes on the verb confirms its continuation without unduly distracting the hearer. The hearer is not actually waiting in suspense until the verb appears with its pronominal markers, since a topic shift would be signalled early in the clause.

Word order in Cayuga, Ngandi, and Coos, is thus not simply a mirror image of that in a language like Czech. The overall principle is somewhat similar, in that items are arranged according to their newsworthiness, but the

mirror image model is inappropriate in two ways. For one, elements that establish a significant orientation for the first time, whether it be the point of view of the topic, the time, the location, or the reliability of the statement, occur early, just as they do in Czech. For another, items that signal the continuation of such orientation, such as an unchanged topic, time, or location, often do not appear as separate constituents at all, but rather as bound affixes.

1.8.3. The Markedness of Pragmatic Ordering

These are not the only differences between languages like Cayuga, Ngandi, and Coos, and those like Czech. As mentioned above, members of the Prague School and, more recently, Thompson (1978), have noted that languages can vary considerably in the extent to which surface word order is controlled by syntactic or pragmatic considerations. In languages like English, order is determined primarily by the syntactic functions of constituents. In languages like Czech, their pragmatic functions may play a greater role. Cayuga, Ngandi, and Coos, appear closer to Czech in this respect.

They are not the same, however. Recall that when presented with sentences containing alternative word orders, Cayuga speakers will not even choose a preferred order out of context. Marta Roth informs me that Czech speakers, on the other hand, are very conscious of ‘normal’ word order. Alternate orders apparently do occur more frequently in Czech than in English, especially in written language. Yet when presented with these orders out of context, speakers are strongly aware of their marked status.

Asked to translate transitive sentences like ‘Daniel quickly drank the milk’ out of context, this Czech speaker consistently supplied SVO versions like that below.

S	V	O
(80) <i>Daniel rychle vypil mléko.</i>		
Daniel quickly drank milk		
‘Daniel quickly drank the milk.’		

(Vanessa Flashner informs me that among her spoken Polish texts, approximately 87% of the clauses show SVO or VO order.)

Asked for an appropriate full answer to subject questions like ‘Who drank the milk?’, the Czech speaker simply added heavy stress to the subject, rather than altering word order. (As in English, one-word answers like ‘Daniel’ are perfectly appropriate. Transitive sentences with full subject and

object noun phrases are probably no more frequent in natural Czech discourse than in English.) Verb-initial orders were interpreted as questions, and object-initial orders as fragments of relative clauses. When presented with the alternative order SOV, the speaker agreed that this was grammatical, but would require some obvious reason for the added emphasis on the verb and adverb, such as the added clause below.

- | S | O | V | V |
|---|------|---------|--|
| (81) <i>Daniel mléko rychle vypil a odešel.</i> | | | |
| Daniel | milk | quickly | drank |
| | | | and left |
| | | | ‘Daniel quickly drank up the milk and left.’ |

These responses do not contradict the work of the Prague School linguists. Firbas states, for example, ‘Even in Czech, of course, the possibility of freely changing the order of words is limited’ (1964:278 note 17). Pragmatic considerations can apparently enter into surface word ordering in Czech more freely than in English, probably because of the case suffixes on nouns. It is still a very different process from that operating in languages like Cayuga, Ngandi, and Coos, however. Pragmatic reordering in Czech results in relatively marked structures sometimes described as ‘archaic’ or ‘overly literary’, whereas Cayuga speakers seem less inclined to find any order more marked than the others.

Does this mean that languages like Cayuga, Ngandi, and Coos have no mechanisms for highlighting unusual pragmatic situations? Not surprisingly, they all do have constructions exactly for this purpose, and these constructions are used somewhat more frequently than such devices as clefting and pseudo clefting or topicalization in English.

In Ngandi, such constructions involve the prefix *-ga-*, which sometimes functions as a weak subordinator, although it occurs freely on main verbs. Heath (1978:122-3) describes the construction as follows. ‘The usual way to focus a constituent is to put it at the beginning of the clause, followed by a subordinated verb [with] *-ga-*. There appear to be no significant restrictions on the type of constituent which may be focussed in this way, and examples are attested of NP’s in virtually all surface cases (except perhaps the Genitive) and of various kinds of adverbs occurring in focused position. Ngandi focus constructions may be literally translated with English topicalized or cleft sentences, but it should be emphasized that the Ngandi constructions are much more common than these English types.’ He then provides examples of focused constituents of all types. Here are a few.

- (82) *ni-Conklin, n̥aya, ni-jambuļaja, ūnar-ga-rid-i.*
 MaSg-Conklin I MaSg-Wallace IPIEx-SUB-go-PPUN
 'Conklin, I, and Wallace were the ones who went.'
- (83) *jipa? guṇukuvič ūnar-ga-ñhawk-du-y.*
 later tomorrow IPIEx-SUB-speak-AUG-FUT
 'Tomorrow is when we will talk.'

Coos shows similar constructions.

(Frachtenberg 1913:17)

- (84) *Tsäyä́'nautc wíx:i l̥is l̥Elau qaL!axex:i'we.*
 small (pl) in food that is it begins to flop
 the manner of the one back and forth.
 'All kinds of food (fishes) began to flop around.'

Cayuga also makes frequent use of such devices.

- (85) *Ha'te:yq: ki' ase:'shq:’qh,*
 all kinds just new ones
 'All kinds of vegetables,
né:’ *thó:kyq teyéhsnye’.*
 it is that one cares for it
 that is what they're growing.'

Cayuga, Ngandi, and Coos, have devices for accomplishing the same syntactic and pragmatic functions as languages like English and Czech, but these devices are distributed differently over various areas of the grammar. One result of this is a radical difference in the degree of markedness of alternative word orders.

2. Standard Strategies for Detecting Basic Order and Pragmatically Based Languages

As noted earlier, the usual criteria for establishing the basic word order of a language include statistical frequency, descriptive simplicity, and pragmatic neutrality. What do these criteria indicate when there is no arbitrarily defined basic order, that is, when all ordering is the result of pragmatic considerations?

2.1. Statistical Frequency

Does the fact that word order is pragmatically based mean that all possible orders appear with equal frequency? In fact it does not. On the relatively

rare occasions when a single clause contains both a separate subject nominal and an object nominal, the order OVS appears slightly more often than the other logical possibilities. Does this mean that OVS should be considered the basic order after all? Establishing a fundamental order on the basis of a slight statistical advantage in a comparatively rare construction seems unnecessary, unless it can provide some significant descriptive or typological advantage. In fact, the assumption of an arbitrary basis could cut off fruitful exploration prematurely. The inequalities in occurring orders in languages like Cayuga, Ngandi, and Coos, reflect interesting facts about the actual workings of language. The fact that subjects appear near the end of clauses more often than at the beginning in a pragmatically based system indicates that subjects are typically the least newsworthy. This finding is not unrelated to Givón's statistical studies of definiteness. As he notes, 'in human language in context, the subject is overwhelmingly definite' (1979: 51). The fact that separate objects more often appear near the beginning of clauses indicates that objects are more often used to convey newsworthy information. Although Givón found that in general, direct objects are roughly 50% indefinite and 50% definite in English texts, 'the 50% indefinites are the bulk of the indefinite nouns in the text ... The accusative or direct object position is thus the major avenue for introducing new referential arguments into discourse, at least in English.' (1979: 52).

2.2. Descriptive Simplicity

A major justification for assuming the existence of an arbitrary, syntactically determined constituent order in the description of a language would be its power as a descriptive device. For languages with relatively rigid, syntactically defined surface word order, the establishment of this order at the outset has obvious utility. The description of rarer, morphologically and pragmatically marked alternative orders as the result of the movement of constituents out of their normal position is mechanically simple. For languages like Cayuga, Ngandi, and Coos, however, it is not at all clear that arbitrarily selecting one order as basic, then scrambling this order most of the time, is simple, revealing, or realistic. Since alternative orders are unaccompanied by additional morphological material, there is also no formal motivation for one choice over another.

2.3. Pragmatic Neutrality

A third criterion for determining the basic constituent order of a language is the selection of the least pragmatically marked order, that order which presupposes the least. As noted above, it has been suggested that the most pragmatically neutral sentences of all must be discourse-initial, since there is no preceding linguistic context to establish information. Pullum (1977:266) remarks, 'where a discourse environment could not be present, i.e. discourse-initially, ... the basic order would be expected.' In fact, as mentioned above, the beginnings of narratives generally represent a highly marked situation. Topics must be established before anything else can be attended to. Confining a study of word order to initial utterances would limit the investigation to a highly specialized corpus of utterances with a relatively unusual function, that of establishing referents and point of view.

Most discourse does not even open with 'main, declarative, affirmative, active clauses'. Conversations usually begin with questions. In fact, of 30 recorded Cayuga conversations, 21 began with questions. (Greetings were not counted as initial sentences.) Another two opened with commands.

The relatively rare declarative conversation openers provide little indication of basic constituent order, since they consist almost solely of verbs and particles.

- (86) *Akq:ké' sq:té' syéthwáhsqh.*
I saw you last night you were planting
'I saw you planting last night.'
- (87) *Kwé:, t̄etwa'qnáq' aké' eyó:hé'.*
Well, we're playing snowsnake it seems tomorrow
'Well, it seems we're playing snowsnake tomorrow.'
- (88) *A:yé:' s'atrehtahétk'qse:'.*
it seems your car got bad on you
'You seem to be having car trouble.'

Narrative openers present the same problem. The two sentences below open long narratives, the first highly formal, the second more informal.

- (89) *Ęke:ka:tq:' shę nikyaqhwetsahkyó ne:' tshihwa'hé tsha'qhwetsá:tęh.*
I will tell it how so the earth originated
it is when first when the earth began

- (90) *Né:’ ki’ kyę: ihó:kyę ne’ a:sanits’ qta:tó:wa:t*
 it is just this that the you would hunt fish
 ‘This is how you hunt fish.’

All of these opening sentences are characterized by their small number of major constituents. This is due in part to the high productivity of noun incorporation in Cayuga. (See Mithun 1984). Most of the verbs in the examples above contain an incorporated noun stem ('pole', 'car', 'earth', 'fish'). These nouns are incorporated for a reason. Cayuga speakers normally introduce one new concept at a time into discourse, not unlike other speakers. The single verb represents a single, complex but unified concept.

As can be seen in (78) and (79) above, narrative openings in Ngandi and Coos generally illustrate the same characteristic of few major constituents, because their function is to introduce one new idea at a time.

The one-idea-at-a-time tendency is also reflected in the so-called 'afterthought constructions' which appear frequently throughout texts in all of these languages. Often when a full nominal appears, it is not an integral part of the intonation unit containing its predicate. During the description of how to hunt rabbits, for example, the Cayuga speaker said:

- (91) *Onata:te:nq’ s’ekyę:’, ne’ kwa’yq’.*
 they have roads you know the rabbit
 ‘They have roads, you know, rabbits.’

The intonation break between *s’ekyę:’* 'you know' and *ne’ kwa’yq’* 'the rabbit(s)' is more a change in pitch than a pause. Final nominals like the rabbits above are pronounced with significantly lower pitch and often somewhat softer volume than the preceding constituents. Such nominals are not literally 'afterthoughts', in the sense that the speaker simply forgot to mention them earlier. They are provided as insurance that the hearer will be able to keep reference straight. Often they repeat a referent which has not been mentioned for a while, like the rabbits above. In other cases, they are used to clarify the identify of a referent, as below. The verb 'to fish' below does not contain any overt mention of 'fish', so when the speaker said 'that is what we will live on', he felt it necessary to clarify what 'that' referred to.

- (92) *Ęyqkwatahnyq:k. Né:’ ki’ tshq: kwáhs*
 we will put hook in water it is just only all
 ‘We will fish. That is mainly what

eyakyonhéhkohq:k, otsq’iá’ kanyo’shq:’q
 we will live on it fish wild animals
 we will live on, fish, game, too, I guess,
ne’ kye:’q hni’ t̄’ ho’tq_ “ eyakwatshé:i.
 the I guess too what we will find
 whatever we find.'

Such constructions are not exactly equivalent to regular subject or object noun phrases in languages like English, in that they are not as tightly bound to their predicates intonationally. Because of the pronominal prefixes, they are never necessary for grammaticality. Their lower and softer pronunciation mirrors their function as backgrounded appositives.

Ngandi and Coos also exhibit such constructions frequently. Heath (1978: 53) mentions 'the 'afterthought' construction so common to languages in this area, where a core nuclear clause pronounced and then one or more constituents giving more precise specification of arguments in the clause are added after a pause.' During his description of life in the old days, a Ngandi speaker was discussing various tools. He said:

(Heath 1978: 190)

- (93) *a-jeler bara-ma-ŋi, ba-jawu?-jawulpa-du-yuy,*
 A-stone axe 3PI/A-get-PCONT PI-RDP-old man-ERG-ABS
 'The old people used to get stone axes.'

The final noun phrase serves simply to remind us of the continuing topic.

The Coos narrator cited below had just mentioned that all kinds of food began to flop around. Hearing the noise, Crow decided to open his eyes, but someone yelled at him. After a while, Crow was finally permitted to open his eyes.

(Frachtenberg 1913: 18)

- (94) *Tsō k:ilō’wít hE wíx:īlis,*
 now (he) saw it the food
 'He saw the different kinds of food.'

The final noun phrase serves to ensure that we remember what was there to be seen.

Such 'afterthought' constructions also provide a device for keeping heavy information from blocking the flow of the discourse. When a constituent is so heavy that its early appearance would interfere with the presen-

tation of information, it may be represented early in the clause by a deictic particle, then filled in later by the 'afterthought.'

(Frachtenberg 1913: 16)

- (95) *MiL halt! eene xle'ítc eeLäts*
 please now thou with it with thou speak
ten xL!ē'yís.
 this my with language
 'Now try my language.'

The usual devices for discovering basic constituent order thus provide little clear evidence for any underlying order in these languages. The statistically more frequent orders are no more pragmatically neutral than any others. Discourse-initial sentences do not provide good models of neutral order, since their pragmatic function is to establish the initial theme of the discourse, they are usually non-declarative, and they rarely contain enough nominal constituents to show any order at all.

3. Word Order Typology and Pragmatically Based Ordering

A justification for assuming the existence of an arbitrary, syntactically defined constituent order underlying every language would be its utility as a basis from which to predict other structural features. Discovering correlations among different constituent orders has been a major goal of word order typologists since the pioneering work of Greenberg (1966). Greenberg and many others, including Lehmann (1971, 1973, 1974), Venneman (1974, 1975), and Hawkins (1979, 1980, 1983), have uncovered strong patterns among the types of word orders that occur within languages. At the same time, their work has revealed the complexity of ordering relations. Many statements must include provisions like 'with overwhelmingly greater than chance frequency' or 'usually', etc. The formulation of such principles as tendencies rather than absolute universals does not render them invalid, but, rather points up the number of factors involved. Hawkins has carefully excluded from his work those languages in which the determination of underlying order is problematic, so that the strength of his conclusions is not compromised by inaccurate starting points. This exclusion has been of course both appropriate and necessary in initial investigations. It would now seem, however, that an understanding of the applicability of word order universals to languages exhibiting little evidence of basic word order should be a useful part of the refinement of such universals.

Greenberg's first universal involves the relative order of subjects and objects.

1. In declarative sentences with nominal subject and object, the dominant order is almost always one in which the subject precedes the object. (1966: 110)

If the dominant order is assumed to be the most frequent, then Cayuga, Ngandi, and Coos are clearly exceptions to this first principle, since the order OVS shows a small statistical advantage. Greenberg included the word 'almost' for a reason explained in a note:

5. Siuslaw and Coos, which are Penutian languages of Oregon, and Coeur d'Alene, a Salishan language, are exceptions. (1966: 105)

(The sources of Greenberg's Coos information were Frachtenberg 1913 and 1922, those used here.)

Other universals posited by Greenberg involve ordering relations between verbs and their auxiliaries, adpositions and their objects, and between nouns and modifiers such as adjectives, relative clauses, number, and demonstratives. As noted earlier, a salient characteristic of languages like Cayuga, Ngandi, and Coos, is their high polysynthesis. What other languages express in several words, these languages often express in one. This fact has a significant effect on questions of ordering.

In some cases, there is no basic order simply because a concept is expressed in a single word. The relative positions of verbs and auxiliaries in Cayuga and Ngandi are such a case. Like a number of the languages in Greenberg's original survey, these languages have no separate auxiliaries. Tense, aspect, and mode are expressed by combinations of verbal prefixes and suffixes. Coos has several separate particles with temporal meanings such as 'about to', 'shall/will', 'intend', and 'usually/frequently/habitually'. Each of these can either precede or follow the verb (Frachtenberg 1922: 383-4))

In Cayuga, Ngandi and Coos, functions performed by prepositions or postpositions in other languages are accomplished by suffixes on nouns.

Cayuga

- (96) a. *Kanyata:’ké ha’he’.*
 lake-LOCATIVE there he went
 ‘He went to the lake.’

Ngandi (Heath 1978: 189)

- (97) *ba-ga-rudu-ŋi* *gu-dawal-gič-uy*,
 3PI-SUB-go-PCONT GU-country-*ALLATIVE-ABS*
 'They went to (their) country.'

Coos (Frachtenberg 1922: 323)

- (98) *x-kwile' L-eitc* *ŋ-djī*
 from-sweathouse-in I-came
 'I came from the sweat-house.'

Mixing discussions of the relative orders of roots and affixes with those of the orders of words would seriously interfere with an understanding of universals syntactic principles.

Some locations are expressed by separate words in these languages, however. A Cayuga speaker was asked to translate the English sentences given here as glosses. The sentences were thus not spontaneous responses to actual situations, so, although technically grammatical, they may be somewhat unnatural pragmatically. In the first sentence, *ohná'ke*: 'behind' appears to function like a preposition.'

- (99) a. *Ohna'ké: shę kanqhsó:t ha'etakse:*.
 behind where house stands there she ran
 'She ran behind the house.'

A few moments later, however, the sentence below was given. This time, *ohná'ke*: appears to function like a postposition.

- b. *Shę kanqhsó:t ohna'ké: ha'etakse:*.
 where house stands behind there she ran
 'She ran behind the house.'

According to the speaker, both are equally grammatical. In fact, an examination of the use of *ohná'ke*: in spontaneous discourse indicates that it is not an adposition at all, but, rather, a deictic particle, used appositionally in the sentences above. Hawkins (1983:16) has suggested that prepositions and postpositions are better and more general type indicators than constituent orders VSO and SOV. Languages like Cayuga, Ngandi, and Coos, do not provide counterexamples to this hypothesis, but the hypothesis does not provide motivation for choosing an arbitrary constituent order, either.

Other ordering relations first investigated by Greenberg involve nouns and their modifiers, such as adjectives, relative clauses, and genitives. In languages like Cayuga, Ngandi, and Coos, adjectival words tend to be predica-

tions. Heath notes: 'Noun-phrases which have more than one constituent are typically formed by apposition ... By using the term 'apposition' I am trying to indicate that the various constituents are often formally independent of each other; they often each have a complete set of affixes and may be separated from each other by pauses and even by other constituents such as a verb.' (1978: 52) This is of course reflective of the one-idea-at-a-time tendency. It is difficult to find single noun phrases containing both an adjectival constituent and a separate noun in spontaneous discourse. Instead, the modifier is normally a separate predication, as in the Cayuga, Ngandi, and Coos passages below.

Cayuga

- (100) *Ne:*' *ki'* *he'* *hne:*' *wakyes'aké ne'* *a:sató:wa:t.*
 it is just also contr it is easy the you would hunt
 'Also, it's an easy way to hunt, as well.'

Ngandi (Heath 1978: 268)

- (101) *ŋi-wolo* *ŋi-yul-yuŋ,* *ŋi-warjak,*
 MaSg-that MaSg-man-Abs MaSg-bad
 'that man is a bad man.'

Coos (Frachtenberg 1922: 424)

- (102) *L!a' n̄ex yeeneu kwä'sis.*
 new is thy ball
 'Your ball is new.'

Since these are predicate adjectives rather than attributive adjectives, the prediction does not apply.

In Cayuga and Ngandi, adjectival verbs may incorporate the nouns they modify to form a single constituent. The resulting complex verb can then function either as a predication or as a nominal.

Cayuga

- (103) *akya'tawi'thrí:yo:*
it-dress-nice
 'a/the dress is nice or a/the nice dress'

Ngandi (Heath 1978: 262)

- (104) *ŋi-yuŋ buluki? gu-dawal-wirípu-gi* *ŋa-ga-ŋ-i:,*
 I-ABS also Gu-country-other-LOC 1Sg-SUB-sit-PC
 'I was staying in a different country,'

Again, since such expressions consist of single words, the relative orders of their constituent morphemes cannot be compared to the relative orders of nouns and adjectives in languages like English or French.

Because words corresponding to adjectives in languages like English are full predication in Cayuga, Ngandi, and Coos, the distinction between adjectives and relative clauses is not a sharp one. As in the case of adjectives, material translated into English relative clauses may simply be a separate sentence, as in the Coos example below.

Coos (Frachtenberg 1913: 6)

- (105) *Üx kwîna 'éiwat hE hemkwî 'tîs.*
 they two look at it frequently the heavy waves
 'They looked frequently at the waves,
Hats yî'qa xwändj weL!Lä'ni IE xâap.
 just conti- in this goes over the water
 nually manner back and forth
 that rolled back and forth continually.'

Alternatively, material corresponding to English relative clauses and their heads may be incorporated into single words, as in the Cayuga example below.

- (106) *A'awéhthé' ne' aket'ithr̥q:ni'.*
 it got strong the I made tea
 'The tea I made really got strong.'

On the extremely rare occasions when separate constituents appear comparable to adjectives or relative clauses in other languages, the modifiers and heads can appear in either order. (107) was elicited as a translation.

- | | | |
|--------|-----|---|
| Cayuga | Mod | N |
|--------|-----|---|
- (107) *Ké:ké: nikay'ato'té: aketshe:né takú:s oká:nyas.*
 it is such is its my pet cat it is
 white body lousy
 'My white cat has fleas.'

- | | | |
|--|-----|--|
| (108) <i>Thó ti' ni:yóht nq:kyé ne:'</i> | | |
| there so so it is this it is | | |
| 'That's the way it is with this | | |
| N | Mod | |
| <i>akq:kwé kowiýaqtare'.</i> | | |
| she person she is getting a child | | |
| woman who is expecting a child.' | | |

- | | | |
|---|-------------------------|----------------|
| Ngandi (Heath 1978: 230) | Mod | N |
| (109) <i>a-ja-bolk-d-i</i> | <i>a-darpal a-jara</i> | <i>a-ñalk,</i> |
| A-now-appear-AUG-PP | A-big | A-what's it |
| 'A big rain appeared then.' | | A-rain |
| | N Mod | |
| (110) <i>ba-wan?-du-ni</i> | <i>gu-jark gu-wanar</i> | |
| 3PL-look-AUG-PR | GU-water | GU-huge |
| 'They see a huge body of water.' | | |
| Coos (Frachtenberg 1913: 14) | Mod | N |
| (111) <i>Hēkwáin lĒdi xkwí́nautc léúx hä́wis Lítā.</i> | | |
| very good appearance their ready land | | |
| 'The appearance of the world which they had created was very good.' | | |
| Coos N/Mod (Frachtenberg 1913: 13) | N | Mod |
| (112) <i>Tsō̄ áyu úx kwínáéiwat léúx mī́laq sīL’neī.</i> | | |
| now surely they two look at their arrows joined | | |
| them frequently two together | | |
| 'They shook the joined arrows.' | | |

Nominal-genitive order show the same variation. A noun identifying a possessor may appear on either side of the possessed noun. Both of the genitive constructions below were taken from the Cayuga cosmology legend.

Cayuga

Cayuga

- (114) *akoti'skhwáę' nę:kyę k'anów'ake nę:kyę kanyahtékó:wa*
 they set her this on its back this great turtle
 ‘they set her on the back of this great turtle’

Compare the two Coos genitive constructions below.

- (Frachtenberg 1913: 8) Gen N
 (116) ... *âx lemî́yat lE mexấye û kwấxu.*
 they two to stand the eagle his feathers
 up caused it
 'Then they stuck into the ground the feathers of an eagle'

- (Frachtenberg 1913: 15) N Gen
 (117) *Halt! xâ lä û L!ê'yîs hE tsy'na.*
 now he his language the thunder
 'the other man received Thunder's language'

Finally, several constructions do exist in which the order of constituents is constant. Numbers tend to precede the nominals they quantify, but this is of course consistent with the newsworthiness principle.

The relative order of determiners and nominals is generally invariable. Definiteness is not obligatorily marked in Cayuga, and no indefinite article is used. As noted earlier, an optional particle *ne'* may precede definite nominals, including proper and possessed nouns. When it appears, it precedes the nominal it modifies. A closer look at the function of the particle reveals why its order does not change. In Cayuga, morphological verbs, like any clauses, can function as syntactic nominals. They need carry no overt markers of nominalization. The result is that normal discourse can consist largely of verbs. The particle *ne'* is most often used to indicate that what follows is functioning syntactically as a nominal.

- (118) *akaqnihnatô:k ne' nône:' nq:kyę*
 they noticed the you know this
 'they noticed
 ne' *kowiyáqtatre*'.
 the she is getting a baby
 that she was expecting.'

The Coos article *lE/hE* is similar. Frachtenberg notes, 'The article has a general nominalizing function, and when prefixed to adverbs, adjectives, etc., gives them the force of nouns.' (1922: 320)

- Coos (Frachtenberg 1913: 50)
 (119) *n'ne ûtE lE eedôwâyExtâ'is qau'wa*
 I (am) emphatic the you wanted night
 'I am the one (whom) you wanted last night.'

The invariability of the positions of these articles is not arbitrary. Their prim-

ary function as a signal of constituent identity would be lost if they floated. The fact that they precede rather than follow the constituents they modify is also functional. Due to the potential decoding difficulties posed by long series of verbs in normal discourse, speakers need an early cue to the syntactic function of nominalizations.

Except for Greenberg's first syntactic universal, Cayuga, Ngandi, and Coos provide strong evidence neither for nor against the most discussed word order universals. Most of the universals simply do not apply, because they are defined over rigid word orders. Positing a basic, syntactically defined constituent order for such language provides little predictive power. The recognition of pragmatically based languages is crucial to serious work on syntactic topology, however, not only because they represent a significant proportion of the world's languages, but also because of the obvious danger of misclassifying them. As many of the elicited examples cited earlier demonstrate, it is only too easy to force a language into an inappropriate syntactic model on the basis of data elicited or analyzed out of context.

4. The Pragmatically Based Type

Against a backdrop of Indo-European languages, the Cayuga, Ngandi, and Coos strict pragmatic ordering seems unusual. The phenomenon is not at all rare, however. An obvious question is whether purely pragmatically ordered languages share any other characteristics which might combine to define a type.

Their most obvious shared feature is their high polysynthesis. Clauses, or intonation units, typically consist of relatively few major constituents, but these may be morphologically very complex. Verbs contain not only pronominal and adverbial affixes, they can also contain nouns.

In one sense, Cayuga, Ngandi, and Coos, actually have as much arbitrary, rigid ordering as English, if not more, since so much information is packed into the morphological structure of words, a domain where order is the most rigid of all. The ordering of morphemes does differ in a significant way from that of words, however. Speakers normally know where word boundaries fall, whether they are literate in their languages or not. They can easily pronounce sentences one word at a time, but few can pronounce words one morpheme at a time, particularly when the words are morphologically complex. In some cases, where morphemes correspond to syllables, there is little fusion, and the meanings of morphemes are transparent, some speakers may be aware of the identity of some morphemes. Some Lakhota speakers, for

example, can identify a morpheme like the first person agentive pronominal prefix *wa-*, but not the allomorph *bl-* that fuses with y-initial verb stems. They are likely to be aware of the plural suffix *-pi*, because its meaning is relatively concrete, but not the nominalizer of the same form. In the Iroquoian languages, by contrast, morphemes only very rarely correspond to complete syllables, and speakers without rigorous linguistic training generally have no idea whatsoever which segment of sound corresponds to which element of meaning. They could never recognize a verb root in isolation. These facts reflect a fundamental aspect of the word. It comprises a unitary symbol for a unitary concept. It is no accident that the order of morphemes within words is not normally altered for semantic or pragmatic effect, as is the order of words.

Of course, pragmatic ordering is not restricted to highly polysynthetic languages. It can be found both in Indo-European languages like Sanskrit, Latin, and Russian, and Czech, and in non-Indo-European languages like Cayuga, Ngandi, and Coos. All of these languages differ from languages with more rigidly syntactic order, like English, in having special morphology for encoding the syntactic relations of constituents. Sanskrit, Latin, Russian, and Czech use case affixes on nouns, Cayuga uses pronominal affixes on verbs, and Ngandi and Coos use both. The pragmatic ordering is not the same in all cases, however, as discussed earlier. Those using only nominal case markers show syntactically based order with some theme-rheme reordering. Those with more complex verbal morphology, in particular pronominal affixes or clitics, show pragmatically based order in the reverse direction of decreasing newsworthiness.

Does this mean that all languages with pronominal affixes exhibit purely pragmatically determined constituent order? In fact, it does not. Lakhota, for example, has pronominal prefixes marking agent and/or patient. Word order in Lakhota is relatively rigid, however, generally SOV. Parengi (Gorum), a South Munda language of India, also has obligatory pronominal affixes within the verb referring to subjects and objects. In this language, word order is basically verb-final, and the surface order generally appears to progress from theme to rheme (Aze and Aze 1973).

A crucial feature of purely pragmatically ordering languages may be the nature of the relationship between the verb and associated constituents. In highly polysynthetic languages like Cayuga, Ngandi, and Coos, with obligatory pronominal marking of arguments, it is the pronouns which bear the primary case relations of arguments to the predication, not external noun

phrases. The associated noun phrases serve as appositives to the pronominal affixes, rather than directly as subject and direct objects. Although Lakhota verbs carry pronominal prefixes marking first and second person arguments, third persons are not marked on the verb. Speakers will not accept an unmarked verb alone in isolation as a complete statement, as they will in Cayuga, Ngandi, and Coos.

5. Conclusion

An assumption upon which much current descriptive and typological theory is based, namely, that all languages have some basic, syntactically defined, word order, is thus not universally valid. In a number of languages, the order of constituents does not reflect their syntactic functions at all, but rather their pragmatic functions: their relative newsworthiness within the discourse at hand. Constituents may be newsworthy because they introduce pertinent, new information, present new topics, or indicate a contrast.

These pragmatically based languages differ in several important ways from some of the more familiar, syntactically based languages which exhibit ‘pragmatic’ reordering such as right and left dislocation. First, in syntactically based languages, pragmatic reordering is highly marked. Deviation from the basic, syntactically defined word order indicates an unusual situation. In pragmatically based languages, on the other hand, all ordering reflects pragmatic considerations. Unusual situations are marked by other means. Second, in syntactically based languages, pragmatic reordering is usually assumed to result in a theme-rheme order, with elements of lower communicative dynamism at the beginning of clauses, followed by increasingly more important or newsworthy elements. In the pragmatically based languages examined here, the order is nearly the reverse. Constituents appear in descending order of newsworthiness. This does not result in a simple rheme-theme order, however. New themes, newsworthy in their own right, appear early, as do other orienting elements like time and location. Continuing themes, however, as well as continuing times and locations, usually do not appear as separate constituents at all. Pragmatically based languages are typically highly polysynthetic, and such information is simply referenced morphologically within the verb.

All in all, pragmatically based languages do not provide strong evidence against most word order typologies. Most of the implicational universals they suggest are simply inapplicable. It is only too easy, however, to misclassify such languages on the basis of the criteria usually employed to determine

basic order, and such misclassification can seriously obscure important typological generalizations.

NOTE

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ENCODING EVENTS IN KALAM AND ENGLISH: DIFFERENT LOGICS FOR REPORTING EXPERIENCE

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1. Introduction

In Kalam, a language spoken in the Highlands of Papua New Guinea, conventions for talking about events and event sequences differ in striking ways from those followed by English speakers.¹ The flavour of the contrast is suggested by pairs (1)-(3), each of which consists of a fragment of Kalam narrative with an idiomatic translation:²

- (1) *Mnek am mon pk d ap ay-a-k.*
next: go wood hit get come he-placed
morning
'Next morning he gathered firewood.'
- (2) *Mñmon Lae nb am md-y, toytk ow-n-k.*
place Lae place go having- yesterday I-came
stayed-SS
'I came back from Lae yesterday'
- (3) *Tmwk ag-e-k nñ-b-yn.*
thunder it-having- I-perceived
sounded-DS
'I heard thunder'

and by (4)-(5), each of which consists of a fragment of English narrative with its idiomatic Kalam translation:

- (4) 'A stone broke the glass.'
Kab añañ ap yap pk-e-k, pag-p ok.
stone glass come fall it-having- it-has- that
hit-DS broken

- (5) 'The thief was sent to prison.'

*B tap sy d-p, d am, kot g-y,
 man stuff illegal he- get go court having-done-SS
 got
 kalabws ay-p-ay.
 jail they-have-put*

My first concern in this paper is to explore some of the conventions which lead English and Kalam speakers customarily to report similar objective events in different ways. My starting point is that of a translator who wants to have, for both languages, a grammar of usages for encoding events.

What exactly is entailed in such a grammar? One can hardly consider this matter without asking some fundamental questions about the relation between language and the world, and about the tasks of linguistics. For example, when someone reports an observed event, what is being reported? Seemingly without effort, a person will describe an incident that he witnessed, and his audience will hear the report as a description of a piece of reality, an actual happening. But, as Grace (1982: 4) says, "it is quite misleading to speak...as though linguistic utterances were about reality directly." What is reported as an event or happening is the outcome of a complex interaction between many variables: between certain physical phenomena and the speaker's sensory impressions of these phenomena; habits and expectations, and limitations of attention span, biasing the speaker's interpretation of these impressions; limitations of long term memory influencing his recall; and, among other things, structural patterns provided by the language which shape the form of his report and possibly his initial perception and memory of what happened.

The question arises, then, as to what role language plays in the structuring of experience, in people's conceptions of reality. With a few notable exceptions, such as B.L. Whorf, modern linguists — at least in the public arena — have generally steered clear of this question, or placed it outside the main agenda of linguistic research. Such systematic investigations as have been made have been mainly in the domain of lexicon.

In fact, however, much of the discussion of grammatical universals over the past 20 years has rested on assumption about the relation between the grammatical or semantic structure of particular languages, on the one hand, and the world as known by human experience, on the other. Some proponents of universal grammar have adopted a strong version of the hypothesis that languages are essentially culture-free systems for expressing thoughts: deep structure is universal. Thus, a description of an event in language A will

be equivalent, at a deep structure level, to its proper translation in language B. The logic behind such an assumption is, presumably, that Nature has inherent structure, and that Mankind's common biological makeup will cause people in all language communities to perceive that structure and to reflect it — identically, at some level — in their linguistic representations.

In recent years a number of linguists have returned to Whorf's view that the relation between language, thought and reality is a subject too important for linguistics to ignore. Two scholars who have been much concerned with this matter, and whose work I will draw on here, are Wallace Chafe (e.g. 1973, 1974, 1977, 1979, 1980) and George Grace (1981, 1981-83).

In several recent essays, Grace has focused on the functions of human language in relation to the problem of translation. A central function of language, he argues, is the construction of conceptual worlds or conceptual realities. A conceptual world is "a relatively permanent system of resources available for the characterization of situations",³ such as is provided by the syntactic devices and lexicon of a language.

If languages have markedly different resources for the characterization of situations, i.e. if their grammars require them to report the same bits of observed reality in very different ways, it may be that translation between such reports is impossible — at least, accurate translation. Grace concludes that what he calls 'isomorphic' or 'quasi-isomorphic' translation is rarely possible between languages that are genetically unrelated or associated with radically different cultures. In an isomorphic translation the source text and its translation specify the same conceptual situation (a construct to be discussed in some detail below). Usually, the best one can hope to achieve is that kind of matching which Grace refers to as 'paraphrastic' translation — in which the speaker's general communicative intent is more or less accurately captured. What is being translated in such cases is not the linguistic meaning or the conceptual situation specified by the source text; rather, it is the translator's reconstruction of the speaker's pragmatic meaning or communicative purpose. In fact, paraphrastic translation does not *specify* meaning so much as *indicate* it.

Grace (1982:10-11) comments as follows on the prelinguistic activity that goes on in encoding — on the selective perceptual processes that precede 'saying something about the world' in a particular language:

- (1) We cannot deal with the whole of reality at once — some more limited segment of it must be singled out....
- (2) Even in such a narrowly confined segment....one decides what is of interest

and...leaves out of the account much of the actual array of sensory impression.

- (3) One perceives relations in what has been singled out to be reported, i.e. one makes sense of it.

Wallace Chafe and his associates have carried out several experiments dealing with how people interpret and report large chunks of past experience. These experiments suggest to Chafe that "there is little that happens to us that we do not interpret in terms of patterns already existent in our minds (1977: 222). Following Bartlett (1932) he uses the term 'schema' for habitually-used patterns which are imposed when interpreted the external world:

A schema...is a stereotyped pattern by which experience is organized, and more specifically a pattern that dictates the way in which a particular larger chunk will be broken down into smaller chunks. (Chafe 1977: 222).

Chafe and Grace each go on to say something about linguistic schemas which are used to interpret experience, and in particular, about schemas used to encode those chunks of experience which they call events and situations. I will take up their specific proposals in the next section. At this point it is worth mentioning that Grace wishes to locate, in this business of putting a linguistic construction on our experiences and thoughts, a central question of linguistics: what is it to say something? Specifically, what is the nature of the 'things' that are said in in human discourse? And when can two sayable things be considered the same? These are questions which in one way or another deeply concern lawyers, philosophers, psychologists, translators, language learners, sociologists, poets — everyone, in fact, who has an interest in real-world language use. But it is linguists who are most competent to tackle them. Yet we largely bypass these questions and do not understand exactly what they involve.

Grace suggests that saying something analytically — a very different matter from indicating or hinting — is an extraordinary innovation that has perhaps arisen only once in the history of the universe. It is the crux of the difference between human language and the communication systems of other species.⁴

In the course of outlining what he thinks is entailed in an act of saying something, Grace adumbrates a theory about the relation between bits of external reality, on the one hand, and linguistic constructions of reality, on the other. Linguistic constructions themselves entail a further relation between conceptual schemas and syntactic schemas. A particular formulation of this theory is of special interest to us here.

2. The hypothesis of a natural relation between clause, conceptual event and objective event

Let us propose, for the sake of argument, that there is in all languages a natural relationship between, ‘conceptual’ events as expressed by clauses, and ‘natural’ or ‘actual’ events. To make this hypothesis we must first suppose that there are in nature certain phenomena that human beings are biologically constructed to (learn to) perceive as single, bounded events. Such events, then, are a natural class, exhibiting objective characteristics that human brains are adapted to notice. We must suppose, further, that there is a linguistic schema specifically designed to encode our conceptions of the structure of single, bounded events, namely, the clause.

A strong and a weak version of this hypothesis can be distinguished. The strong version will maintain that clause structure is similar in all languages, and that the same (or nearly the same) range of objective phenomena are treated as single conceptual events, encoded by single clauses, in all languages. A weak version will maintain only that there is some degree of agreement across languages in these matters. The qualifications may be of various kinds, e.g. that only a small core of conceptual events is universal, and that other conceptual events are particular to individual languages; that only some characteristics of typical, objective events are universally picked out for encoding in clause structure, while others are given variable treatment, being mentioned in some languages and not mentioned in others, or being spread across more than one clause in some languages; or that the basic constituents of clause structure vary somewhat between languages.

I am not sure that anyone has explicitly proposed any version of this general hypothesis before.⁵ I believe, however, that certain components of the hypothesis have been spelt out before, and that something like the strong version of the hypothesis can be detected as an assumption in many writings about languages.

In outlining the syntactic mechanisms needed in order for a speaker to say something about the world, Grace (1983b: 7-8) says:

The syntactic function which more than any other seems to hold the key to human language is that which permits the specification of what I call the “conceptual situation”....

The conceptual situation is a model of a clause-sized chunk of reality or imagined reality. The syntactic mechanisms involved are primarily those which mark the case relations of the verb.

Discussing the ‘propositionalizing’ stage in the recall and verbalizing of

experience, Chafe (1977: 222) makes a similar connection between the elements of situations and their expression in clause structure:

"...in propositionalizing a chunk [of experience or thought] is replaced by a different kind of entity: a structure consisting of an event (or situation) plus, as separate element elements, the objects the speaker has chosen to verbalize as participants in the event... [E]ach of the objects plays its own specific role in the event or situation. The major contribution of...case grammar has been to recognize the existence and importance of these roles. Thus, in 'Then I ate a sandwich' there has been not only a factoring out from the holistic event of the ideas of me and the sandwich but also a decision to treat me as the 'agent' of the event and the sandwich as 'patient'.

As far as I can tell, Grace's 'conceptual situation' closely matches Chafe's 'proposition'. Both seem to entail a commitment to report a chunk of thought by a clause, a factoring out of objects or participants in the situation from the action or state, a classification of the action or state as being of a certain type, having a particular set of case relations, and an assignment of case roles to the objects or participants. But there is no necessary commitment to particular words.⁶

According to Chafe, the final stage of encoding a particular thought is reached, when each participant, etc. in the situation is categorized — given a name or characterization in words. Grace remarks that in addition to naming the action or process and indicating its relevance by naming, e.g. time and place, or participants, a speaker who wishes to 'say something' needs also to specify the modality or condition or instantiation; that is, he must indicate whether the particular proposition is being presented as, an assertion, a question, a hypothetical situation, etc.

Both writers seem to use 'event' in two senses. In one sense an event is a component of a conceptual situation, specifically that component which is named by the verb. In its second sense, an event is a whole conceptual situation, one involving an action or process rather than a state.

If I understand Chafe correctly, he suggests that events in the second sense are a natural class, in as much as prototypical events have various objective characteristics that distinguish them from prototypical objects and states. The difference between (the idea of) an event and (the idea of) an object can be specified in terms of space, time and particularity. Unlike objects and states, typical events occupy "a single, unique, limited segment of time", and indeed, occupy a segment of time that is no greater than an observer's span of focused consciousness — a few seconds. Such is not true of all events, but it is true of those events that are typically encoded as a single conceptual situ-

ation, expressed by a single clause. In a narrative, clauses tend to express basic units of memory, chunks of experience which the narrator as observer or participant was able to devote his central attention to, store as a raw perception or memory, and recall in essentially the same form on each occasion of recall.

It is an attractive idea, Chafe's idea that a clause typically gives just that amount of information that a narrator can recall and verbalize in a single span of focused attention. When transcribing large amounts of spontaneous speech a decade ago Frances Syder and I were led to a similar conclusion (Pawley and Syder 1975, 1976). However, our work dealt exclusively with English speech. While Chafe's experiments included narrations in a number of different languages, the evidence he cites is also mainly from English, and related languages. It remains to be seen how similar or diverse human languages are in respect of what they include in reports of comparable events. It remains to be seen, too, how consistently different languages package such reports in the form of single clauses.

3. Comparing English and Kalam: Definitions

We turn now to the comparison of English and Kalam. Such a comparison is of interest, I believe, in that it may indicate roughly the outer limits of variation among languages in resources and conventions encoding event-like phenomena. In these respects Kalam may be as different from English as any language on earth.

It is not easy to characterize the differences in a precise, technical way — largely because linguistics lacks a well-developed metalanguage for talking about conventions for encoding events. English speakers who are learning Kalam, or translating Kalam discourse into English, find many Kalam, accounts of happenings extraordinarily explicit and long-winded. When describing an activity Kalam speakers will routinely single out for mention certain aspects or components of the activity that English speakers normally leave out or fuse together with other components. Kalam speakers often found my descriptions of events to be cryptically or ambiguously telegraphic, relying heavily on assumed knowledge and inference.

It will help to have a few more technical terms. While the following labels and definitions are not altogether satisfactory, they provide a rough working platform.

Event classifier, a verb stem denoting a kind of action, conceptually simple

or complex. (Let ‘action’ stand for action or process.)

Conceptual event, the meaning of a clause containing a single event classifier, and denoting a bounded activity (usually placed in a particular time and place, but see *generic event*).

Event sequence, two or more conceptual events, each of which is expressed by a separate clause.

Simple event, a conceptual event which comprises a single action, unpeated. The typical case is an event that begins and ends within the space of a few seconds or less, e.g. *Bill released the rope; John winked; Mary gave me a slap in the face*.

Episode or *Episodic event*, a conceptual event which denotes a sequence of more or less separate acts, e.g. *Mary painted a landscape; Bill built his own house; Lisa bludgeoned her father to death with forty whacks of an axe; then she gave her mother forty-one*.

Complex event, any event that is not a simple event but is not necessarily episodic. Between simple and episodic events falls a large body of conceptual events occupying various points on a scale of complexity, e.g. *Bill hit a ball through the window; Fido is fetching his stick; Mary's words made me angry*.

Specific event, a conceptual event consisting of a specific action, taking place at a specific time and place.

Generic event, a conceptual event in which the action, time and place are not specific, e.g. *Mary used to drink coffee last year; Mary always drinks coffee at breakfast*.

Objective event, the reality which event expressions refer to, or which language users imagine they refer to.

When I use ‘event’ without a modifier, it should be read (unless otherwise obvious) as meaning ‘conceptual event’. I will sometimes speak also of episodic verbs and episodic events, simple event verbs, etc.

As we shall see, one important difference between English and Kalam is that Kalam has few event expressions that are very high on the scale of conceptual complexity. Kalam clauses (if they are clearly single clauses) usually denote simple events. English speakers, on the other hand, freely use single clauses to represent episodes and other complex conceptual events.

These restrictions in Kalam are related to the small number of verbs. Verb stems are a closed set, comprising about 90 members. They are sharply distinguished from all other parts of speech by numerous morphological and syntactic criteria. All verb stems (and no other class) may carry suffixes mark-

ing (1) absolute tense, (2) relative tense — indicating whether a non-final verb refers to an event before, simultaneously or after the time of the final verb in the sentence, (3) aspect, (4) mood, (5) absolute reference of subject by person and number, (6) relative reference of subject — indicating whether the subject of a non-final verb is the same as that of the final verb in the sentence, or different. In examples given here, 'same subject' suffixes are glossed 'SS' and different subject suffixes 'DS'.

Verb stems also occur in their bare form (without suffixes) as non-final members of serial verb constructions, containing up to five or six bare verbs plus one inflected verb. Serial verb constructions are best regarded as strings of separate words. Kalam speakers are able to say each constituent verb stem in isolation and to give it a separate gloss.

A clause consists minimally of an inflected verb. The verb must be inflected for subject reference (either (5) or (6)) and for one more of the other grammatical categories (1) - (4) mentioned above.

Fewer than 30 verbs stems, all having very broad or abstract meanings, account for more than 90 percent of verb stem occurrences in Kalam texts. Each of these has a very general meaning, but translates many English verbs having more specific meaning. Some of these recurrent verbs are:

- d-*, control, constrain, get, hold, touch, handle, grasp, take, catch, finish, stop (an activity), attain (a position, etc.), capture, possess, have, etc.
- g-*, do, act, make, work, occur, happen, function, operate, create, cause.
- md-*, exist, be live, dwell, stay, remain, persist, be alive, be located at.
- ny-*, perceive, sense, be aware; thus: see, hear, feel, smell, know, think, be conscious, awake, intelligent, remember, etc.
- ñ-*, transfer control, change the placement of s.t.; thus; give, transfer, transmit, fit (a lid), close (a door), put on or apply (e.g. makeup), connect, reposition, set (a table), etc.
- ay-*, stabilize, thus: put, place, set, form, take shape, become, turn into (a new state), put in order, be in a stable condition, have a visible condition (scar, boils, warts, baldness, etc.), etc.
- pag-*, be destabilized, be in a disturbed condition; thus: break, shatter, smash, bend, collapse, fold, chip, dent, buckle, ripple (as water surface), etc. (all intransitive).

If a Kalam speaker wishes to be more specific about an action that any

single verb allows, he may use a combination of words or clauses. While such conventional combinations provide specific equivalents of many English verbs, most of the Kalam collocations are not idioms in the strict sense. For example:

<i>wdn ny-</i>	'see'	<i>tmwd ny-</i>	'hear'
eye perceive		ear perceive	
<i>wsn ny-</i>	'dream'	<i>gos ny-</i>	'think'
sleep perceive		mind perceive	
<i>d ny-</i>	'feel'	<i>ñb ny-</i>	'taste'
touch perceive	(by touching)	eat perceive	
<i>am d ap-</i>	'fetch'	<i>ny tep gy ag-</i>	'recall'
go get come		perceive well having say	
		done-SS	

English and Kalam differ in the first place, then, in respect of what ideas can be expressed by a single verb. But there are other important differences in encoding conventions, beyond those that are strictly lexical. When Kalam narrators report an event sequence, the component events that they single out for mention are rarely the same as those that an English speaking narrator would single out. The next section will illustrate this point.

4. Some Familiar Event Sequences and Episodes

The data which follow concern familiar kinds of event sequences and episodes, activities that are part of everyday life in Kalam or English speaking societies. Accounts of such activities are a good data source for several reasons. Some of the activities will be similar in both societies. Accounts will be frequent. And ways of reporting familiar events are likely to be highly codified. Among such reports we may hope to discover conventional patterns or schemas for encoding complex experiences.⁸

5. Hunting Game and Related Activities

- (6) '...When that land came into existence,¹ [people hunted game mammals (and cooked and ate them)]....'

mneb ak lgl mdek /kmn ak pak dad
 land that having come about it-existed-DS game that kill carry
apl, ty ty gl, adl ñbek]...
 having-come what what having- having- he-ate
 done cooked

Extract (6) and the five Kalam text fragments that follow in 4.1. are taken from the first chapter of *Animals Our Ancestors Hunted*, a book in preparation by Ian Saem Majnep, a native speaker of Kalam, and Ralph Bulmer, a social anthropologist. In his introduction, Saem Majnep describes the beliefs and practices of his people concerning the hunting of *kmn* or game mammals.

In extract (6) five parts of the hunting sequence are mentioned by the Kalam narrator: *pak* ‘kill’ (lit. ‘strike’, referring to the manner of killing), *dad* ‘carry’, *apl* ‘having come (= *ap-* ‘come’ plus *-I* ‘prior action by same subject as final verb’) — this refers to the bringing of the game back to the living site (camp, or house) of the hunter, *adl* ‘having baked’, and *ñbek* ‘he ate’. The intervening *ty ty gl* ‘having done how many’ refers to the performing of various rituals and magic before cooking an animal.

Hunting game is an important, traditional activity both among the Kalam and among rural English-speaking communities. Like many other activities with utilitarian origins, it has been turned by the men who practise it into a prestigious, rule- and ritual-governed enterprise. Any hunt is a complex sequence of actions, generally beginning with a search for game, or the flushing of a targeted animal from its lair, or the capture of game in traps or snares, followed by the killing of the animal (in the European tradition usually by shooting, but among the Kalam usually by a blow after hand-capture), bringing the carcass home, skinning or singeing it, cleaning it, and disposing of the meat, offal and skin. The skin may be cured, the offal given to the dogs and the meat eaten or given away, but practices vary according to the nature of the game as well as between cultures. Among the Kalam, game is sometimes smoked for future use but most often is baked and eaten soon after the animal is killed. In the latter circumstances cooking and eating game are viewed as actions bound closely to the rest of the hunting sequence. In the English tradition, cooking and eating the catch is not so closely integrated into the hunting sequence — some game animals, e.g. foxes, are not eaten at all, and some are hung, or smoked or cooked and salted, to be eaten at a later date.

English has an episodic verb *hunt*, and also compound verbs like *go hunting*, *go N hunting*, etc, (where *N* stands for the kind of animal hunted) which embraces all those activities considered to be part of the hunting sequence. In communities where game are shot, the preferred episodic verb may be *shoot*. The point is that *one part of the hunting sequence is taken as standing for the whole*. It is not necessary for a narrator talking about a particular hunting episode, or various hunting episodes, to specify the constituent events —

unless he wishes to highlight these events: He may simply say 'We hunted every weekend'; or 'Bill went pig-hunting yesterday and got two'.

Kalam usage is different. Saem's references to hunting always specify a sequence of acts, never fewer than three, usually five or six, sometimes more. There is one standard sequence for frequently-caught arboreal animals, another for burrowing animals (bandicoots), another for birds, and so on. The narratives quoted here use variants of a sequence which refers to the hunting of *kmn* 'game mammals' generally. Most *kmn* are arboreal marsupials but some, such as the wallaby and bandicoot, are ground dwellers. Often the verbs representing each act in a sequence are adjacent, either forming a serial verb construction — a kind of extended single clause — or a sequence of clause comprised entirely of verbs. Sometimes the verbs fall into two (occasionally three) discontinuous sub-sequences.

In (6) the killing and transporting of the game fall into a separate subsequence from the cooking and eating of it, although both subsequences belong to a single multi-clause construction. To an English-speaking translator, mention of bringing, cooking and eating the game seems unnecessary in this context.

- (7) '...[certain ancestors] living there¹ [used to cook (and eat) in places around there the game they killed].'

.../*basd yes ogok*/ *mdl kty* ¹/*am kmn pak dad apl*,
 ancestor certain having- they go game kill carry having-
 distant stayed-SS come-SS
nb okok ad ñbelgpal].
 there around bake they-used-to-eat.

The larger discourse context indicates that here the narrator is focusing on the fact that people cooked and ate game mammals in cordyline enclosures (which individuals had planted for their own use) throughout the forest. An English narrator recounting the same circumstances might be content to say 'the ancestors used to cook their game in these various cordyline enclosures around there (the forest)'. Saem describes the circumstances as a sequence of five or six events:

GO / KILL GAME / CARRY AND COME / BAKE / EAT (GAME)

The initial verb in this description, *am* 'go', refers to the fact that hunters went out from their homes to hunt in the forest. The rest of the sequence corresponds in essential structure and detail to (6), with *kmn pak dad apl* forming one clause, and *nb okok ad ñbelgpal* a separate clause.

- (8) ...And if you should wonder about the cordyline plants you see when you go in the forest, what these will show you is the locations where the earliest people had their house sites, where ¹[they cooked and ate the animals they hunted].

...sblam nb ogok mey am nyl mey ag ny gabm,
cordyline like certain there go having- so speak perceive you-do
ones (=ask)

that seen-SS

byn-b ak ned mdl, sblam mey ognl,
woman-man that first having- cordyline those hereabouts
lived-
SS

¹*[kmn pak dad apl ad ñbl], katp sej those*
game kill carry having- bake having- house old-site those
come eaten-
SS

ognl agl mey tap nb ak nbep ned yomnggab.
hereabouts having those thing like- that you first it-will-show
asked that

Extract (8) spells out the focus on the cooking and eating of game in the cordyline enclosures which was indicated less explicitly in (7). Once again the elements *kill game carry* and *come/bake/eat* are specified, in that order, and in this case without any intervening material.

- (9) 'This was the basis on which¹ [our forefathers hunted,... and had their camp-sites in the same cordyline enclosures].'

Mey ¹*[basd skop yes ogok am... tagl, sblam mgan nb ak*
that ancestor distant some go walk- cord- enclosure that
(previous group about yline which-
phrase)

knl, kmn pak d ap ad ñbl apelgpal].

having- game kill get come bake having- they-used-to-come.
slept-SS eaten-
SS

In (9) the hunting sequence is reported in full detail, using nine verbs, grouped into four subsequences. The first is *am*, referring to going forth to hunt in the forest; the second is *tagl* 'having walked about', referring to the hunter's movements while hunting; the third is *knl* 'having slept', referring to

camping in the forest. The fourth and final subsequence contains six verbs in a row — the five we have already encountered in (1-3) above plus *apelgpal* ‘they used to come’; the latter refers to the hunters returning home from the forest.

The single English verb ‘hunted’ is an idiomatic translation of the whole sequence. It is noteworthy that in contrast to their extraordinary explicitness in specifying the component actions in the hunting sequence, Kalam narrators are very sparing in their mention of other elements — places, instruments, objects affected, etc. The audience is left to infer these from his knowledge of customary usages. It is not simply a function of the sequence of verbs being lexicalised, or as denoting a familiar series of events. As we shall see later, Kalam speakers follow the same conventions when talking about unfamiliar events — detailing the component actions (according to certain conventions) while omitting reference to many of the other elements that an English speaker feels it necessary to mention.

- (10) ‘The cordylines are of two kinds...both originally planted at Waym and Mobn, the first places where, ¹[after hunting game mammals] they made ovens with heated stones and ate the game]. ‘Sskanay’ is the cross-cousin (close relative) of the real game mammal cordyline, the one used in ovens when game mammals ²[after being killed and brought home] are cooked (and eaten).’

Sblam nb ak almjyal,...Waym yp Mobn yp ned mdl
 cordy like- that two Waym and Mobn and first having-
 line that lived
'[kmn pak dad apl, kab g ñbl], sblam tk
 game kill carry having stone having- cordyline cut
 eaten-SS
 come do
ym getek nb ogok mey: nmwd ney sskanay
 plant they-did the- some those cross- it sskanay
 -DS which cousin
apal, nmwd ney, mey kmn sblam yb ak, kmn sblam
 they- cross- it that game real that game cordy-
 say cousin cordyline line
yb ak mey,²[kmn ak pak dad apl ad ñbal] ak...
 true that game kill carry having bake they-ate that
 there that come-SS

(10) contains two references to hunting and cooking game. In the first, the narrator seems to be principally concerned with the hunters' use of heated stone to cook their catch. Nevertheless, convention requires that he specify the main parts of the whole hunting sequence: *kill/carry and come/cook/eat*. In the second, the focus is on the use of one of the cordyline kinds in cooking game. But again, the narrator is constrained by custom to mention the events that came before and after the cooking component in the hunting sequence, and to mention all components in their temporal order of occurrence.

One final extract, to convince the reader that we are dealing here with a highly conventionalised pattern of usage, a way of chunking and talking about perceived reality that is standard procedure:

- (11) 'And today, when some of us come across the ancient cordyline groves of our ancestors, [we bring the game mammals we catch to cook and eat there]...'

...¹[cn] mñy,..ognap am nyl apwn, basd skop
 we now some go having- we- ancestor group
 seen- say
 SS
 sblam mgan pet agl, /[kmn pak dad apl
 cordyline always having- game kill carry having-
 thought-
 enclosure SS come-SS
 nb okok ad ñbl, ognap opwn]...
 around bake having- some we-come
 that eaten-SS

Once again the narrator's main concern is with one part of the sequence but he does not extract that part from the whole nor does he give it particular emphasis, syntactically. His main concern is to explain that hunters still use the old cordyline enclosures for cooking game. An English-speaking narrator in a similar situation would either omit reference to the events he wished to background or diminish their syntactic prominence, e.g. by putting them in a relative clause (hunters cook the game they have killed, hunters bring the game they have killed to be cooked, etc.)

Kalam conventions for reporting the hunting sequence can be represented schematically as follows. Constituents or functions in parentheses are optional, or contextually conditioned; the remaining elements are more or less obligatory.

1	2	3	4	5	6
(GO FORTH)	KILL GAME	BRING IT TO CAMP OR HOME	COOK IT	EAT IT	(RETURN HOME)

The question arises as to how typical such conventions are of Kalam usage in general.

6. Gathering Nuts

Before leaving Saem's narrative, we may look at some extracts where he refers to another traditional forest activity, having economic and ritual importance: gathering and eating the nuts of the mountain pandanus (*aljaw*), which grows at high altitudes (above 2000 m.) in the mountain forest.

- (12) '...and ¹[when we gather mountain pandanus nuts we bring these to the ancestral cordyline enclosures]¹ ²[to cook (and eat)].'
...¹[aljaw kab tk dad apl], sblam mgan pet
 mt. nuts cut carry having- cordyline always
 pandanus come-SS enclosure
nb ak ²[ad nbwn sek].
 like- that bake we-eat together
 that
- (13) 'Thus the many hollows in the ground which can be found around the cordyline shrubbery are old oven pits where ¹[pandan fruit was cooked on the heated stones].'
Kaw-twb ogok, kojat mdengab, sblam mgan okok,...
 hollow certain many they- cordyline around
 ones will
 exist enclosure
¹[tap aljaw kab ak tk d apl adelgpal].
 food mt. nuts that get having-
 pandanus cut come- they-used-to-bake
 SS
- (14) ...¹[and when men went...eating mountain pandanus nuts], ²[they used to (cut them and bring them and) cook them in the cordyline enclosures].'
...¹[b ak...am...alnaw tk nb] ²[tagl, aljaw kab tk dad
 men that go mt. cut eat having- pandanus nuts cut carry
 pandanus walked-about

apl sblam mgan nb okok adl gelgpal].
 having- cordyline like-that having- they-used-to-do
 come-SS enclosure around baked

Harvesting mountain pandanus nuts is broadly comparable to harvesting and fruit-picking activities which English speakers refer to by such phrases as *digging potatoes*, *picking apples*, *picking raspberries for jam*, etc. English speakers refer to a single phrase in what is understood to be a standard sequence of actions, and let this single phrase stand for the whole. The other components in the sequence may be mentioned, if the narrator wishes to highlight them ("All day I've been digging potatoes, picking up potatoes, putting potatoes in bags,..."). In Kalam it is customary to mention several components of the pandanus harvesting sequence:

1	2	3	4	5	6
(GO FORTH)	CUT NUTS	BRING THEM	COOK THEM	EAT THEM	(RETURN HOME)
TO CAMP					
OR HOME					

Extract (12) exhibits components 2-5, with 2-3 falling into one clause, and 4-5 into another. (13) shows 2-4, standing in a single serial verb construction. (14) has two references to harvesting pandanus, though these are interdependent. The first consists of components 1-2 and 5, and the second of 1-3, while both share the same coda, 4: *adl gelgpal* 'having baked they used to do' (i.e. they used to bake the nuts in an earth oven and do all those things previously mentioned). Component 4 is placed in a separate clause. Component 6 does not show up in these extracts, but has been observed elsewhere as part of the pandanus harvesting sequence.

7. Other Event Sequences

Looking further afield, we find that Kalam has many other common usages for designating everyday events that are broadly comparable in structure to those described above. Furthermore, the broad pattern is not confined to collocations that are lexicalised or in common use. It is equally characteristic of Kalam descriptions of unfamiliar events or of event sequences having unfamiliar components.

I am speaking here of patterns or schemas for reporting event sequences which have a deliberate action as one of the central components. There are other sorts of event-sequences, e.g. those in which a person experiences a

sensation, or an involuntary bodily condition, which are encoded with different schemas and which will not be described here.

For reporting a deliberate action the event-sequence seems to be roughly as follows.

1	2	3	4
MOVEMENT	ACTION	MOVEMENT	ACTION(S)
TO SCENE		FROM SCENE	AT PRESENT
OFF FIRST		OF 2 TO	OR FINAL
ACTION		PRESENT OR	SCENE
		FINAL SCENE	

Each of these components may be internally complex, and components 2 and 4, in particular, may contain two or more verbs or contain an event-sequence nested within them. In the case of lexicalised or semi-lexicalised encodings, however, the usual realization is a serial verb sequence without nestings. For example, gathering firewood, a daily routine, is usually reported (as in (6) above) with the sequence:

1	2	3	4
<i>am / mon pk</i>		<i>/ d ap / ay-</i>	
go	wood strike	get come	put

where *pk-* ‘strike’ refers to the breaking of wood into convenient lengths (traditionally done with hands and feet or by crashing pieces of wood against something, rather than by chopping with an axe), and where *ay-* ‘put’ refers to the bundle of wood being put away for use after being brought home.

Some lexical items which often occur in action schemas:

1	2	3
<i>am</i> ‘go’	<i>mon pk</i> ‘break	<i>d am</i> ‘take’
<i>ap</i> ‘come’		<i>firewood</i> get go
<i>tag</i> ‘travel, walk about’	<i>kmn pk</i> ‘kill game’	<i>d ap</i> ‘bring’
<i>kby</i> ‘leave’	<i>ñg mal</i> ‘fill with water’	<i>get come</i>
<i>ap yap</i> ‘fall’		<i>dad ap</i> ‘bring’
come descend	<i>md-</i> ‘stay’	carry come
4		
<i>ay</i> ‘place’ (= stack, put away, keep, etc.)		
<i>ñb</i> ‘eat’		

ad ‘bake’
ad nb ‘bake and eat’

The conventions of Kalam preclude the kinds of ambiguity that the short-hand style of English often presents. Thus, an English utterance, *I have come from Lae*, is ambiguous between the readings ‘Lae was my home and now I have come here’, ‘I have returned after a visit to Lae’ and Lae was the last place I stopped at on my journey’. These three situations will normally be distinguished by Kalam narrators, as e.g. in (15), (16) and (17).

- (15) I've just been to Lae/I've just come from Lae.

	1	2	3
<i>M̄mon</i>	<i>Lae</i>	<i>nb am/ mdy</i>	<i>/ opyn</i>
place	Lae	at go having-	I have-come stayed-SS

Here the central event is the speaker's being in Lae, but it is placed in relation to certain other circumstances: (1) Lae is not his reference location. He had to travel to Lae in order to be there. (This perspective is captured in English by using *be + in/at Place*.) (2) He is not in Lae now. The action is seen as completed. This perspective is captured in English by using the perfective *have..en*. Kalam also uses a perfective (the medial verb ending *-y*, after *md-* 'stay') but must also specify where the actor went after he was in Lae: he came to his present location. We can capture this perspective in English by using *come from*, but *I've come from Lae* is indeterminate on the question of whether I was based in Lae or had to travel to Lae to be there. Kalam does not allow such indeterminacy. Thus (15) contrasts with (16):

- (16) I've (just) come from Lae.

1	2	3
0 / <i>Mñmon</i>	<i>Lae nb kby</i> /	<i>opyn</i>
place	Lae at having-	I-have-come
		left

In (16) the speaker is telling us that he has left Lae to come here. There is perhaps no single central event here, but the focus is on the source — the speaker has come *from* Lae. He was in Lae before he came here. The fact that the first position in the schema is empty tells us that the speaker was residing in Lae before leaving it; he did not travel there just beforehand. The selection of the verb *kby* ‘leave’ is consistent with this interpretation — compare 15, where *am mdy opyn* ‘go having-stayed I-have-come’ is the verb sequence — but it is possible to say *am mdy kby opyn* ‘go having-stayed having-left I-have-

come', if the speaker wishes to emphasize that Lae was not his home but he did stay there for some time before leaving it.

If Lae was not his starting point, the speaker must tell us how he came to be in Lae, as in (17).

- (17) 'I have come from Lae, after being in Port Moresby' (or 'I came from Port Moresby via Lae.')

<i>yad balws dy</i>	<i>Mosby nb, am mñmon</i>	<i>Lae pwy</i>	
I	plane having-	Moresby at go place	Lae having-
	taken-SS		landed-
			SS
<i>mdy opyn.</i>			
having	I-have come		
stayed-SS			

(18) shows an episode which English treats as a relation between two constituent events and Kalam as a relation between three events.

- (18) 'I'll do it when I get back.'

1	3	4	
<i>amy apy wog gng gpyn.</i>			
having-	having-	work intending-	
gone	come	doing I-do	

The Kalam speaker of (18) was reassuring me that he would do a certain job at the place where we lived. However, the speaker intended to go away for a while before returning to do the job. In English only the returning needs to be reported; departing is presupposed in the use of a verb such as *get back*, *come back*, *return*. In Kalam the departing as well as the returning must be overtly stated, each event reported by a separate clause.

- (19) 'The garden was where I shot the pig' (or 'The pig was in the garden when I shot it.')

	1	2	
<i>Kaj wog day ap mdek / mey ñagnk.</i>			
pig garden enclos- come it- therefore I-shot			
sure	having-		
	stayed-		
	DS		

In (19) the central event is my shooting the pig. However, a Kalam speaker will not report straight out that he shot a pig in the garden. Pigs do not live in garden-enclosures; they have to go there first. (A report will also

commonly state *how* the pig entered the enclosure, e.g. by breaking through the fence.) And one does not ordinarily shoot another man's pig at the moment of its arrival in a garden. The speaker states that the pig had already been in the garden for some time when he shot it. A fuller report might state additional circumstances, but (19) gives the minimum required by the Kalam discourse conventions.

The speaker of (20) has met a friend who asks what he is carrying:

- (20) 'I have bought a gift from the store for Sawan.'

	1	2	3	4
<i>Stoa</i>	<i>apy / tap skoy tawy / d am/ Sawan-nwp ñng gpyn.</i>			
store	having-	small	having-	hold go
	come-	thing	bought-	
SS	SS			SS

Here the speaker tells us that he had first to move to the scene of buying (selection of *ap* 'come' indicates that the conversation takes place at the scene), and that the object he has bought is to be given to Sawan. In order to give it to Sawan it must first be taken to him. Components 3 and 4 thus form a subsequence, itself consisting of a 1 + 2, within the larger sequence.

- (21) 'We have put the thief in jail.'

	1	2	3
<i>B tap sy dp d am / kot gy / kalabws aypwn.</i>			
man stuff	he-got		
	illegally hold go	court having-	jail we-have-put
			done-SS

'The thief' is expressed here by a relative construction 'man who stole stuff'. Before putting someone in jail it is necessary to take him to court, and in Kalam this was stated literally: the man was first taken into custody, brought to the court and then tried, before he was jailed. The English expressions 'send s.o. to jail', or 'have s.o. put in jail' loosely cover the sequence of events that Kalam makes explicit.

- (22) a. 'I forgot the bow.' b. 'I forgot to bring the bow.'

	2	3
<i>Cm saky gy / ownk.</i>		
bow out-	having-done-	I came
SS		
of-mind		

English allows an alternation between (a) and (b), with (a) having (b) as a possible reading. (cf. also *I came without the bow*, which may imply forgetting to bring it.) In Kalam the nearest equivalent expression breaks the episode into two parts — forgetting about the bow, and then coming — expressed by two clauses.

8. Two Analyses of the English Metonymic Strategy

When referring to institutionalized event sequences, English narrators prefer what might be called a metonymic strategy, letting the name of one part of the sequence stand for the whole.

- (23) *I went to the movies* (I went to the theatre, bought a ticket, went into the theatre, watched the movie, etc.)
- (24) *I went to the supermarket* (and went into it, selected food, carried it to the cashier, paid for it, brought it home)
- (25) *I went to Chicago last week* (and stayed there for a while and came home again)

In (24-25) it is the first event in the sequence, movement to the scene of main action, that stands for the whole. While this is a favourite strategy, English speakers often select other components:

- (26) *I saw a good movie yesterday.*
- (27) *I found some bargains at the supermarket today.*
- (28) *I was in Chicago last week and met a friend of yours.*

My impression is that these alternatives are used when the speaker wishes to focus on a particular component or aspect of the whole, in contrast to a general, unfocused reporting of the whole. Thus, in (27) it is the discovery of the bargains that is noteworthy. In (28) it is the fact that an unexpected meeting took place while I was in Chicago.

In the following, however, it is the final stage of the event sequence that stands for the whole:

- (29) *John loaded the truck with boxes* (John picked up boxes, carried them and put them on the tray of the truck, and kept doing this until the tray was loaded)
- (30) *John took/delivered a load of onions to the supermarket* (The onions were loaded onto John's vehicle, he drove it to the supermarket, where the onions were unloaded and a receipt for delivery was signed by a supermarket official).

Two superficially different analyses of these examples are available. Let us call the first analysis — the one implicit in our remarks above — *backgrounding-by-omission*. This analysis assumes that the speaker mentions a single component in an event-sequence, and omits the rest. The hearer has a strategy available which allows him to work out whether or not the single component stands for a whole series of events. If the activity referred to is part of an institutionalised sequence, and if the other parts of the sequence are not mentioned, the hearer is to infer that the other parts did take place, as a matter of course, but that nothing of note was associated with them. Not any component in the sequence can stand for the whole in this way, however. Certain components or stages in a sequence are customarily used to stand for the whole sequence, while others are used rarely or not at all.

The second analysis might be called *lexical incorporation*. In the case of *load* or *deliver* in (29) and (30), for instance, one can argue that the whole event-sequence is part of the lexical meaning of the verb in one of its senses, just as the verb incorporates a conceptual event-sequence *go, get and come* or *go and bring*. In similar vein, one might suggest that one of the senses of *go* is ‘go and carry out all the activities customarily associated with the following noun’, this sense being associated with constructions of the form *go to PLACE* or a *go N-ing*.

I do not think it matters very much whether one opts for the lexical incorporation analysis or the backgrounding-by-omission analysis. The facts are that when no other activities are mentioned by a narrator, the hearer understands the single verb plus its arguments to stand for the whole customary sequence. With institutionalised activities, the lexical incorporation and backgrounding-by-omission analyses are probably notational variants.

9. Conclusion

We may conclude from the foregoing that there is no universal set of episodic conceptual events. Indeed, it seems that languages may vary enormously in the kinds of resources they have for the characterization of episodes and other complex events.

10. Clause and Case Relations as Putative Universals

It is an old idea that there is a natural, and perhaps universal connection between the idea of a situation and its expression by a clause. Modern formulations of case grammar (e.g. Fillmore 1968, Starosta 1973, 1978), have

refined this idea and made it the basis of a model of generative syntax. Even though languages vary a great deal in the precise syntactic means (verb, case forms, etc.) which express the elements of conceptual situations (action, case roles, etc.), there is an impressive amount of agreement between languages as to which elements are distinguished.

If I understand case grammarians correctly, the agreements go beyond this. Languages also agree in that they typically encode the action or process by a verb — a universally distinctive syntactic category — and certain other elements by noun phrases; furthermore, the noun phrases are linked to the verb by virtue of standing in the same clause (another universal syntactic category) with it, as surface subject, direct object, etc.

Case grammarians have not, however, assumed that all languages agree as to what counts as a conceptual situation. Presumably, the case model allows for some variation between languages in respect of what actual situations are characteristically conceived of as a single conceptual situation, to be mapped onto clause structure. But for the model to have general application, there must be a large core of agreements between languages: a large set of prototypical, universal conceptual situations.

The strongest version of the general theory outlined in section 2 is that isomorphic translation, or at least clause-by-clause translation of event descriptions is always possible between languages. This is, essentially, the hypothesis that there is a universal deep or semantic structure. In the domain of events, for example, any conceptual event in English is translatable into a conceptual event (has a one clause translation exhibiting the same basic packaging of action and case relations) in Kalam or any other language.

We saw in section 4 that the hypothesis does not hold for episodic events. The possibility remains that a weaker hypothesis is true, in which a certain set of simpler conceptual events is universal. The question is, which events? We might say that is as it may turn out — the definition of a simple conceptual event will be known when it is discovered which conceptual events (if any) are universal (have isomorphic encodings).

11. A Core of Conceptual Events Common to English and Kalam

English and Kalam speakers do share a core of conceptual events, namely, those that are expressible in each language by a single clause. Some examples:

- (31) His house collapsed.
Kotp-nwk pagp.
 house-his it-destabilized
- (32) The man took hold of an axe.
B tw dp.
 man axe he-took
- (33) The man cut wood.
B mon tbp.
 man wood he-cut
- (34) The wood split.
mon lakp.
 wood it-split
- (35) I am going home.
kotp amjpyn.
 house I-am-going
- (36) I feel hungry.
yp ywan gp.
 me hunger it-acts
- (37) I gave you money yesterday.
Yad toytk np mony ñnk
 I yesterday you money I-gave

The following conceptual elements are (sometimes) factored out and expressed as verb and arguments of the same clause in both languages: action/process (as verb), actor/agent, patient (which I take to include place of contact verbs and goal of simple verbs of motion, as well as experiencer and affected object, etc.), time and beneficiary (only of the verb *ñ-* ‘give, etc.’ in Kalam).

12. Differences in the Treatment of Case Relations

The syntactic resources of English allow some quite complex action sequences to be treated as a single conceptual event. For example:

- (38) The man threw a stick over the fence into the garden.

In Kalam such an ‘event’ must be encoded as an episode, a sequence of four conceptual events: (1) the man takes hold of the stick, (2) the stick is

thrown, (3) it flies over the fence, (4) it falls into the garden. These may be compacted into three surface clauses, as in:

- (39) *B mon-day d yokek, waty at amb,*
 man stick hold he-displaced-DS fence above it-went
 wog-mgan yowp.
 garden-inside it-fell

English speakers have the choice of encoding an ‘instrumental’ action by a prepositional phrase or by a full clause. That is to say, the instrumental action may be conceptualized as an element of the same event as the resulting action, as in (40), or as a separate event, as in (41):

- (40) The man split the wood with an axe
 (41) The man used an axe to split the wood

In Kalam, an instrumental action, such as using a tool in order to bring about a resulting action or state, counts as a separate event from the resulting action. Thus both (40) and (41) are translated by:

- (42) *b tw dy, mon tb lak-p*
 man axe having-taken wood cut he-split
 SS

English speakers usually encode the beneficiary of a verb of object creation or control, like *make*, *keep*, *collect*, *send*, and *steal*, as an argument of the verb, the beneficiary relation being marked by the preposition *for*. In Kalam it takes at least two clauses to express such a relation. The first describes the creation or control of the object. The second describes the transfer of the object to a receiver, using the verb *ñ-* ‘give’.

- (43) *kotp gy, np ñng gspyn*
 house having- you intending I-am-doing
 built-SS to-give-SS
 ‘I am building a house for you’

There are three clauses in (43): having built a house, to give you, I am doing. A beneficiary relationship cannot hold directly between *kotp g-* ‘build a house’ and *np* ‘you’, but the purpose of the building clause may be shown by marking it as occurring prior to the giving clause, and marking the giving as an intended or purposive act. The final verb places the speakers’ action in an absolute tense, as against the relative tense of the preceding two verbs.

English treats the direction of movement of an affected object as a case relation of the verb denoting the causal act. The movement may be expressed

by a preposition (such as *through*, *over*, *into*, *around*) or as an adverbial element (*out*, *off*, *over*, etc.). In Kalam the movement of an affected object counts as a separate event (see example (39)), and its clause must be tensed to show that it occurs after the causal action.

English allows the idea of cause to be incorporated in a verb which also expresses an action or process, as e.g. in *A stone broke the glass* or *I smashed the window with a bat*. But in Kalam one cannot say *X broke Y*. One can only say *Y broke*. What led to Y breaking is another matter. In order to attribute a change of state event to an agent or cause, a Kalam speaker must say what happened prior to the change of state. In the case of breaking glass, this account will normally include mention of something coming into contact with the glass, and of a movement or other action that preceded the event of contact. Thus:

- (44) *Kab añañ ap yap pkek, pagak ok.*
 stone glass come fall it-having-struck-DS it-broke that

where *kab* ‘stone’ is the subject of *pkek* ‘it having struck’ (different subject from next verb) and *añañ* ‘glass’ is the subject of *pagak* ‘it broke.’ The idiomatic English translation of (44), “A stone broke the glass,” is framed as a single conceptual event. A more isomorphic translation would be ‘A stone fell and struck the glass and it broke,’ representing a three-stage episode or event-sequence.

Finally, in this brief survey, we may note that whereas English clause structure provides a place for a prepositional phrase expressing the location or source of a conceptual event, Kalam expresses location or source in a separate clause from the related event. Thus:

- (45) Kiyas is working in his house.
Kiyas kotp-nwk mdyg, wog gsap.
 Kiyas house-his staying- work he-is-doing
 SS
- (46) Where have you come from?
Akay mdaban, opan?
 where you-stay you-have-come
 (recent past)

Summarizing, we can say that the differences illustrated by the preceding examples are broadly of three sorts. First, Kalam speakers single out for obligatory mention certain aspects of complex episodes that English speakers

usually do not refer to.

Second, clauses do rather different jobs in the two languages. English clause structure is a syntactic Procrustean Bed into which a wide range of diverse conceptual structures are squeezed. For example, unlike Kalam, English allows several conceptual situations/events to be fused into a single clause. This result is largely achieved by reducing certain situations/events to the status of peripheral or backgrounded elements in the clause, expressed as arguments of the verb. Use of an instrument, intention to transfer possession, direction of movement of an affected object, the location of a participant in an event — such things can be backgrounded in English not just by expressing them as subordinate clauses (*John was working while (he was) in his house*), but by reducing them to the status of noun phrases (*John was working in his house*).

Third, verbs do rather different jobs in the two languages. In the case of English, it is convenient to speak of a division of labor between full verbs, which do lexical-referential work, and grammatical functors (auxiliaries, prepositions, etc.) which do grammatical work. In Kalam verbs do both kinds of work, but always as full verbs. But Kalam is more restrictive than English in the amount of information it allows to be compressed into a verb stem, and in the kinds of case relations which may be associated with a single verb.

13. Conclusions

What general implications can be drawn from the foregoing comparison of English and Kalam?

I think the evidence indicates, that while there is some connection between (a) events in nature, (b) conceptual events and (c) clause structure, it is a loose and indirect connection. Kalam and English do share a body of more or less isomorphic conceptual events and situations, namely those which both languages may express by a single clause. This common core presumably reflects certain characteristics of the external world and human experience that are salient for people everywhere. But it is a fairly small core, in relation to the total set of conceptual situations which English can reduce to a single clause expression.

The comparison suggests, then, that the notions ‘conceptual situation’ and ‘conceptual event’ are very largely language specific. A corollary of this is that the notion of ‘clause’ is also to some extent language specific. English and Kalam each exhibit certain types of construction that we feel comfortable about labelling as clauses. But as with conceptual events, the clause struc-

tures that are more or less isomorphic between Kalam and English are only a modest part of the total range of English clause structures.

I do not think that this observation invalidates the idea that certain elements of conceptual situations, and specifically those singled out in the theory of case grammar, are universal. But it does invalidate the notion that in all languages there are syntactic resources that allow all these elements to be expressed in a single clause, by one verb and its arguments.

Finally, space permits only passing mention of a point that deserves fuller treatment. I have said that 'clause' is not the same thing (exactly) in the grammar of English as it is in the grammar of Kalam. It needs to be said that 'clause' is not a well-defined entity in either language. What we have, in fact, is more like a scale of constructions ranging from phrases to prototypical clauses to sequences of prototypical clauses. In between are various construction types that are something less than or something more than the prototypical clause structure (whether the English type or the Kalam type). In Kalam, for example, a number of verb stems (up to six or seven) may occur in succession, with only the final verb carrying inflections, as e.g.

- (47) *am d owan!* 'Fetch it!'

go get you-come

- (48) *d am yokan!* 'Get rid of it!'

get go you-displace

See also examples (6-14) above. One may well wish to argue that such sequences show an attempt to crunch several underlying clauses into one surface clause. But one cannot, I believe, argue that the crunching process has been completed, i.e. serial verb constructions are not prototypical clauses. They are clause-like, but are something more than a clause.

I alluded above to English constructions which are intermediate between one and two clauses, namely those in which there is a reduced subordinate clause. For a fuller discussion of a scale of clause integration or binding, see Givón's (1980) account of complement typology.

NOTES

1) I am indebted to Ralph Bulmer and Ian Saem Majnep, and to George Grace for allowing me to quote from unpublished material. Ralph Bulmer provided valuable comments on the draft. My research among the Kalam people, a total of 12 months fieldwork carried out between 1963 and 1975, was funded by the Wenner-Gren Foundation, the New Zealand University Grants Research Committee and the University of Papua New Guinea.

The Kalam number some 15,000 and live around the junction of the Bismarck and Schrader Ranges, near Simbai, Madang Province, on the northern fringes of the central Highlands of Papua New Guinea. Most Kalam live at altitudes of between 1500 and 2000 metres, cultivating sweet potatoes as their main subsistence crop, with taro and yams as more prestigious ceremonial crops, eaten, together with pork, during the annual cycle of *smy* or dance festivals which take place from August to October. Hunting in the forests which cover the upper mountain slopes is an important recreation as well as a subsidiary food source.

Kalam is usually regarded as belonging to the East New Guinea Highlands Stock of the Trans New Guinea Phylum (Wurm 1975). Its only close relative is the nearby Kobon (or Kopon) language, and possibly Gaj; it shares less than 20 percent of basic vocabulary cognates (200 word list) with all other East New Guinea Highlands Stock languages.

Kalam is spoken in a number of dialects and it should be noted that two different dialects are represented in examples cited here. Examples (6-14) are in the *ty mnm* dialect spoken by Iam Saem Majnep, of the Gobnem territorial group in the Upper Kaironk Valley. I worked mainly in the *etp mnm* dialect region, among the Kaytog people of the Upper Kaironk. The two dialects show considerable morphophonemic differences.

2) A phonemic orthography for Kalam was devised in the 1960s, and a modified form of this is coming into use by the people as they begin to write in Kalam. The phonemic orthography will be used here. There are four stops /b, d, j, g/, pronounced with homorganic nasal onset; initially and medially the usual allophones are [mb, nd, nj, ng], and finally [mp, nt, nc, nk]. There are four oral obstruents /p, t, c, k/, voiceless in initial position as [Φ, t, c, k], voiced and fricativised in medial position [β, r, j, γ]; final /p/ may be either [b] or [p]; otherwise final allophones are as for initial position. There are four nasals /m, n, ñ, γ/; and a lateral /l/ which is flapped and retroflexed. /w/ and /y/ pronounced as [w] and [y] before a vowel and in initial position, as [u] and [i] between consonants, and as [uw] and [iy] finally. There are three pure vowels /a, e, o/.

All consonants are articulated with a predictable vocalic release when standing alone in a word or when followed by another consonant in a word. The vocalic release is usually a short high central [i], e.g. *nŋbyn* 'I perceived' is [nɪŋjɪmbɪn], *kmn* 'game mammal' is [kɪmɪn], or a mid-central [ə] after a lone consonant, e.g. *b* 'man' is [mbə], *m* 'taro' is [mə]. However, the vocalic colouring of the release show considerable variation according to the adjacent consonants, e.g. *b-yad* 'my (kins)man' is [mbiyant], *m-wog* 'taro garden' is [muwonk] and *m-yoh* 'big taro' is [miyomp].

3) Grace (1983b). See also Grace 1982, 1983a, c.

4) Grace 1981b: 8ff. I assume that Grace is speaking here of natural language use, and might wish to exclude the use of human language by apes.

5) See sec. 5 for some discussion of the connection between this hypothesis and models of case grammar. If I read them right, Chafe and Grace (cited in the text below) would espouse a weak version of the hypothesis.

6) Specification of the condition of instantiation is necessary to specify the modality which the speaker places the conceptual situation he has invoked. Grace also refers to other syntactic devices which have the functions of putting the utterance into an appropriate context in the discourse, or playing a role in expository strategy (e.g. devices for foregrounding elements) (1983a:15).

7) Chafe says (1977:225):

Perhaps most of the events that we deal with are possible to comprehend in their entirety within what I have elsewhere called 'surface memory' (Chafe 1973), where the entire segment of time from beginning to end can be held in consciousness without being relegated to deeper levels of memory.

....My suggestion is that the typical lifetime of an object is of a different order of magnitude from that of the typical segment of time occupied by an event, and that we conceive of the two as being different sorts of things for that reason. An insect whose lifetime is only a fraction of a second may in immediate conceptual terms be more like an event than an object.

8) For convenience, a free English translation of each Kalam extract is given first. A word-by-word gloss appears under the Kalam text. The free translation (which I have adapted from Bulmer's translation of Saem's Kalam text) makes some concessions to the style and structure of the original, but generally conforms to the idiom of English narrative. Material which an idiomatic English translation would omit is sometimes retained here but is enclosed in parentheses. Those portions of the Kalam text and the English translation that refer to what I call the 'hunting sequence' or the 'pandanus-gathering sequence' are square-bracketed and numbered for ease of reference.

9) Starosta (1978:109, fn.) comments:

The 'discovery' ...that the semantic representation and the syntactic deep structure of a sentence are identical, then, turns out to be simply a consequence of the arbitrary decision to have a grammar account for paraphrase; while the 'Universal Base Hypothesis'...just turns out to be a claim that all humans perceive the same range of situations in the same way, a proposition which would be rather difficult to support empirically. There would then be no difference in principle in a 'generative' semantic framework between saying two sentences in Language L were synonymous, and saying that a sentence of L was a translation of another sentence in L, since these 'deep structures' are perceptual representations of situations, and not of the structures of sentences in any particular language.

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WORD ORDER IN INTRANSITIVE CLAUSES IN HIGH AND LOW MALAY OF THE LATE NINETEENTH CENTURY

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1. Introduction

Although it is generally accepted that contemporary Malay is an SVO language (J. Greenberg 1963:107, J.U. Wolff 1982) data from the late nineteenth and early twentieth centuries show Malay to have a high degree of predicate-initial clauses in both transitive and intransitive clauses. This fact is not surprising since many contemporary Austronesian languages such as Malagasy, Tongan and Tagalog are predicate initial, and Old Javanese (Kawi) was predicate initial. The discussion below examines the role of predicate clauses in High and Low Malay at the turn of this century.

Although predicate initial clauses occur in both transitive and intransitive clauses, this paper considers only the intransitive clauses because it is here that the greatest amount of variation occurs. The intransitive clause was also chosen because two argument clauses are rather rare in texts. In the High Malay data examined 10% of the total 311 clauses had two nuclear arguments, and in the Low Malay data the percentage rose to 19% of 397 clauses.

In this paper it is argued that the functions of predicate initial-clauses of intransitive clauses in High and Low Malay texts are quite different and that these differences are related to a modernizing trend in Malay that involves not only (1) an increasing percentage of subject-initial clauses, (2) a decreasing use of the focus particles -lah and -pun, and (3) a decreasing use of clause linking words, such as shahadan, hatta and maka that mark new scenes or paragraphs in the discourse. This modernizing trend has a number of causes including the influence of subject-initial languages such as Dutch, English and modern Javanese, as well as, a change in literary style from poetic form to prose and from an oral to a written medium of dissemination of literary works.

One of the functions of predicate-initial intransitive clauses (VS clauses) of High Malay is to mark transitions from one era or scene to the next. High Malay literature of the late nineteenth century was emerging from an oral tradition in which written literature was performed for an audience. This oral presentation necessitates clear marking of the development of a literary piece since continual audience attention can not be assumed. The VS clauses are also more highly associated with major (not minor) characters and with the use of the predicate marking particle -lah but not with the subject marking particle -pun. All of the above characteristics of the VS clause conspire to give greater prominence to this clause than to the SV clause.

Low Malay literature of the late nineteenth century arose from a modern literary tradition with considerable Dutch influence in the early stages. The Low Malay discourse has fewer predicate initial-clauses, a decreased use of the paragraph marking words (*shahadan* and *maka*), and decreased use of the focus particles. Word order in Low Malay reflects the definiteness of the subject, yielding a dominant SV order with a definite subject followed by verb. There are small number of clauses with the verb followed by an indefinite subject. In Low Malay the new information appears in second position, explaining why clausal subject follow the verbs.

Malay literature from the late nineteenth and early twentieth centuries is generally classified as either High or Low Malay, although High Malay from this period is more accurately labelled early modern Malay because of important differences between it and classical High Malay literature of the sixteenth and seventeenth centuries. The styles of early modern Malay that developed during the nineteenth century have several characteristics that distinguish them from classical Malay. Becker has noted that the most significant developments in the transition from classical to modern Malay are the loss of the -lah/-pun structure and the closer syntactic resemblance of Malay to European languages (Becker 1979:249, note 16). One of the important syntactic changes was the shift from verb-initial to verb-medial clauses.

Before proceeding further with the discussion of differences among varieties of Malay, I pause to offer some classifications of Malay that have been suggested by prominent scholars. Marsden (1812:xv-xvii), a British linguist who worked in West Sumatra, defined four types of Malay: 1) *bahasa dalam* ‘the language of the court’, 2) *bahasa bangsawan* ‘the language of the elite’, 3) *bahasa dagang* ‘the language of trade’ and 4) *bahasa kachukan* ‘the mixed language of the markets’. Windstedt (1927:177) followed this same basic classification adding only the category, literary Malay, which he characterized as

lacking abbreviations and regional expressions, while having complete verb morphology and a complex sentence structure.

The above four way division of Malay was collapsed by most British and Dutch scholars into a High/Low Malay dichotomy where High Malay was the literary language and Low Malay was any of the numerous spoken dialects of Malay. (See Alisjahbana 1957:44-47 for further discussion.) Although this two-fold distinction was generally accepted at the turn of the century, it was also acknowledged by scholars that there were varieties of both High and Low Malay. Within the Low Malay category reference was made to Batavian Malay, Java Malay, officialese or foreigners Malay and Chinese Malay to name a few. Within the High Malay category variation occurred regionally, creating varieties such as Banjarese Malay, and Riau Malay.¹

For the purposes of this paper I use the dichotomy of High and Low Malay but note that High Malay here refers only to early modern Malay of the late nineteenth and early twentieth centuries, not to classical High Malay. The situation is complex not only because both High and Low Malay cover a number of varieties of language, but also because there is a continuum between High and Low Malay on which features of High Malay, such as the focus particles, -lah and -pun, and the clause combining words, such as shahadan and maka, vary in frequency. The ends of the continuum can be identified, but all literature is not easily classified as either High or Low Malay because some authors use 'proper' verb morphology but deviate from High Malay discourse structure with respect to the use of the focus particles and clause linking words, blurring the High/Low Malay distinction.

High Malay of the late nineteenth century flourished in the Malay courts where sultans supported scribes to continue the literary traditions and record the important events of the kingdom. This literary Malay developed distinctive regional styles; it was not a stable or unitary phenomenon but exhibited flexibility and adaptability. The two styles of the late nineteenth century High Malay examined below are texts written in the Riau region and in Malacca.

Low Malay in Indonesia at this time was just emerging as a literary language. Traditionally, that is, from the time of the Sriwijaya Empire (6th-12th century), it was the oral language of inter-ethnic communication used throughout the archipelago for trade and government. Only after the liberalization of press regulations in the Dutch East Indies in 1856, was a local Malay press established by Dutch residents of the Indies. In the last few decades of the nineteenth century the Dutch editors were joined by Eurasians, Chinese and then by indigenous literati in the early part of the twentieth century. The

Low Malay of the press was, in general, similar to the Malay of Batavia because the press developed most rapidly on Java. The audience of this press included Dutch, Eurasians, Chinese and local peoples and for many of these readers this was the only language in which they were literate.

The initial purpose of most Low Malay newpapers was to facilitate trade, but soon the goals expanded to include entertainment and education. Many of the early novels were first serialized in newspapers. To a large extent, it was through this medium that Low Malay developed into a literary language. It is from this literature that I have selected samples of Low Malay narratives.

The syntactic features of High and Low Malay of the late nineteenth century which are contrasted in this paper are: 1) word order in intransitive clauses, 2) the use of the empahtic particles -lah and -pun, and 3) the use of the clause combining words, maka and shahadan. A description of these differences as found in several High and Low Malay texts is presented below.

2. The Data

The data examined come from two High Malay and three Low Malay texts. All texts are written prose, relating a series of events and thus may broadly be labelled narrative although there are significant stylistic differences among the texts.

The first High Malay text is a section of the *Tuhfat al-Nafis* (The Precious Gift) by Raja Ali Haji ibn Ahmad who was born into a ruling family of the Riau region of Indonesia. Raja Ali was well trained in Malay literary arts and completed this work, which had been begun by his father, in the late 1860s. The *Tuhfat* is a history of the Johor-Riau-Lingga area from the late seventeenth to the mid-nineteenth century. Parts of the book contain long sections of genealogies of the royal families, including the major achievements of each reign. The passage chosen is from one of these sections.

The second High Malay text, *Kesah Pelayaran Abdullah* (The Voyage of Abdullah), by Abdullah bin Abdul-Kadir Munshi relates the activities and impressions of the author as he sailed up the east coast of Malaya from Singapore carrying letters for merchants. Although Abdullah was born in Malaya, he was of Arab and Tamil descent and thus learned Tamil and Arabic, as well as, Malay as a child. As an adult, he became proficient in English and Hindustani. He was a translator for many foreigners and became Raffles' secretary. He was strongly influenced by British culture and values and this influence is reflected in the content and style of his writings. It has been claimed that modern Malay literature began with his writings because he was the first major

author to embrace the Western literary tradition (Teeuw 1967:1). Western literature, in which an author expresses his own views, is in contrast with traditional Malay literature, where the cultural values are restated. Another major difference between these two traditions is the means of transmission of the literature; Western literature through reading and Malay literature through listening. Because of Abdullah's proposed significance in the development of modern Malay literary traditions, it is interesting to note to what extent his style varies from other early modern Malay writers.

The three Low Malay texts studied here are short stories or novels. One is an unsigned serialized story in the Chinese newspaper, *Tjahaja Timoer*, published in 1917. The other two pieces are: *Tjerita Njai Isah* (The Story of Mistress Isah) written by F. Wiggers and printed in 1901, and *Boenga Ram-pai: Berbagai-Bagai Tjerita* (Anthology of Various Stories) written by A.F. Von De Wall and printed in 1890.

3. Word Orders in High and Low Malay

Table one summarizes the differences in word order of the intransitive clauses of the two High Malay texts and the three Low Malay texts. In the two High Malay texts there are 311 clauses of which 38% (or 117) are intransitive with an expressed S. In the three Low Malay texts there is a total of 397 clauses of which 35% (or 137) are intransitive with an expressed S. In the High Malay data 58% of the intransitive clauses have VS word order and 42% SV word order, while in the Low Malay data the word order is 33% VS and 67% SV. These data show that Low Malay has moved away from a VS word order towards a more predominantly SV word order.²

Table 1. Word Order in Intransitive Clauses.

	no. clauses	percentages
High Malay		
SV	49	42%
VS	68	58%
total	117	
Low Malay		
SV	92	67%
VS	45	33%
total	137	

In both the High and Low Malay sets of texts there is a range of word order percentages. The High Malay text by Abdullah, a man who knew western European languages, has a higher percentage of SV clauses than the text by Raja Ali, a man educated in Malay literary arts. See table 2. It might be suggested that knowledge of a prestigious SV language promotes a shift to SV use in one's language. Within the Low Malay texts little is known about the background and education of the authors, but one can note a difference between the 1890 work in which 58% of the clauses are SV and in the other two pieces where the percentages of SV clauses are over 70. This difference may indicate a drift over time toward a more dominant SV word order, but other factors, in addition to time, would have to be considered. Other factors influencing this type of change in language might include exposure to a prestige language with a dominant SV word order and a change in genre or medium of dissemination of literature.

Table 2. Word Orders in the Five Malay Texts.

HIGH MALAY

		no. clauses	percentages
Raja Ali	SV	24	39%
1860	VS	37	61%
total		61	
Abdullah	SV	25	45%
1838	VS	31	55%
total		56	

LOW MALAY

Von De Wall	SV	25	58%
1890	VS	18	42%
total		43	
Wiggers	SV	38	78%
1901	VS	11	22%
total		49	
Tjahaja T.	SV	27	71%
1917	VS	11	29%
total		38	

4. Functions of SV and VS Word Orders in High Malay

In this section a passage of 106 clauses of the *Tuhfat* text by Raja Ali is examined in order to see the relationship between the two word orders of

intransitive clauses and the occurrence of emphatic particles and clause linking words. Becker has noted that the loss of the -lah/-pun structure and closer syntactic resemblance to European languages are among the important developments in the transition from classical to modern Malay (Becker 1979:249). These three factors (word order, particles, and clause linking words) are here treated as a complex through which change occurred to transform classical Malay into modern Malay.

The *Tuhfat* text by Raja Ali, rather than the *Kesah* text by Abdullah, was selected because of its higher percentage of VS word order and its higher frequency of emphatic particles and clause linking words. See table 3. The more conservative text, that is the text which shares more features with classical Malay, is used to present a contrast between VS and SV word orders.

Table 3. Use of Emphatic Particles and Clause Linking Words.

		-lah	-pun	maka	shahadan
Kesah	N=	24	8	27	1
total no.	%=	32%	11%	36%	1%
cls. 74					
Tuhfat	N=	23	10	12	11
total n.	%	46%	20%	24%	22%
cls. 49					

(The percentages refer to the number of clauses with a feature compared with the total number of intransitive clauses in the text.)

Table 3 shows the lower percentages of the emphatic particles in Abdullah's *Kesah* text as compared with Raja Ali's *Tuhfat* text. The percentage for the -lah particle drops from 47% to 32%, while the percentage for the -pun particle drops from 20% to 11%. With respect to the clause linking words, shahadan is almost completely absent in Abdullah's text while maka is used more frequently. The discourse functions of maka are reduced, making its use similar to that found in Low Malay. (See the section on Low Malay for an explanation of the discourse function maka.) Although the use of maka increases in the *Kesah* text, the general hypothesis drawn from these data is that VS word order and high frequency use of the particles and clause linking words are correlated and characterize pre-modern Malay. Before discussing in detail a section of the *Tuhfat* text, the particles and clause linking words are defined.

The linking words, maka and shahadan, are often translated equiva-

lently into English as then, consequently or furthermore; but their functions in discourse are distinct. Shahadan is characterized by Winstedt (1927:160) as a punctuation word that is used in written Malay to introduce a new topic or paragraph. Shahadan can begin a story with the meaning, once upon a time, or can begin a paragraph with the meaning, next or then. Winstedt states that shahadan is composed of the Sanskrit word, saha, and the Malay word, dan. Both of these words mean and, making the word shahadan a compound of a loan word plus its translation. Although the words have similar English translations, the functions of shahadan and saha are quite different. In addition to introducing a new topic, shahadan in older literature was used to connect two clauses or two adverbial phrases. For example:

- (1) *Maharaja Ruana karar-lah dengan adilnya
king Ravana establish with justice
shahadan dengan murahan.
and with graciousness*
'King Ravana was established with justice and with graciousness.'
(Winstedt 1927:160)

Saha in Sanskrit means with or and in the sense of accompaniment and neither introduces a new discourse unit nor conjoins two clauses or phrases. For example:

- (2) *Raja putr-ena saha grham gacchami.*
king son-instr with go home
'The king goes home with his son.'

Although shahadan may be derived from the Sanskrit word saha, the discourse functions of the two words are very different. Shahadan is a prominent marker of transitions and begins new units of discourse while saha connects two nouns.

Maka is an indigenous word⁴ that links clauses which are conceptually closely tied to one another. It expresses a range of meanings including temporal, spacial and conceptual sequencing. In contrast to shahadan, maka can not begin a unit of discourse because it is understood as a non-initial step in a sequence.

No extensive study of the functions of the -lah and -pun particles has been made, but Becker has suggested that these emphatic particles mark the event and topic respectively.⁵ The -lah particle is most often suffixed to the verb but other elements of the predicate can receive the -lah suffix. The particle -pun is typically affixed to a noun but can also occur with an adjective, adverb or demonstrative. Hopper has suggested that -lah in early modern

Malay is a focus particle which when attached to a verb is a mechanism for foregrounding that verb, while the particle -pun is a topic marker (Hopper 1979:227ff.). In the next few paragraphs I examine the occurrence of these particles and linking words with SV and VS word orders in a High and a Low Malay text and speculate on the interactions among these features.

5. The *Tuhfat al-Nafis*

In the 106 clause passage selected from the *Tuhfat al-Nafis* by Raja Ali, there are 49 intransitive clauses of which 19 (39%) have SV word order and 30 (61%) have VS word order. All of the 6 presentative verb clauses have VS word order.

Table 4 summarizes that distribution of the particles (-lah and -pun) and the linking words (maka and shahadan) in the two word orders.

Table 4 Distribution of Particles and Clause Linking Words in SV and VS Word Orders.

	-lah	-pun	maka	shahadan
SV	6 (33%)	10 (56%)	5 (28%)	1 (6%)
19 cls				
VS	17 (57%)	0	8 (27%)	10 (33%)

The percentages in parenthesis indicate the percentage of clauses in that particular word order that have the feature given in that column.

Two points illustrated in table 4 are 1) the lack of the particle -pun in the VS clause and 2) the near lack of the linking word, shahadan, in the SV clause. Also, the VS clauses have a markedly higher percentage of -lah than the SV clauses. Thus, -pun is characteristic of SV clauses, and shahadan and the frequent use of -lah are characteristic of VS clauses.

In the *Tuhfat* section examined, VS clauses are typically introduced by shahadan and/or maka and the verb is often suffixed with -lah. See sentence (3).

- (3) *Shahadan apabila mangkat-lah Sultan Abdul Jalil Shah itu*
 then when die Sultan Abdul Jalil Shah that
maka Raja Mansor-lah menggantikan kerajaan-nya.
 then King Mansor replace throne-the
 'Then when Sultan Abdul Jalil Shah died King Mansor replaced
 him on the throne.'

The above shahadan/maka set of clauses should be considered as a unit because in the passage examined all of the 11 shahadan clauses are followed by a maka clause. In 7 of the 11 cases the maka clause immediately follows the shahadan clause, in one the maka is contained in the shahadan clause, and in the other three instances the maka clause is 2 to 4 clauses away but is still within the same idea unit. In 9 of the 11 maka clauses following a shahadan clause the verb is in initial position. In the two clauses where a nuclear argument precedes the verb that argument is suffixed with -lah or -pun, drawing attention to this argument. See sentence 4 below.

- (4) *Shahadan apabila mangkat-lah Sultan Ibrahim itu;*
 then when die Sultan Ibrahim that
maka baginda itu-pun pindah-lah ka Johor.
 then majesty that move to Johor
 'Then when Sultan Ibrahim died; his majesty moved to Johor.'

The same generalization applies to the shahadan clauses as applied to the maka clauses. They both have VS word order or SV word order in which the particle -pun marks the initial subject. See sentence 5. Thus, both clauses in the shahadan/maka sequence are typically verb initial.

- (5) *Shahadan Bendahara Seri Maharaja Tun Pekrama Tun Habib-pun mangkat-lah pula.*
 then prime minister Seri Maharaja Tun Pekrama Tun
 Habib die also
 'Then the prime minister Seri Maharaja Tun Pekrama Tun Habib died also.'

In the *Tuhfat* text the shahadan/maka sequence sets a new scene. The new scenes presented in the passage are the ascent of a new ruler upon the death of his father. In 8 of the 11 instances of the shahadan/maka set, the death of one ruler occurs in the shahadan clause and the ascent of his son in the maka clause. See sentence 2. In two of the remaining 3 sets of clauses the shahadan clause states that the story continues and the maka clause describes a new setting. See sentence 6.

- (6) *Shahadan kata sahibu'l-hika-yat, maka ada-lah*
 then say story-teller then is
putera baginda itu dengan gundeknya ada tiga orang
 son majesty that with mistress is three person
 'And so the story continues, his majesty had three sons by his secondary wives.'

In the final instance of the shahadan/maka set both linking words occur in the same clause and report that the reigning king has been given a new title. The change here is less dramatic and involves only one actor, thus there is only one clause but two sequencing words. See sentence (7).

- (7) *Shahadan pada ketika itu*
 then at then that
maka bergelar-lah ia Sultan Abdul Jalil Shah.
 then entitle he Sultan Abdul Jalil Shah
 'Then at that time he was given the title of Sultan Abdul Jalil Shah.'

The shahadan/maka complex in this genealogy marks the end of one era and the beginning of a new one; in most cases this involves the ascent of a new king but also includes the setting of a new scene or the change in status of a major character. These transitions are marked by verb initial clauses and thus constitute one discourse function of the VS clause.

The S of the VS clause in this text is referential and either definite or indefinite. The S is never a first mention.⁶ Further it is characteristically a major participant in the discourse. A major participant in this passage is conservatively defined as a member of the royal family, that is the king/sultan or one of his successors. All other nouns are considered minor participants even if they appear several times in the discourse. Of the 30 Ss in VS clauses 21 (70%) are major participants. This fact gives prominence to the VS clause.

Finally mention should be made of the particle -lah which is found in 57% of the VS clauses. This particle is found as frequently in the shahadan/maka clauses as in other VS clauses and is found in all lexico-semantic classes of verbs (presentative, stative and active), indicating that it is not specifically associated with the sequencing of events. The -lah particle in the VS clause is associated with the major characters. Of the 17 -lah particles in VS clauses 15 (88%) occur in clauses where the S is a major participant. Of the 21 VS clauses with a major participant in the S position, 15 (71%) have the -lah particle. The -lah particle draws audience attention to the VS clause by marking the relationship between the predicate and the S but does not mark the sequencing of events.

The most characteristic feature of the SV clause is the presence of the particle -pun affixed to S. Before discussing the characteristics of -pun, I will briefly describe the S of the SV clause. It is always referential and in 17 of 19 instances it is definite. Three of the definite Ss are first mentions, indicating that a new participant may enter the discourse in the S position of the SV

clause. First mentions also occur as patients and agents of transitive verbs, as objects of prepositions and as predicate nominals. Ten (53%) of the Ss of SV clauses are major participants (as defined above). This is considerably lower than the 70% found in VS clauses. In summary the SV clause may be regarded as a lighter clause in that it carries less information about the central characters of the text and is thus more peripheral.

The -pun particle which appears in 10 (56%) of the SV clauses is never found the VS clause. It is most frequently affixed to the S of the clause but may also be affixed to the existential, ada. In the three clauses where the -pun is affixed to the verb, ada, the S is a first mention or of low topicality. An example of the ada-pun construction is given in sentence 8.

- (8) *Ada-pun Bendahara-nya Tun Pekrama Habib bergelar*
 is prime minister Tun Pekrama Habib entitle
Bendahara Seri Maharaja
 prime minister Sri Maharaja
 'And so the prime minister Tun Pekrama Habib was given the title
 to Sri Maharaja.'

In the remaining 7 instances, -pun is suffixed to an NP and in 5 of these cases the NP is a major participant. In the two cases where the NP is a minor participant, the noun has just been mentioned in the previous clause and is thus prominent in that section of the passage. The -pun has a switch reference function returning an NP to S position or placing a highly topical NP that has been in non-A or non-S position into S position. The S with the affixed -pun particle is highly topical and therefore has a low referential distance.⁷ The degree of topicality of S in the SV clauses with -pun ranged from 3 to 12 with the average being 3.4. The referential distances for the Ss in sentences 13 and 14 below are 1 and 4 respectively.

- (9) *Shahadan pada satengah chetera,*
 then at some story
 (10) *maka kerajaan Raja Abdullah ini-lah,*
 then rule king Abdullah this
 (11) *Raja Aceh datang,*
 king Aceh come
 (12) *melanggar Johor.*
 attack Johor

- (13) *maka Johor-pun alah-lah,*
then Johor defeated
- (14) *maka baginda itu-pun berundor ka Lingga.*
then majesty that retreat to Lingga
'Then according to some stories, during the reign of King Abdullah, the king of Aceh came and attacked Johor. Johor was defeated and then his majesty (King Abdullah) retreated to Lingga.'

The -pun in sentence 13 marks the S which in the preceding sentence is a patient and the -pun in sentence 14 returns the S of sentence 10 to S position. In these cases, the particle -pun is serving a switch reference function and occurs most frequently with major participants and/or with participants with high topicality (low referential distance).

Another less common function of -pun is to note surprise or a notion of contrary to expectation where there is no switch in subject referent. Sentences 15 and 16 illustrate this function.

- (15) *Pada masa baginda ini-lah datang langgar*
at time majesty this come attack
Peringgi ka Seluyot,
Portuguese to Seluyot
- (16) *maka Perginni-pun alah.*
then Portuguese defeated
'During his majesty's reign the Portuguese came and attacked Seluyot, and then the Portuguese were defeated.'

Although the Portuguese is the subject of both sentences 15 and 16 and therefore does not need to be repeated, it is repeated with the particle -pun in 16, indicating that the statement carries counter to audience expectation.

A few other characteristics of the SV clause should be noted. The maka in the SV clause serves the same sequencing function as it does in the VS clause, but it is never used in conjunction with the shahadan clause to mark major breaks in the discourse. The -lah particle, which draws attention to the verb or an element in the predicate, never occurred alone in an SV clause in the data but always co-occurred with the particle -pun. In this way, the predicate of an SV clause is never singled out as the one significant element of the clause. This fact indicates the less forcefull status of the predicates of SV clauses.

Several factors conspire to place the SV clause in a less prominent position in the Malay discourse of the *Tuhfat al-Nafis*. This is achieved by associating the SV clause with minor characters, with new subjects, and with the use of the emphatic particle -pun.

6. Topicality of SV and VS Clauses

Comparing the SV and VS clauses with respect to the topicality measure of referential distance produces another means of assessing discourse functions within a text. After excluding the 6 presentative clauses of the VS category, all of which have a referential distance of 20, we are left with two groups of VS clauses: those associated with the turning points in the discourse, that is the shahadan/maka sets of clauses, and those clauses following these sets. The clauses of the shahadan/maka sets have long referential distances and thus low topicality. The shahadan clause has low topicality because it returns to the reigning king who was introduced at the last major break. The maka clause introduces the new king, whose name is likely to have been previously mentioned but still has low topicality at this point in the text. The second type of VS clause immediately follows the maka clause and elaborates on the new king, his achievements and his associates. The Ss of these clauses have low referential distances and high topicality because they build on the newly introduced king. The section is ended with another shahadan/maka set, relating the death of the king and the ascent of his son. The rhythm that is developed is one of VS clauses of low topicality at major breaks and VS clauses of high topicality immediately following these breaks. The average referential distance of the 9 VS clauses associated with the shahdan/maka sets is 9.1, while that of the other 15 VS clauses is 1.53. The VS clauses can not be characterized by the degree of topicality of their subjects but rather by their functions. VS clauses are used for presentatives, for clauses at major breaks in the narrative; and for the development of events involving major participants. To group all VS clauses together would mask the wide differences in topicality and the interaction between degree of topicality and the clause linking words. In this case, the interaction is an important structural feature of the discourse.

The S of the SV clause, on the other hand, has a more uniformly low degree of topicality. The first mentioned NPs, of course, are very low in topicality, while the Ss with the -pun affix tend to have high topicality. The distribution of the level of topicality follows no discourse structure in the text. The average referential distance of the Ss of the 18 SV clauses is 9.43, supporting other indications that the SV clause is less topical and less prominent

in the development of the major characters. It is associated with new and/or minor characters which generally have lower levels of topicality.

7. The Functions of SV and VS Word Orders in Low Malay

Low Malay, like High Malay, has SV/VS word order variation, but in contrast to High Malay, the dominant word order in Low Malay is SV (not VS). Low Malay also differs from High Malay in that it shows a very limited use of the emphatic particles -lah and -pun and the clause linking words, shahadan and maka.

A passage from F. Wiggers' novel, *Njai Isah*, is examined in order to discover the different functions of SV and VS word orders and their relations to the emphatic particles and clause linking words. Little is known about Wiggers' early life or education, but we do know that he was a civil servant in the Dutch East Indies and later became an active journalist, writer and translator (from Dutch to Malay) (Pramoedya 1928:17-18). The novel, *Njai Isah*, was written at the turn of this century for the popular entertainment of a multi-ethnic readership. The passage chosen here relates the events in the life of a young Dutch woman in the home of a local Indonesian family after she has left her family home because she has become pregnant.

The *Njai Isah* passage chosen has 141 clauses of which 49 are intransitive with an expressed S. Of these 49 clause, 38 (78%) have SV word order and 11 (22%) have VS word order. The distribution of the emphatic particles, -lah and -pun, and the clause linking words, shahadan and maka, in the two word orders is given in table 5.

Table 5. Distribution of Particles and Clause Linking Words in SV and VS clauses.

	-lah	-pun	maka	shahadan
SV	0	1 (3%)	4 (11%)	0
38 clauses				
VS	3 (27%)	0	1 (9%)	0
11 clauses				

The use of the emphatic particles which in High Malay distinguished SV from VS word orders and the use of the clause linking words that gave hierarchical organization to the High Malay texts are insignificant in the Low Malay data.

In the *Njai Isah* passage selected the SV clause dominates and the choice of word order here appears to be based on the definiteness of the subject. See table 6. Structurally, the clause proceeds from definite S to verb or from verb to indefinite S. In the few instances where this sequencing of information is not followed the statement carries information that is counter to general expectation.

Table 6 Definiteness of S in Low Malay Intransitive Clauses.

	definite S	indefinite S
SV	39	0
VS	4	7
total	43	7

Seven of the 11 VS clauses have indefinite Ss; the three with definite Ss all occur with the verb ber-kata 'say'. This verb is used with VS word order despite its definite S because verb-initial clauses imply that new information follows the verb and in the case of the verb ber-kata the important new information is indeed contained in the clausal complement which follows the VS clause. See sentence 17.

- (17) *maka ber-kata poela njonja Abrams,*
 then say also Mrs. Abrams
Angkau, kasian masih moeda tida taoe apa artinja,
 you pity still young not know what meaning
 'Then Mrs. Abrams also said, 'You poor dear, you are still young
 and do not know the meaning (of this).'

Frequently in written and spoken discourse the subject of (ber-)kata becomes cliticized yielding, kata-nya. This illustrates the strong tendency for the post-verbal position of the S with this verb.

Of the remaining 8 VS clauses, 7 have indefinite Ss. Two of these 7 indefinite Ss are clausal subjects such as, in sentence 18.

- (18) *Tetapi baik nona djangan terlaloe bergerak-gerak.*
 but good miss not too move move
 'But it is good if the young woman is not too active.'

Clausal subjects do not occur in SV word order, again demonstrating the need for the new information of the clausal subject to appear in post-verbal position. An example of the 5 remaining VS clauses is found in sentence 19.

- (19) *Serta timboel-lah djoega pengrasaan.*
 and rise also feeling
 'And a feeling also arose (in her).'

The one other instance of VS word order occurred with a definite subject. In sentence 20 this clause has counter to expected word order and lexically marked surprise.

- (20) *Wah, semangkin bertjahaja moeka non Poppi,*
 Wow the more radiant face ms. Poppi
 'Wow, Ms. Poppi's face is all the more radiant.'

Although there are not enough examples in these data to generalize, it is reasonable to hypothesize that one function of the VS word order with definite Ss is to indicate surprise or counter to expected information.

In the SV clauses of this passage, -lah is never used and -pun is used only once. The -pun is affixed to a continuous NP (an NP with a referential distance of 1). See sentence 21.

- (21) *Dalem itoe ampat lima hari non Poppi soedah bisa*
 in that four five day ms. Poppi already can
sekali bawa adat orang oedik,
 very carry custom people village
dia-poен soedah beladjar-belandjar omong Sunda.
 she already study study speech Sunda

'In those four or five days Ms. Poppi was able to pick up the ways of the villagers, and she even began to study Sundanese.'

The emphatic particle -pun (here spelled poen) is used in the second clause of 21 with a continuous subject which is ordinarily indicated by zero anaphora. This repetition gives the statement an element of surprise. This usage is similar to the second function of -pun in the High Malay texts.

The four instances of maka have the same sequencing function as was found in the High Malay texts. In the Low Malay texts there is no use of the linking word, shahadan, or any other marker of paragraph-sized units. The Low Malay texts thus have a flatter, more linear development to their plots. The lack of paragraph-sized markers does not imply a paucity of types of clause linking words. Indeed, the variety of such words is greater in the Low Malay text than in the High Malay text examined. In the 141 clauses there were 14 different clause linking words with a variety of meanings more extensive than those found in the High Malay texts. Several of the additional link-

ing words are derived from verbs, such as lantas (to penetrate) meaning next, sampai (to arrive) meaning until, and lalu (to pass by) meaning then.

In summary the Low Malay discourse is characterized by SV clauses where the Ss are definite, producing a pattern of information flow of old to new. A typical intransitive clause in Low Malay resembles the one in sentence 22.

- (22) *Maka Njonja Abrams pegi ka roemah makan.*
 then Mrs. Abrams go to house eat
 'Then Mrs. Abrams went to the restaurant.'

The VS clause in Low Malay is used in clauses with indefinite subjects including clausal subjects, with definite subjects in clauses with the verb ber-kata 'to say', and in clauses where an element of surprise is desired. In Low Malay the particles -lah and -pun are rarely used. Finally the Low Malay discourse is flatter because it lacks lexically specialized paragraph markers.

8. Conclusion

The two contemporaneous types of Malay used in literature at the turn of the twentieth century, Low and High Malay, show markedly different word order patterns and different discourse functions of the two word orders. In addition, the two types of Malay differ with respect to the use of the clause linking words, shahadan and maka, and the emphatic particles, -lah and -pun.

The choice between VS and SV in High Malay is based upon several factors all conspiring to draw audience attention to the VS clause. The VS clause appears in the presentative clause, the shahadan/maka clause complex that marks major breaks, and in clauses following these major breaks that relate developments concerning the major participants. The SV clause, in contrast, is used for first mentions, especially for minor characters, and is characterized by the use of the emphatic particle -pun on the S. Through the use of the shahadan/maka complex, High Malay establishes a rhythm wherein the VS clauses are associated with major changes and major developments, while the SV clauses are associated with minor characters and minor events or states.

The use of the linking words, shahadan and maka, which create a hierarchical structure in High Malay texts, I suggest, is a mechanism more appropriate for literature that is intended to be listened to than for literature that is to be read. With oral literature one can not assume continuous audience attention, therefore the language must develop mechanisms for informing the

audience as to the progress of the plot.⁸ One manner of marking progress is by the use of a formulaic set of words or phrases to mark off time or scenes in the story. This appears to be the function of the *shahadan/maka* complex. Windstedt's definition of *shahadan* as a punctuation word, emphasizing its structural importance over its semantic content lends support to such an analysis of the discourse functions of the clause linking words. The goals of literature, the genre, and the traditions out of which a literature develops all contribute to shaping the form of its discourse structure. Each genre and each style of language must therefore be examined individually in order to discover the particularities of its discourse. The assumption that a language will employ similar discourse strategies in diverse genres is untenable.

Low Malay in the late nineteenth century emerged from an oral language that had no literary traditions. The early Low Malay literature was written by Dutch, Eurasians and Chinese and often was translations of Chinese, Dutch or other European works. The over-arching tradition for most Low Malay works was the western European novel or short story. The literature was intended to express the opinions of the author (not to state cultural values as traditional literature did) and was to be read (not listened to). The goals of a literature and the traditions out of which it emerges contribute in shaping the form of its discourse. In the case of Low Malay, the linking words such as *shahadan* and *maka* were no longer needed, and a greater variety of linking words appropriate for written literature developed. The shift from a dominant VS to a dominant SV word order may also be attributed to the change from an oral to a written tradition where a distinction between major and minor characters is not as important as in oral literature. The role of outside languages on the shift from VS to SV must be considered and these outside languages must include not only the western languages, Dutch and English but also Javanese which had shifted to SV word order several centuries before this period.

This study of two closely related styles of Malay at the turn of this century points out the need to study discourse structures of distinct styles and genres separately. The assumption that a language will employ similar patterns of organization even in such fundamental areas as word order can not be assumed. The structure of a language is too closely tied to its social functions and context to allow similarities across genre and style to be taken for granted.

NOTES

- 1) For definitions of a number of varieties of Malay see Rafferty 1984a:251-252.
- 2) The reason I say that Low Malay has moved away from VS word order is because in both High and Low Malay texts the older texts show proportionately greater use of VS word order than the more recent texts. Also, among colloquial Malay speakers today, the uneducated speakers (therefore the ones less affected by Indonesian) use a high percentage of VS word order. Therefore, I conclude that VS is the more conservative word order.
- 3) I am grateful to Frances Wilson and Manindra Verma for explaining the use of saha to me. F. Wilson provided me with the example sentence. Saha may be used with the instrumental case as is shown in the example or with the accusative or genitive cases.
- 4) Maka may be related to the Javanese word, mangka, meaning but, whereas or now.
- 5) Becker 1979:248-250. Topic is here used in the Thompson and Li 1976 sense, not the Givón 1983 sense of topicality.
- 6) Not included in the first mention category are the nouns that are implied by a frame.
- 7) I am using the term referential distance as defined by Givón 1983. The longest referential distance is arbitrarily set at 20.
- 8) See Sweeney 1980 for a discussion of how this phenomenon relates to the structure of classical Malay literature.

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THE FUNCTIONAL DISTRIBUTION OF PREPOSED AND POSTPOSED “IF” AND “WHEN” CLAUSES IN WRITTEN DISCOURSE

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1. Introduction

The study of the different types of adverbial clauses in the past has been done almost exclusively by logicians, who analyzed the relationship between the adverbial clause and the main clause in terms of truth value, material implication, presupposition, etc. This merely semantic analysis did not allow for notions such as organization and content of the discourse, communicative intent or pragmatic motivations of speaker and hearer (Givón 1984:252-4). Since these notions did not become the concern of linguists until recently, we still do not have a clear understanding of the behaviour of the different types of adverbial clauses in discourse.

One of the most recent linguistic analysis of adverbial clauses is Haiman's (1978). This study analyzes cross linguistic data and suggests a relationship between topics and conditionals, arguing that in terms of grammatical marking and in terms of function, conditionals behave like topics of their sentences. But although he is dealing with a notion as topic, which can only be analyzed at the discourse level, Haiman presents sentences in isolation and centers the argumentation on the causal connection between propositions. There is also the problem that he does not differentiate between clauses that are preposed and those that are postposed to the main clause, and as this paper will propose, preposed clauses perform a different job in discourse than do postposed ones.

Thompson's (to appear) paper on the distribution of purpose clauses in English texts is one recent attempt at defining the distribution *in discourse* of subordinate clauses. She analyzes the discourse factors that determine whether a purpose clause will be placed before or after its main clause and

concludes that initial and final clauses are performing different functions in discourse. Initial clauses are functioning to guide the attention of the reader by signaling how he/she is expected to associate the material following the purpose clause with the material preceding it. The final clause does not have the same function but has a very localized and different one: it only serves to state the purpose for which the action named in the main clause is undertaken.

Marchese (this volume) studies the function of conditional clauses at the discourse level too, based on data from procedural discourse from Godie. She determines that conditional clauses have a recapitulative function in that they summarize what has come before, working in this way as 'topics' and sharing characteristics with noun topics.

Chafe (1984) suggests that adverbial clauses vary their functions with respect to two factors. One has to do with their position with respect to the main clause: the other has to do with how tightly the adverbial clause is bound to its main clause.

Another work concerning this type of phenomenon of 'pragmatic positioning' is Fagerber's (1983) study of the use of cleft and pseudocleft sentences in Pulaar. It shows how the notion of discourse connectedness serves to explain the choice of one of these two focus patterns in a given context. She says that an emphasized NP is positioned at the beginning of the sentence when it is 'connected' to something which has preceded it in the discourse, whereas the emphasized element is postposed if it is connected to something which is still to come.

The above mentioned studies offered good insights into the behaviour of different types of adverbial clauses and most of them suggest, to one degree or another, that the positioning of some types of adverbial clauses is dictated by the organization of information in discourse. However, most of these works are based almost exclusively on intuitive observations or present a minimum of empirical evidence but as Givón (this volume) proposes, we need to devise operationalized discourse measurements in order to test the empirical validity of our hypotheses.

2. Hypotheses

The goal of this study is to perform a contextual and quantitative analysis of the distribution of 'if' clauses (IC) and 'when' clauses (WC) in order to determine what are the discourse factors that dictate their positioning vis-a-vis the main clause. I suggest that:

In written discourse, *preposed IC and WC* perform different pragmatic functions than those of *postposed IC and WC*:

- a) *Preposed IC and WC* are thematically associated to the preceding discourse as well as to the main clause, thus have a broader scope. *Postposed IC and WC* are only related to their main clause, thus have a very localized scope.
- b) *Preposed WC* form an integral part of the narrative in that they help to sequence the temporal contour of the main line of the narrative whereas *postposed WC* only function as added comments to the main clause.

3. Method

3.1. Data base

I used a modern murder mystery novel for this analysis of English written narrative: Death in the High C's by Robert Barnard.

3.2. Data collection

For most of the counts performed for this study I considered separately the discourse of the narrative (narrator) from the discourse in quoted speech (participants). I found a total of 109 IC and 95 WC distributed in the following way:

Table I

	IF CLAUSES		WHEN CLAUSES	
	Preposed	Postposed	Preposed	Postposed
Narrator	12	8	42	27
Participants	59	30	17	9
Totals	71	38	59	36

The only clauses considered for this analysis are those that relate to their main clauses as adverbial clauses. Thus I did not consider relative or complement clauses such as in the following examples:

- (1) a. Little Mr. Pettifer, the repetiteur, was seated at the piano and told *when he could start* (p.12)
- b. As usual at moments *when no underlining was needed*, Owen felt he had to make things... (p.13)
- c. ‘Perhaps you should warn her,’ suggested Raymond, his heavy-lidded eyes watching to see *if his humour got through*. (p.25)

Neither did I consider the ‘as if’ or ‘if only’ type clauses, for example:

- (2) a. Gaylene looked at him for some moments, *as if quite unsure of what he was trying to say*. (p.26)
- b. and was beginning to feel in total control of herself, *If only the voice comes good*, she said to herself (p.68).

The reason for this exclusion is that this type of clauses generally does not have a consequent. This is also the case with the ‘meta-comment’ type of clauses, which were also excluded. This refers to those comments that participants of the story add sometimes to what they just said (a lot of them ‘if’ clauses). An example follows:

- (3) ‘Most of the time we have to fight Owen Caulfield to get to do what we want, but that’s by the way. The point is that the three of us — and Ricci, too — are really trying to do justice to the piece, *if that doesn’t sound too pompous*. (p.138)

In order to assess the different functional distribution in discourse of initial and final IC and WC, the following types of measurements were employed:

- a) Referential distance — for subjects only — for preposed and postposed IC and WC. This type of measurement was also performed for subjects of those main clauses which have their adverbial clause preceding the main clause.
- b) Scope in number of clauses to the left, for the four types of adverbial clauses.
- c) Aspect-Modality categorization of verbs used in ‘when’ clauses.
- d) Distribution of commas for all IC and WC.
- e) Use of IC and WC in paragraph breaks.

The results of all these measurements are given in the tables below where I present them in such a way that the results of measurements performed for initial clauses appear side by side to those obtained from final clauses. The motivation for this presentation is to let the reader compare the behaviour of initial clauses with that of final clauses.

3.2.1. Referential distance

I used the method introduced by Givón (1983d) for assessing topic continuity, except that I only did it for subject NPs. I counted the number of clauses (or gaps) *to the left* between the appearance of the subject NP in the four types of clauses examined, and the previous appearance of a reference to that same NP, regardless of what grammatical device marked that previous appearance.

In counting clauses I followed these restrictions:

- a) Non-finite verb clauses and relative clauses were not counted as gaps, although the appearance of the previous reference inside any of these clauses was considered.
- b) As explained above, the speech of the narrator and that of the participants of the story were considered separately. For example, in measuring referential distance for the subject of a clause used by the narrator. I considered as gaps only clauses in pure narrative, and not those in quoted speech, although the appearance of a referent therein *was* counted. And viceversa, if the clause to be considered was used by one of the participants, only clauses in quoted speech were counted as gaps.
- c) Those clauses whose subject NPs do not have a specific previous reference in the preceding discourse, are not considered on the tables that show the results of these measurements. This is the case of names of participants that appear only once in the novel: of indefinite NPs such as 'anyone' or 'people': of first and second person singular pronouns: and of non-referential pronouns such as 'it' or of non-referential NPs such as in the following example:

- (4) When *rationality and skepticism* regained some foothold in his mind, it occurred to him that...(p.186)

I also counted referential distance on those *main clauses that have their adverbial clause preceding them* (this includes IC and WC) so as to be able to compare the referential continuity of both initial and final clauses with respect to the main clause. That is, since the counts on referential distance are

done *to the left*, we can not analyze the thematic connection that exists between preposed clauses and the main clauses when we do referential distance on the former. Thus performing referential distance *on the main clauses* we can have a way of comparing the thematic link that exists between initial and final clauses vis-a-vis the main clause.

3.2.2. Scope

This type of measurement was also performed in order to assess the connection that exists between the adverbial clause and the previous context. I counted the number of clauses to the left of each clause, that were needed in order to *understand the whole clause*. The number of 20+ clauses was assigned arbitrarily if the scope of a specific clause exceeded that number. For this restriction I am also following Givón's (1983d) methodology. I also excluded from this measurement non-finite verb clauses, as I did in counting referential distance. For an illustration of what I mean by 'scope' two examples follow, the first one with a scope of two clause, the second with a scope of eleven:

- (5) a. The early rehearsals were to be in Italian. Mike Turner, the company's director, who was to conduct, was insistent on this. *If they knew the Italian*, this would smooth over the early rehearsals with Giulia Contini... (p.12)
- b. Everyone went back to first positions, and Mike began the scene again. It had been perfectly sensible advice but the patience was exaggerated, and as Barbara stood in the wings she remembered only that 'well, never mind.' and she mulled over to herself the variety of wounding phrases it could have been designed to hide. She was a Lancashire girl, and she hated sarcasm, as she hated condescension, and she stiffened with resentment. *When her moment came* she marched purposefully forward.... (p.162)

Notice that in order to give sense to the underlined IC or WC one needs to look back at a number of clauses. This 'looking back' is similar to what we do in counting referential distance, except that in this case one looks for a previous reference *for an entire clause*.

3.2.3. Aspect-Modality categorization of 'when' clauses

In order to assess the different discourse roles of *initial WC*, as compared

with *final WC*. I categorized them in two groups, in terms of the aspect and modality of their verbs. The two distinctions are: *Perfective aspect/realis modality* — that includes only simple past tense — and *Imperfective aspect/Irrealis modality* — that includes present and future tenses, progressive, habitual and perfect aspects and the conditional. For this categorization I am following Givón's (1984:287-9) suggestions for discourse foreground/background correlations of tense-aspect-modality.

I had two reasons for not considering *tense*. One is that the distinctions of time are different for the narrator and for the participants, that is, the relative time for the participants is that of the story, logically; but that of the narrator is a later one from which he looks back at the story and describes it to the reader. Derived from this fact we get different grammatical tenses describing the same semantic actions. Some examples will clarify this point:

- (6) a. 'Not so much of this Eyetalian,' said Gaylene French, stomping over to the far end of the hall and dumping down on a stray chair the bulging plastic bag that contained here sustenance for the day. '*We're doing the thing in English*, guest star notwithstanding.' (p.11)
- b. If they knew the Italian, this would smooth over the early rehearsals with Giulia Contini *when she arrived*, and in any case a thorough knowledge of the text helped singers to project the words of the translations. *They would change to the English version when la Contini had been to a few rehearsals.* (p.12)

In the first example it is one of the participants who says the performance of the opera will be in English and the verb is in the present-continuous. In the second example it is the narrator who says the same thing and the verbs used in the sentence are in the conditional and past perfect. In both cases it is the same action that has not yet (in the story) taken place (imperfective/irrealis).

The other reason is that one same grammatical tense can describe different aspectual distinctions. The following example includes two sentences in which the narrator uses the past tense in all verbs but the first sentence describes an action that has not yet occurred (imperfective) and the second describes two actions that happened as the story unfolded (perfective):

- (7) If they knew the Italian, this would smooth over the early rehearsals with Giulia Contini *When she arrived* and in any case a thorough knowledge of the text helped singers to project the words of the translation. *They would change to the English version when*

la contini had been to a few rehearsals. So when Simon Mulley, the veteran Rigoletto, began the apparently common place dialogue with Gilda that begins Act III, he said:... (p.12)

3.2.4. Distribution of commas

I counted the number of clauses in which a comma separates the adverbial clause from the main clause, in each category. The motivation was to find out whether preposed and postposed clauses pattern differently in this respect. If preposed clauses show a higher thematic continuity with the preceding discourse than with the main clause, then they are more likely to have a comma. If postposed clauses are thematically connected to the main clause then they are likely to go without a comma.

3.2.5. Distribution of IC and WC in paragraph breaks

I counted the number of clauses, of each category, that appeared in the first sentence of a paragraph: the motivation being that since it is at paragraph breaks where thematic discontinuities are likely to appear then, of all categories, *preposed WC* will be used more frequently in that position than any other clause type.

4. Results of measurements

4.1. Referential distance

The comparison of the results of measurements of referential distance show the following: The majority of subjects of *final clauses* find their previous reference in the clause immediately preceding, that is, the main clause, while *initial clauses* find their previous reference in *one of the various clauses* preceding them. The results are shown in the tables below.

- Table II shows the results of referential distance for *initial and final 'if' clauses used in narrative*. One can see that while 100% of subjects of the final clauses have a value of 1, that is they find their previous referent in the main clause, that is not the case for initial clauses. 60% of initial clauses have a value of 1 and the other 40% have varied values from 2 to 13 clauses.
- Table III shows *initial and final 'if' clauses used by participants*. Here we find that more than 90% of final clauses have a value of 1 while in the case of initial clauses only 41.9% of the clauses have a value of 1: the rest have varied values from 2 to 13 clauses.
- Table IV shows the measurements of referential distance for *initial and final*

'when' clauses used in narrative. Here again the results show roughly the same pattern. Almost 95% of final clauses have a value of 1 whereas in the case of initial clauses we see a much broader distribution. 43.2% have a value of 1 and the other 56.8% have varied values of 2 to 20+ clauses.

- Table V shows *initial and final 'when' clauses used by participants*. We find that 66.6% of final clauses have a value of 1 whereas for initial clauses only 44.5% have that value. The rest of initial clauses vary from 2 to 20+ clauses.

- Table VI and Table VII show the results of referential distance for subjects of those main clauses that have a preposed IC or WC. These measurements were performed, as explained above, in order to assess the thematic link that exists between the main clause and the preposed clause. One should notice that although the percentage of main clauses whose subjects NP's find their previous reference in the preposed adverbial clause appears to be high, there is a large number of subjects that are not considered in those percentages. For example, for IC used in narrative, 5 subjects were not considered; for IC used by participants as many as 36 were not considered, and so on. This is due to the fact that those NP's are of the type that usually do not find a previous reference in the previous discourse (proper names, indefinite NP's, 1st, and 2nd person singular pronouns, etc.). On the other hand, if one looks at the other tables on referential distance one can see that they do not have as many of those type of subjects.

What these last results show is that on the one hand the thematic link of preposed clauses is much broader than of postposed clauses, and on the other that preposed clauses show lower referential continuity vis-a-vis the main clause than do postposed clauses.

Table II
Initial and final 'If' clauses used in narrative
Referential distance for subjects

<i>INITIAL CLAUSES</i>		Distance	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
6	60	1	100	6
1	10	2		
1	10	3		
1	10	4		
/	/	5		
/	/	6		
/	/	7		
/	/	8		
1	10	9-13		
		14-20+		
10	100		100	6
		clauses whose subjects don't have a previous referent (not counted in percentages)		
2				6
12				8

Table III
Initial and final 'If' clauses used by participants
Referential distance for subjects

<i>INITIAL CLAUSES</i>		Distance	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
18	41.9	1	91.3	21
11	25.6	2	8.7	2
5	11.6	3		
2	4.7	4		
/	/	5		
1	2.3	6		
3	7	7		
1	2.3	8		
1	2.3	9-13		
1	2.3	14-20		
43	100		100	23
		clauses whose subjects don't have a previous referent (not counted in percentages)		
16				7
59		total N of clauses		30

Table IV
Initial and final 'when' clauses used in narrative
Referential distance for subjects

<i>INITIAL CLAUSES</i>		Distance	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
16	43.2	1	94.7	18
7	18.9	2	/	/
5	13.6	3	5.3	1
1	2.7	4		
3	8.1	5		
1	2.7	6		
1	2.7	7		
1	2.7	8-10		
1	2.7	11-14		
/	/	15-19		
1	2.7	20+		
37	100		100	19
clauses whose subjects don't have a previous referent (not counted in percentages)				
5				8
42		total N of clauses		27

Table V
Initial and final 'when' clauses used by participants
Referential distance for subjects

<i>INITIAL CLAUSES</i>		Distance	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
4	44.5	1	66.6	4
2	22.2	2	16.7	1
1	11.1	3	16.7	1
/	/	4		
/	/	5		
1	11.1	6		
/	/	7		
/	/	8-10		
/	/	11-14		
/	/	15-19		
1	11.1	20+		
9	100		100	6
clauses whose subjects don't have a previous referent (not counted in percentages)				
8				3
17		total N of clauses		9

Table VI
Referential distance for subjects of main clauses
('IF' CLAUSES)

<i>NARRATIVE</i>		<i>Distance</i>	<i>PARTICIPANTS</i>	
<i>N</i>	% to total N of clauses		% to total N of clauses	<i>N</i>
5	83.3	1	73.9	17
1	16.7	2	17.4	4
		3	/	/
		4	4.3	1
		5	4.4	1
		6-20+		
6	100		100	23
clauses whose subjects don't have a previous referent				
5	(not counted in percentages)			36
12	total N of clauses			59

Table VII
Referential distance for subjects of main clauses
('WHEN' CLAUSES)

<i>NARRATOR</i>		<i>Distance</i>	<i>PARTICIPANTS</i>	
<i>N</i>	% to total N of clauses		% to total N of clauses	<i>N</i>
21	91.3	1	87.5	7
2	8.7	2	12.5	1
/	/	3		
/	/	4		
		5-13		
		14-20+		
23	100		100	8
clauses whose subjects don't have a previous referent				
19	(not counted in percentages)			09
42	total N of clauses			17

4.2. Scope

As explained above, this measurement is similar to referential distance but instead of looking for a previous referent for the subject NP, here the *entire clause* is measured within the context in which it appears. The tables below show that the scope of *final IC and WC* is much more restricted than that of *initial* clauses. The results are the following:

Table VIII shows the results of scope in previous discourse for *initial and final IC used in narrative*. We find here that 87.5% of final clauses have a scope of 1 to 3 clauses. On the other hand, initial clauses show a scope of 1 to 3 clauses in 66.7% of the cases and the rest show values of 6 to 20+. The average scope for final clauses is 2.3 clauses, whereas the average scope for initial clauses is 6.3.

Table IX shows the results of scope for *initial and final IC used by participants*. Here we can see that 83.4% of final clauses have a scope of 1 to 3 clauses, whereas initial IC show a much broader distribution: Only 6.7% have a value of 1 to 3 clauses while all the rest get varied values of 4 to 20+, in a fairly even distribution. The average scope for final clauses is 2.1 clauses, while that for initial clauses is 10.5.

Table X shows the results of scope for *initial and final WC used by the narrator*. We also find here that postposed clauses have a much restricted scope than preposed clauses. 77.8% of postposed clauses have a scope of 1 to 3 clauses while in the case of preposed clauses only 13.8% get values of 1 to 3 clauses; the other 66.2% get varied values of 4 to 20+ clauses. The average scope for final clauses is 3.2 clauses while that for initial clauses is 7.8.

Table XI has the results of scope for *initial and final WC used by participants*. As expected, here we also find that for postposed clauses 66.7% of the total number of clauses have a scope of 1 to 3 clauses whereas preposed clauses show a value of 1 to 3 clauses in only 6.2% of the cases; all the rest get varied values of 4 to 20+ clauses. The average scope of final clauses is 3 clauses, while that for initial clauses 10.5.

Table VIII
Initial and final 'if' clauses used in narrative
Scope in previous discourse

<i>INITIAL CLAUSES</i>		N of clauses to the left	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
1	8.4	1	25	2
3	25	2	37.5	3
4	33.3	3	25	2
/	/	4	/	/
/	/	5	12.5	1
1	8.3	6		
1	8.3	7		
/	/	8-10		
/	/	11-13		
/	/	14-17		
2	16.7	19-20+		
12	100		100	8

Average scope per clause
Initial clauses: 6.3 clauses
final clauses: 2.3 clauses

Table IX
 Initial and final 'if' clauses used by participants
 Scope in previous discourse

<i>INITIAL CLAUSES</i>		N of clauses to the left	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
1	1.7	1	53.4	16
/	/	2	23.3	7
3	5	3	6.7	2
5	8.5	4	3.3	2
4	6.8	5	6.7	2
3	5	6	/	/
3	5	7	3.3	1
4	6.8	8	3.3	1
9	15.3	8		
5	8.5	10		
6	10.2	11-13		
4	6.7	14-17		
12	20.5	19-20+		
59	100		100	30

Average scope per clause
 Initial clauses: 10.5 clauses
 final clauses: 2.3 clauses

Table X
 Initial and final 'when' clauses used in narrative
 Scope in previous discourse

<i>INITIAL CLAUSES</i>		N of clauses to the left	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
2	4.6	1	55.6	15
2	4.6	2	14.8	4
2	4.6	3	7.4	2
3	7	4	11.1	3
6	14	5	/	/
4	9.4	6	/	/
4	9.4	7	/	/
3	7	8	/	/
5	11.6	8	/	/
3	7	10	/	/
2	4.6	11	/	/
2	4.6	12	3.7	1
2	4.6	13	/	/
/	/	14-16	3.7	1
/	/	17-19	/	/
3	7	20+	3.7	1
43	100		100	27

Average scope per clause

Initial clauses: 7.8 clauses

final clauses: 3.2 clauses

Table XI
 Initial and final 'when' clauses used by participants
 Scope in previous discourse

<i>INITIAL CLAUSES</i>		N of clauses to the left	<i>FINAL CLAUSES</i>	
N	% to total N of clauses		% to total N of clauses	N
1	6.2	1	44.5	4
/	/	2	11.1	1
/	/	3	11.1	1
/	/	4	11.1	1
1	6.2	5	11.1	1
2	12.5	6	/	/
2	12.5	7	/	/
3	18.9	8	/	/
/	/	9	11.1	1
/	/	10		
2	12.5	11		
/	/	12		
/	/	13		
2	12.5	14-16		
/	/	17-19		
3	18.9	20+		
16	100		100	9

Average scope per clause
 Initial clauses: 10.5 clauses
 final clauses: 3 clauses

4.3. Aspect/Modality categorization of ‘when’ clauses

The results of this quantification show that ‘when’ clauses used in the narrative pattern differently from those used in quoted speech.

For those clauses used in the narrative (Table XII) we find that a great majority of the ones preposed to the main clause, more precisely 90.2%, are perfective/realis and only 9.8% are imperfective/irrealis. Conversely for postposed clauses, only 26% are perfective/realis while 74% are imperfective/irrealis.

For those clauses used by participants (Table XIII) the pattern is reversed: With respect to preposed clauses, 38.9% are perfective/realis and 61.1% are imperfective/irrealis. With respect to postposed clauses we find that 66.7% are perfective/realis and 33.3% are imperfective/irrealis.

Notice that most ‘when’ clauses are used in the narrative. Out of a total of 95 WC (this includes initial and final clauses) 68 — or 72.6% — are used by the narrator and only 27 — or 27.4% — are used by the participants. This is to expect since WC serve to sequence the temporal contour of the narrative. (Regarding ‘if’ clauses it is the reverse that is found; out of a total of 109 clauses only 20 — or 18.3% — are used in the narrative and 89 — or 81.7% — are used by the participants).

Table XII
Aspect/Modality categorization of ‘when’ clauses
used by the narrator

	Preposed clauses	%	Postposed clauses	%
Perfective/realis	37	90.2	7	26
Imperfective/irrealis	4	9.8	20	74
	41	100	27	100

Table XIII
Aspect/Modality categorization of ‘when’ clauses
used by the participants

	Preposed clauses	%	Postposed clauses	%
Perfective/realis	7	38.9	7	66.7
Imperfective/irrealis	11	61.1	3	33.3
	18	100	9	100

4.4. Distribution of commas

The results of these counts show that commas are used much more frequently with preposed clauses than with postposed clauses. In Table XIV one can see that in the case of IC (this includes narrative and quoted speech) 73.2% of the initial clauses have a comma separating the adverbial clause from the main clause, while for final clauses 94.7% *are not* separated from the main clauses by a comma.

With regard to WC (Table XV) we find the same pattern: 62.7% of preposed clauses have a comma whereas as much as 94.5% of postposed clauses do not.

Table XIV
Distribution of commas in 'if' clauses

<i>INITIAL CLAUSES</i>		<i>FINAL CLAUSES</i>	
N	%	%	N
52	73.2	with a comma	5.3
19	26.8	without a comma	94.7
71	100	100	38

Table XV
Distribution of commas in 'when' clauses

<i>INITIAL CLAUSES</i>		<i>FINAL CLAUSES</i>	
N	%	%	N
37	62.7	with a comma	5.5
22	37.3	without a comma	94.5
59	100	100	36

4.5. Distribution of WC and IC at paragraph breaks

The results of this measurement show that very few IC and WC are used in paragraph initial position (only 13 in the entire novel). As one can expect, all of these clauses are used in the narrative; of those, 12 are WC (7 initial and 5 final). There is only one 'if' clause in this position and it is an initial clause. These results appear in Table XVI.

Table XVI
Paragraph break clauses
Perfective Imperfective

<i>WHEN CLAUSES</i>		
Preposed clauses	7	/
Postposed clauses	3	2
<hr/>		
<i>IF CLAUSES</i>		
Preposed clauses	/	1
Postposed clauses	/	/

5. Discussion

The quantifications performed for this study might not, each by itself, 'prove' that an initial clause is performing a different discourse function than that performed by a final clause. But taken all together they come to show that there is a big difference between the role of the former and that of the latter.

The quantifications on referential distance, for example, show that final clauses exhibit a very high referential continuity with the main clause. This only means that the subject of the main clause tends to be the same as the one on the postposed clause. They also show that initial clauses exhibit a lower referential continuity vis-a-vis the main clause, that is, the subject of an initial clause tends to be different from the subject of a main clause. Moreover, the subject of a preposed clause is sometimes the same as the one of the clause immediately preceding, but in most cases the previous reference for the subject of an initial clause is *in one of the various clauses appearing in the preceding discourse*. Thus preposed IC and WC appear to be thematically linked to the main clause as well as, and even more frequently, to the preceding discourse. Postposed clauses on the other hand, appear to have a much higher referential continuity with the main clause.

As for the quantifications on scope, they come to support the results of referential distance by showing that the thematic link of a preposed clause is much wider than that of a postposed clause. As we have seen, the average scope of a postposed clause is 2 or 3 clauses whereas that of a preposed clause is from 7 to 10 clauses.

With regard to the measurements on the aspect/modality of verbs of 'when' clauses, they come as a very strong support of the hypotheses presented in this paper. We already said that most 'when' clauses are used in the

narrative and that a majority of them are used in a preposed position, something that we can expect since this type of clauses are most frequently used for sequencing the temporal events of the narrative. There is also the fact that a great majority of those 'when' clauses used in initial position show verbs in the perfective/realis while most of those used in final position have verbs in the imperfective/irrealis (most specifically, the majority of them are in the habitual aspect). Thus preposed WC seem to have all the characteristics of what Hopper (1979:214-6) calls 'foregrounded' clauses: They carry main line information, reflect an iconic order, are in the realis modality and show new information in their predicate. There is the fact that these characteristics are not commonly found in adverbial clauses, but as Hopper says, they tend to tolerate new information when they are in clause initial position. In any case, it seems that the notion of foreground/background information is not a theoretically stable one and that, as Givón (this volume) suggests, the grounding function of preposed clauses may not be construed in simple binary terms of foreground/background.

By looking at some examples one can illustrate some of the differences in the function of the two types of clauses:

- (8) a. Some had removed their make-up already, some were still crudely overcoloured for their parts, and Jim McKaid was already costumed and made up for the part of Don Alfonso in *Cosi*, and looked the elderly cynic to the life.

When they saw that Hurtle was in the theatre, one or two went over to him to express sympathy. Nichols watched in amusement... (p.71)

- b. Giulia Contini was floating some delicious high notes as she prepared to go and join her mother in heaven. She was at last giving some indication of how she had made her reputation. Nichols suspected that she was one of these Italians who thrived on a good blow-up row. 'That's a real nice sound,' said Hurtle, and staved on to listen.

When it was all over, and the stage-hands prepared to dismantle the mantuan inn.... Nichols slipped down and had a word with Mike... (p.170)

One can see in these examples the scope of the two preposed WC, the switch of time and action they establish, and how they provide a frame for the material that follows advancing in this way the main line of the narrative.

Now to illustrate how *final WC* do not perform any of these functions, I quote here two examples:

- (9) a. At present it was her recent Carmen with the Welsh National that was fresh in everyone's mind. Brazen, blatant, torrid and vulgar, it had had some critics reaching for their superlatives, and other simply reaching. She even claimed that one non-conformist minister had preached a sermon against her somewhere in the valleys, but nobody believed her. It was as well not to believe Gaylne *when she said things of this sort*. In fact, it was rumored... (p.10)
- b. For the duets Bridget, after consulting with Simon and Mr. Pettifer, was determined not to stint of voice. This Gilda was to be an emotional adult, a woman who knew her own mind. Simon followed suit, opening up with the splendid, full line that was his *when he didn't let his approach get too complicated by introspection*. (p.28)

In these examples it is easy to see how the information conveyed by the final 'when' clause does not advance the main line of the narrative (it is not temporally sequenced either), it only completes the information given in the main clause. One can say that it looks like a parenthetical comment on the narration. Notice also the verbs are in the habitual aspect.

Exactly the same difference in function is seen in 'if' clauses. Consider the following examples:

- (9) a. It was a sweet tenor voice, and the hall, which in its time had made hollow, hungry voices sound strong and full, did its best for Calvin's... 'splendid little hall,' he said.
 'Not so much of this Eyetalian!' said Gaylene French, stomping over to the far end of the hall... 'We're doing the thing in English, guest star notwithstanding.'
 She undid the top button of her blouse, threw apart her arms and bellowed. 'Land of Ho-ope and Gllory!' Then she put her hands on her hips, looked at the pair by the door with infinite self-satisfaction. and said: '*If the hall'll stand that, it'll stand anything.*' (p.9)
- b. He turned to a passing constable, and said: 'We'll want the best shorthand writer in the force for this case. It's going to be one hell of a complicated one, if I'm not mistaken. *If we can't*

have Chappel. I want nothing less than McLintock, and make that clear to them at Headquarters.' (p.85)

- c. The music was racy and seductive, and Gaylene, hands on hips, delivered it with a bouncy vulgarity, too loud. There was something else wrong too, for the voice didn't quite suit the part; there was a suggestion of British Contralto about it, a touch of the Kathleen Ferriers. The listener felt that she might be better employed telling good tidings to Zion, though Gaylene did not in any other respect suggest a messenger of the Lord, and would not for a moment have accepted her unsuitability for the role of Maddalena, *if anyone had had the temerity to suggest it.* (p.14)
- d. 'She went on elsewhere, then. Who to, do you know?
'Owen Caulfield, in the first place, I think. And then Raymond Ricci, and then-God knows who.'
'Why did you split up, sir?'
'Split up? I don't know that we split up, not as I understand the term. You can only split up *if you've been going together*, can't you?
We just went to bed a couple of times... (p.89)

One can see in the first two examples how the initial clauses associate with a portion of the discourse that precedes them, how their scope goes many clauses back and how they help the dynamics of the sequencing of information. The final clauses, on the contrary, carry information that is not exactly part of the main line of the narrative, which makes them look more like a parenthetical comment for the main clause.

If we look now at the results on the measurements on the distribution of commas, we find more support to our findings. We said that preposed clauses are most of the times separated from the main clause by a comma, whereas postposed clauses are almost never separated by a comma. One could try to attribute this fact to stylistic choices or to the fact that since the adverbial clause is in a way an independent structural unit, it calls for a pause between the two structures; but none of these reasons could explain why postposed clauses are *almost never* separated from the main clause with a comma. One has to say instead that the initial clause is 'recalling' part of the preceding discourse and in so doing it is connecting or grounding that preceding discourse to the material that follows. In this way it calls for a pause before the introduction of the information conveyed by the main clause. On the other hand

the postposed clause only seems to be extending the semantic information given by the main clause, thus its role is not at the thematic level.

Chafe (1984) also presents similar results. He examined all types of adverbial clauses and looked for the differences between the behaviour of initial and final clauses in spoken and written discourse. With respect to the analysis of written discourse he also found that a great majority of the preposed clauses are not 'bound' to the main clause, that is, there is a comma between the two clauses (or it is not in the same intonation group in the case of spoken discourse). As for postposed clauses, he says that a majority of them *do not* have a comma. Another part of his study consists of an analysis of the discourse role that initial and final clauses perform and concludes that a preposed adverbial clause represents a limitation of focus, 'signalling a path or orientation in terms of which the following information is to be understood'. A postposed clause, on the contrary, only adds something to the assertion made by the main clause or modifies part of what was stated there.

The analysis presented by Marchese (1977) also comes to support our hypotheses. She determined that clause initial subordinate clauses in Godie function as topics in that they serve as 'frames' for the text that follows. As for her analysis of conditionals on procedural discourse (this volume), it also shows that conditionals (which are all in a preposed position) have a text-organizing function since they serve to break the discourse into significant units and to frame the event in the following clause.

Fagerber's findings (1983) also show the same kind of phenomenon. The choice for clefting or pseudoclefting an element in Pulaar has to do with the needs of the discourse and the communicative choices of the speaker.

Yet another work that supports our findings is Thompson's (to appear) work on the behaviour of initial and final purpose clauses. Her argument centers on the semantic characteristics of purpose clauses which, explains the 'pragmatic positioning' of only that specific type of adverbial clause. Nevertheless, she shows that it is discourse factors that determine whether purpose clauses will be preposed or postposed to their main clauses.

And of course further research on the behaviour of different types of adverbial clauses might require a combined analysis of their functions both at the discourse and at the semantic level. We have seen that different types exhibit different characteristics. 'When' clauses, for example, are used in the narrative and in initial position most of the times. 'If' clauses are used more frequently in quoted speech and in initial position and, because of their semantic character, they are always irrealis. Purpose clauses, on the other

hand, are used most frequently in final position (Thompson to appear) and usually do not have a subject of their own but share the one of the main clause. In any case, we can say now that the *positioning* of the adverbial clause, before or after the main clause, is determined by the organization of discourse.

One should mention the fact that this phenomenon of positioning of adverbial clauses in written discourse is of course related also to factors other than connecting or sequencing information. The writer is also trying to give a certain style to his writing, to create certain moods in the narrative, to surprise or keep the reader in tension in certain ways, to create certain climaxes, etc., besides the obvious job of sequencing the action/events of the story. And in so doing he handles the information with all of these factors in mind and adjusts his writing accordingly. Thus if our numbers do not show higher figures is because this phenomenon is a very complex one that will require much more work before we can understand it entirely.

We might also deepen our understanding on the workings of this phenomena as we get more data from other languages and from other types of discourse. We also have to wait until more research is done on the organization and development of written discourse. And of course we need more empirical studies that will give validity to the intuitive observations we are creating about these notions.

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“PASTNESS” AND “NARRATIVE EVENTS” IN JAPANESE CONVERSATIONAL NARRATIVES

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1. Introduction

This paper is a quantitative analysis of the intersubjective agreement among Japanese native speakers regarding the use of the tense-aspect forms, RU and TA, in Japanese conversational narratives.¹ Previous analyses of Japanese tense-aspect forms have been concerned with how to fit the RU and TA forms into the tense and aspect paradigms which have been developed for western languages. The RU/TA distinction has been analyzed on the sentence level as tense (non-past/past) and aspect (non-complete/complete, uncompleted/completed, incompletive/completive) (Teramura 1971, Szatrowski 1981, Kusanagi 1981, 1982; Soga 1981, 1983, 1984). However, these arguments for and against tense and aspect are difficult to evaluate because the evidence is often based on one linguist’s intuitions against another’s. More recent work has shown that there is a high frequency of RU forms in Japanese written narratives (Soga 1981, 1983, 1984; Makino 1981, 1983) and conversational narratives (Szatrowski 1985), that is, in environments where it is difficult to interpret the meaning as non-past or non-complete, uncompleted, incompletive. The question of whether RU and TA are tense or aspect seems of limited value in comparison with the more global question of how these forms function in actual use in discourse.

Soga (1981, 1983, 1984) has pointed out that foreground events tend to be given in the TA form and background events in the RU form. The present study is a refinement of Soga’s analysis and is concerned with the variability in native speakers’ associations of “pastness” and “narrative events” with the use of RU and TA forms in conversational narratives. The question addressed is an ecological one: “How do mechanisms like tense and aspect function in Japanese and why?” By “ecological” I mean the function of forms and how

they interact with other components in their environment, i.e., the discourse.

Recent linguistic research has stressed the importance of viewing forms in context on the discourse level and suggests that speakers use different strategies in creating their discourse. Polanyi (1979) claims that the point of a narrative is not static but changes during the course of a conversation as it is negotiated by the speakers and hearers involved in the speech situation. Hopper and Thompson (1980) present a view of transitivity as a continuum and suggest that speakers can negotiate the relative foregrounding of events through the categories they choose in the presentation of their experience. Schegloff (1981) points out the following weakness in research on oral narrative.

The common discourse-analytic standpoint treats the lecture, or sermon, or story told in an elicitation interview, campfire setting, or around the table, as the product of a single speaker and a single mind; the conversation-analytic angle of inquiry does not let go of the fact that speech-exchange systems are involved, in which more than one participant is present and relevant to the talk, even when only one does the talking. (Schegloff 1981: 71-2)

In this study, language is viewed as a negotiation between speaker and hearer(s), that is, a product of human agents participating in a social activity. The view that language forms have functions as opposed to meanings necessitates the study of language in discourse because functions have no role outside the context in which they are used.

The methodology used in this study differs radically from that used in the previous research on Japanese tense and aspect cited above. Previous studies relied primarily on the linguist's intuitions or the judgements of several native speakers on sentences, often isolated from context. Questions to the informants were typically posed in the form, "What does the TA form mean in this sentence?" The methodological assumption seemed to be that native speakers are consciously aware of their use of language and that this awareness reliably indicates what guides their actual usage of language. However, like many others, I have found that it is often difficult to ascertain the nature of these articulated associations of meanings or functions with form. My research on the Japanese tense-aspect forms chosen in negative responses to questions about the past showed a discrepancy between speakers' intuitions and their actual usage of the forms, which could well be caused by their educational background in Japanese and English grammar (Szatrowski 1983). The methodology used here investigates speakers' intuitions indirectly in an attempt to bypass some of these problems.

Results of the present study indicate that tense-aspect forms are implemented variably. In particular, the use of TA or RU served to enhance either pastness or narrative events but not both at a particular clause. This complementary of the functions of pastness and narrative events is shown to relate to communicative strategies in the discourse.

2. The Study

The procedure used in this study was as follows. First, the data were collected using observational as opposed to elicitation techniques. Conversational narratives about past experiences were recorded from live television talk shows and natural conversations. Next, native speakers, when possible the original speaker and hearer(s) in the conversation, were questioned directly and indirectly about the verbal forms used in the narrative, for example, how they interpreted the use of a given form and what the effect of changing a RU form to a TA form or vice versa might be. Based on these native speakers' judgements, a list of criteria potentially relevant for the use of the RU and TA forms in narratives was established. The feature pastness was selected as the focus of this paper since it occurred most often in speakers' characterizations of the TA form. The feature narrative events will also be discussed because recent work has shown that event relations play a major role in narrative. The notion of “narrative events” proved important in understanding the use of Japanese tense-aspect forms.

This study was designed to investigate the function of pastness and narrative events in narratives, in particular in clauses which allow the RU/TA substitution. A transcript of the narrative chosen for this study is given in the appendix. A set of three tapes was made based on this transcript, making systematic changes of RU to TA and vice versa.² The tapes were recorded by the same two Japanese native speakers. Tape 1 was made with the RU clauses, marked with a star in the transcript, changed to TA. Tape 2 was a tape of the original narrative. Finally, tape 3 was a recording of the original narrative with the TA clauses, marked with a circle in the transcript, changed to RU. Thus, tape 1 was characterized as having a higher number of TA forms than the original narrative, and will be referred to as the “high TA” tape. Tape 2 will be referred to as the control. Tape 3, which was characterized as having a higher number of RU forms than the original narrative, will be called the “high RU” tape.

Three undergraduate classes at the University of Tsukuba, Japan were chosen as the subjects for this study. Each student was given a packet of transcripts, similar to that in the appendix, only in Japanese. The first class was

given transcripts of tape 1, second class, tape 2 and third class, tape 3. The number of students in each class was 29, 49, and 41, respectively.

The investigation was conducted as follows. First, I played the tape for the students to familiarize them with its content. Next, I defined a feature, for example, narrative events, and asked students to indicate the clauses in the transcript where they felt the feature narrative events applied, while listening to a repetition of the tape. A similar procedure was followed with the feature of pastness. Thus, on separate repetitions of the tape, students were asked to mark the clauses in the transcripts where they felt each feature applied.

It is important to note here that the students' attention was not drawn to the particular verbal forms used in the clauses. They were not directed to associate the features of narrative events and pastness with the tense-aspect forms used. Rather they were asked to consider the narrative as a whole and judge in terms of the clausal units as given in the transcript.

A comparison of students' responses across the three surveys made it possible to measure the heightening effect of TA over RU for the features investigated in groups of clauses as well as in individual clauses. The approach used in this study allowed for a more direct inference of cause than has been allowed in previous studies. A change in the surveyees' intersubjective agreement on the relevance of a feature to a given clause across the three surveys could be associated more directly with the tense-aspect form used, since only changes of RU to TA and TA to RU were made among the three tapes.

3. Results for the Pastness Feature

For the purpose of this study, pastness was defined as follows.³

- (1) *Kakosee. Kakosee to iu no wa, hanasite iru koto ā kako ni okotta to kañzirareru tokoro o sasimasu.*

Pastness. The thing called "pastness" indicates the places which are felt that the things which (one) is talking (about) occurred in the past.

Pastness. "Pastness" refers to the parts where it is felt that what is being talked about occurred in the past.

The average pastness ratings obtained in this study are given in Table 1.⁴ The headings in Table 1 (and Table 2 which is discussed later in the text) stand for the groups of clauses which were analyzed in this study. "All Clauses" refers to all of the clauses changed in the transcripts. The remaining headings are subsets of the clauses in this group. The group "Verbal-1

Table 1: Heightening Effects of Pastness, Comparing RU and TA

Classes	All Clauses	Verbal-1 Clauses	Verbal-2 Clauses	N+Copula Clauses	Htg Effect of TA
1+2	TA 29.2 (.0001)	TA 14.8 (.0006)	TA 12.6 (.014)	TA 38.7 (.0001)	
2+3	TA 16.7 (.03)	TA 15.8 (.04)	TA 14.0 (.03)	TA 24.4 (.0001)	N>V (.002)

P-values are given in parentheses.

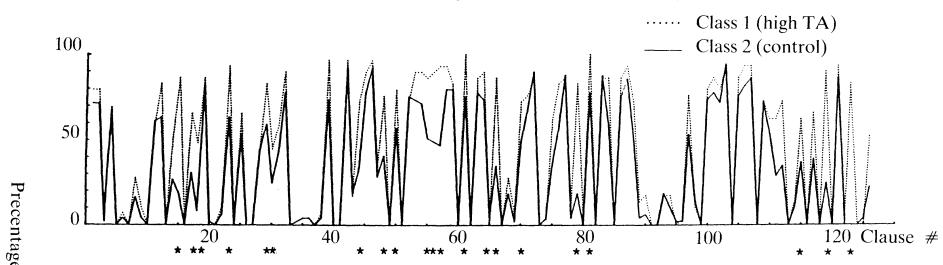
Capital letters indicate significant differences of $p < .05$.

“Clauses” consisted of all changed affirmative verbal clauses. These were final and non-final verbal clauses including clauses in which the verbals preceded a nominalizer such as *no(ñ)*, *wake* or *moñ*, and verbal clauses which modified other nominals. “Verbal-2 Clauses” are a subset of “Verbal-1 Clauses”. This group consisted of affirmative final and non-final verbal clauses including clauses in which the verbals preceded nominalizers such as *no(ñ)*, *wake* and *moñ*, but not verbal clauses which modified nominals. The “Nominal + Copula Clauses” group consisted of affirmative final and non-final nominal + copula clauses, including clauses in which the nominal + copula preceded a nominalizer such as *no(ñ)*, *wake* and *moñ*, but not clauses which modified nominals. Finally, “Htg Effect of TA” stands for the heightening effect of TA over RU. “N>V” in this column indicates that the heightening effect of TA over RU in nominal + copula clauses was greater than in verbal clauses.

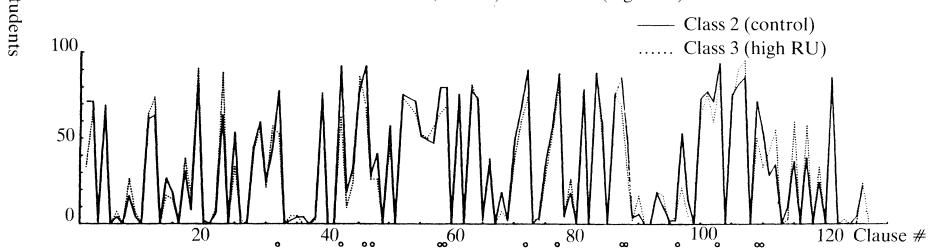
Table 1 shows that TA heightened the pastness rating over RU in all of the 8 comparisons of TA and RU studied and this was significant in all cases. Previous analyses would end here. The fact that the overall average effects of TA over RU are consistent across the board would be sufficient for designating the meaning of TA as pastness in most studies.

However a closer look at Table 1 reveals that the heightening effect of TA was significantly different for verbal and nominal + copula clauses. That is, although the heightening effect of TA over RU was significant overall, this tendency was much stronger for nominal + copula clauses than for verbal clauses. The magnitude of the heightening effects in Table 1 is higher for nominal + copula clauses than for verbal clauses. Specifically, the heightening effects for nominal + copula clauses were 38.7 and 24.4, as compared to

Graph 1: "Pastness" Results for Class 1 (high TA) and Class 2 (control)



Graph 2: "Pastness" Results for Class 2 (control) and Class 3 (high RU)



14.8 and 15.8 for the Verbal-1 group (which included clauses which modified nominals) and 12.6 and 14.0 for the Verbal-2 group.

Results for the pastness feature are summarized in Graphs 1 and 2, which give the percentage of students who rated each particular clause past. In Graph 1, the changed clauses, that is, the clauses where RU in the original transcript were changed to TA in Survey 1, are marked with stars under the x-axis. In Graph 2, the clauses where TA in the original were changed to RU in Survey 3 are marked with circles under the x-axis.

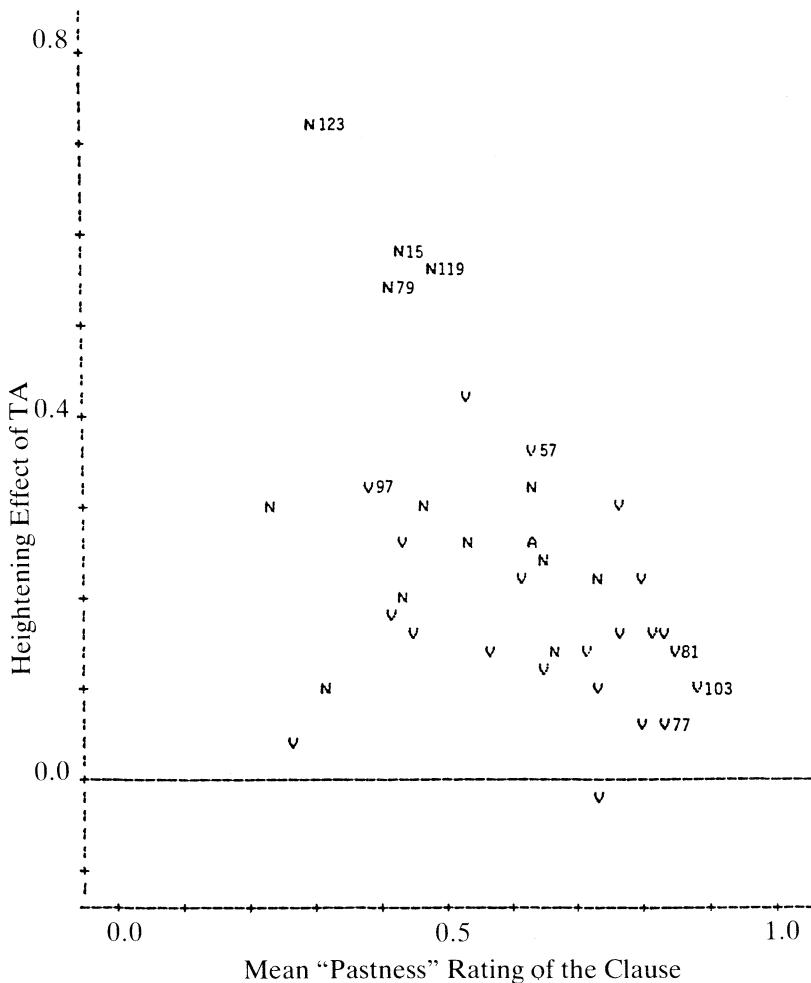
The most striking thing to notice is that the peaks and valleys in the dotted and solid lines of each of these graphs occur at the same clauses. Thus, the distinction between the RU and TA forms is not a black and white distinction of pastness vs. non-pastness. If this were the case, we would expect the solid line to have peaks where the dotted line has valleys, or vice versa. Graphs 1 and 2 give evidence to support the claim that it is not possible to dichotomize the meanings of TA and RU as past and non-past, respectively.

Now we turn to a discussion of the variable implementation of the TA and RU forms. Graph 3 is a graph of the variation in the heightening effect of pastness of TA over RU. The x-axis gives the mean pastness rating of the changed clauses and ranges from 0 to 1. This mean pastness rating was calculated by taking the average of the pastness rating when RU was used and the pastness rating when TA was used, for each clause. Thus, clauses which were considered past regardless of whether TA or RU was used, are on the right side of this graph. Clauses to which the feature of pastness applied less strongly on average are on the left side of this graph. The y-axis gives the heightening effect of TA over RU, that is, the difference in pastness rating when TA was used minus the pastness rating when RU was used. Each point on the graph is labeled N, V or A and represents a single clause. N stands for a nominal + copula clause, V for a verbal clause and A for an Adjectival clause.

It is important to note that the heightening effect of TA over RU varies with each clause. Therefore, like Graphs 1 and 2, Graph 3 also offers evidence against an analysis of TA as past and RU as non-past. In particular, there are a number of points near the horizontal zero line. The pastness rating for these clauses was the same regardless of whether the clause contained a RU or a TA form. In other words, the use of RU or TA did not make much difference in the pastness rating of these clauses.

The following summarizes three points which account for the variation in Graph 3. First, the heightening effect of TA over RU is very small for clauses

Graph 3: Variation in the Heightening Effect of "Pastness"



with high mean pastness ratings. That is, if a clause has a high mean pastness rating, it is judged past regardless of whether TA or RU is used. Furthermore, as the mean pastness rating decreases, the heightening effect of TA over RU increases. That is, clauses which were less strongly associated with pastness regardless of whether TA or RU was used, nonetheless had their degree of pastness significantly enhanced when TA was used over RU.

Therefore, one could draw a line from the upper left to the lower righthand corner of Graph 3 and all the clauses would fall near that line.

Second, there are more V's in the lower right and more N's in the upper left portion of Graph 3. This indicates that there was a tendency for verbal clauses to be associated with pastness regardless of whether TA or RU was used, while clauses containing nominal + copula constructions were associated with pastness only if TA was used.

Third, if one looks at the individual clauses in this graph, clauses in the lower right tend to be active and high in Transitivity. As clause points go up towards the left they become more stative and lower in Transitivity. The notion of Transitivity used here follows that of Hopper and Thompson (1980).⁵ For example, the following clauses at the bottom right are active and high in Transitivity.⁶

- (2) V77 *totTa ñ desu yo.*
 take N COP SP
 ‘It’s that (I) took (his picture), you know.’
- V103 *baa to kaetTA ñ desu yo.*
 whoosh QUOT go home N COP SP
 ‘It’s that (I) went straight home, you know.’
- V81 *Koo, kamera no hoo mukU ñ desu yo.*
 like this camera POSS direction face N COP SP
 ‘Like this, it’s that (he) faces the camera, you know.’

Clauses in the upper left are more stative and low in Transitivity.

- (3) N79 *De, kirai NA no ni ne,*
 and hate COP although SP
 ‘And even though (he) hates it,’
- N119 *Sore mo zenzen piñboke zyanal ñ desu yo.*
 that also at all out of focus COP-(neg) N COP SP
 ‘also it’s that (they) are not out of focus at all, you know.’
- N15 *Koo yaruno ġa suki NA ñ desu yo.*
 like this do SUBJ like COP N COP SP
 ‘Also it’s that (I) like doing this, you know.’
- N123 *De, husigi desU nee.*
 and amazing COP SP
 ‘And, (it)’s amazing, isn’t it.’

Verbal clauses in the middle range tend to be negatives or questions, that is, lower in Transitivity than the affirmative declarative clauses which tend to

cluster in the lower right.

- (4) V57 *anoo, syokuzi-dekimasēN kara ne.*
 um meal-do(pot)(neg) so SP
 ‘um, (he) can’t eat so,’
- V97 *Karui kañzi de motte rasiTA n̄ desyoo?*
 light feeling with take go N COP(tent)
 ‘It’s that (you) took (it) with a light feeling, right?’

In summary, on the average, TA heightened the pastness of a clause more than RU. However, since this heightening effect was variable, an analysis of the meanings of TA and RU as past vs. non-past is inadequate. The variability in the heightening effect of TA over RU can be accounted for in terms of Hopper and Thompson's (1980) Transitivity components. Specifically, for clauses that rate high on the Transitivity scale, the use of TA vs. RU does not change the pastness rating of the clause. For clauses with low Transitivity ratings, the heightening effect of pastness of TA over RU is very strong. Results also correlate with Hopper and Thompson's (1984) categoriality hypothesis. Nouns as a category do not typically function to narrate events. Therefore, one would not expect them to be located in a time frame. On the other hand, it is easier to infer the time location of verbal clauses because they are often associated with events in the discourse. One might speculate that when clauses are high in mean pastness rating (i.e., considered past regardless of whether RU or TA is used), such as is the case with the verbal clauses in the lower right of Graph 3, the speaker has the option of using TA for a different function without altering the pastness of the clause. As is demonstrated in the next section, TA functioned to heighten the narrative event rating of these clauses.

4. Results for the Narrative Event Feature

The feature narrative events was defined after Labov and Waletzky (1967), Labov (1972) and Schiffrin (1981) as follows for the purpose of this study.⁷

- (5) *Omo na Dekigoto. Omo na dekigoto to iu no wa, toki no nagare no naka de zyuñbañ ni okoru dekigoto desu. Kono zyuñbañ ā kuruu to sutoorii wa kawatte simaimasu. Tatoeba, “(a) Samui hi da. (b) Heya ni haitta. (c) Kotatu ni haitta. (d) Gohān o tabeta.” de wa, (a) no zyuñbañ o kaete mo sutoorii wa kawarimaseñ āga, (b), (c), (d) no zyuñbañ ga tiñau to sutoorii wa kawarimasu. (b), (c), (d) wa omo na dekigoto de ari, (a) wa tiñau koto ni narimasu.*

‘Main Event(s). The thing called “main event” is an event which occurs in order in the stream of time. If this order goes wrong the story ends up changing. For example, in “(a) (It’s) a cold day. (b) (I) entered the room. (c) (I) got in the *kotatu*. (d) (I) ate a meal.” if (one) changes the order of (a), the story does not change but if the order of (b), (c), (d) is different, the story changes. (It) becomes the fact that (b), (c), (d) are main events and (a) is different.’

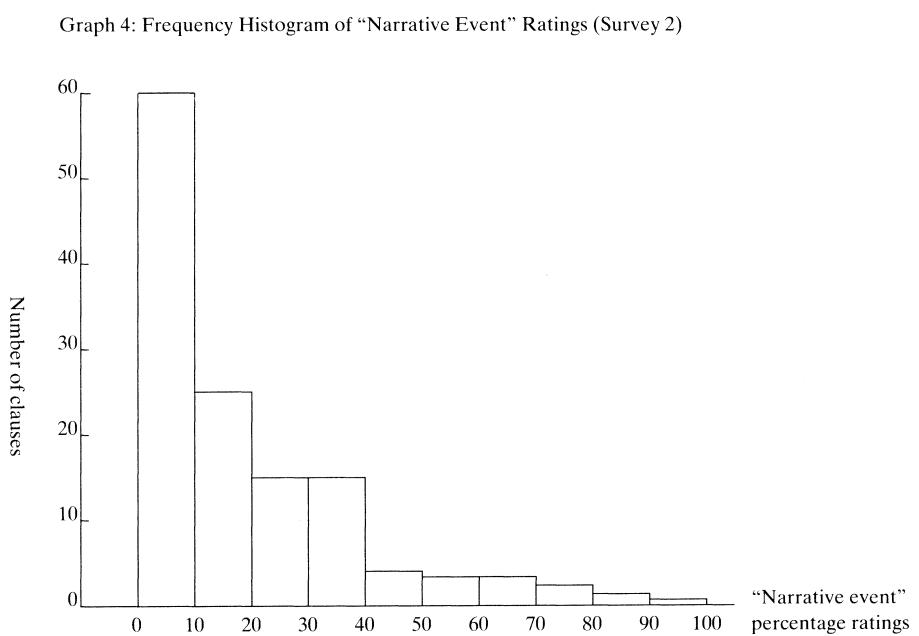
‘Main Events. “Main Events” are the events which occur in order in the flow of time. If this order is mixed up the story changes. For example, in “(a) It’s a cold day. (b) (I) entered the room. (c) (I) sat down at the *kotatu* (low table with heating element attached). (d) (I) ate dinner.”, if one changes the position of (a), the story does not change but if the order of (b), (c), (d) is different, the story changes. (B), (c), (d) are main events and (a) is not.’

Recent analysis of the historical present in English and Spanish conversational narratives (Labov 1972, Schiffrin 1981, Silva-Corvalán 1983) relies

Narratives are oral versions of experience in which events are relayed in the order in which they presumably occurred. Their defining characteristic is a relationship of TEMPORAL JUNCTURE between at least two clauses: if a change in the order of the two clauses results in a change in the interpretation of what actually happened, then those two clauses are NARRATIVE CLAUSES and the events reported are NARRATIVE EVENTS. (Labov and Waletzky 1967, Labov 1972) (Schiffrin 1981: 47)

These definitions suggest that the speaker has an experience in mind made up of a temporal sequence of events which language can accommodate with a one-to-one correspondence between narrative event and narrative clause. The literature cited above accepts Labov and Waletzky and Labov’s definitions as given and suggest that narrative events are easy to identify in English and Spanish narratives. There is no mention of the subjective nature of these definitions.

However, Graph 4, which is frequency histogram showing the number of clauses with particular narrative event percentage ratings, indicates that Labov and Waletzky and Labov’s criteria are not objective in the case of Japanese conversational narratives. If the criteria were clearcut and objective, we would expect a graph with two peaks, one at the lower end of the narrative event rating scale indicating agreement on what does not constitute a

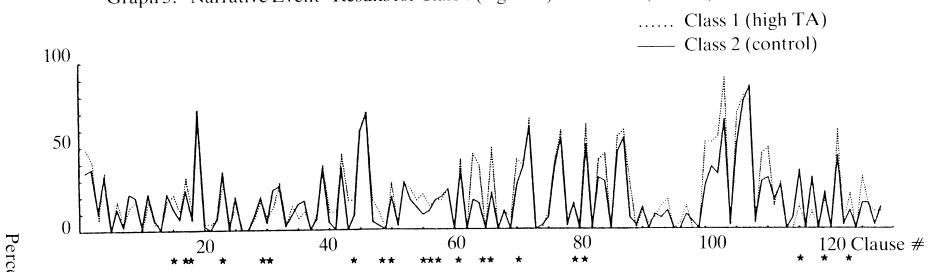


narrative event, and the other on the higher end of the scale indicating agreement on what does constitute a narrative event. Instead, we obtained a smooth curve which strongly suggests that the criteria for narrative eventhood are relative. This supports the claim made by Hopper and Thompson (1980) that narrative events form a continuum.

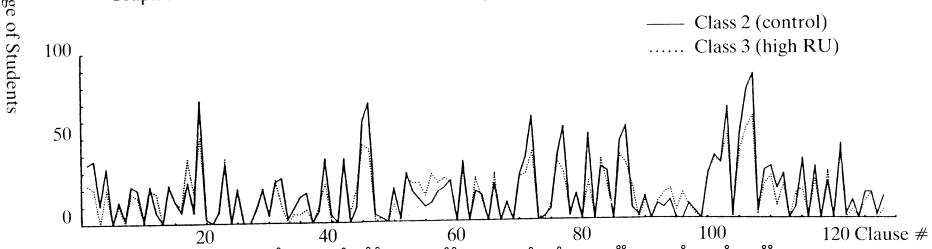
It should be stressed that narratives are not static discourses, prepackaged units of experience composed of discrete events. Experiments by Newtonson (1976) indicate that people describe the events of a movie differently depending on the stimuli they are given beforehand. This suggests that when speakers recount their experience they do not simply encode predetermined set of events in temporal sequence but rather are free to present their experience in terms of a variety of event-types, some more or less prominent than others. Similarly, hearers' interpretations of a speaker's presentation of events may vary. This view of speakers and hearers having options to negotiate the status of events in the discourse is relevant to the discussion of the results obtained for the narrative event feature which follows.

Results for the narrative event feature are given in Graphs 5 and 6. If we look at the peaks and valleys for the lines in these two graphs, we see that they occur at the same clauses. Therefore, we cannot conclude that the TA clauses mark narrative events while the RU clauses do not, or vice versa. In addition, we see that a number of other clauses, which do not allow the RU/TA substitution are perceived as narrative events. Preliminary results indicate that clauses ending in the *V-te* gerund form are perceived as being very prominent narrative events. The narrative event ratings obtained for all of the clauses in this survey suggest that clauses which contain an affirmative non *-te iru* verbal form were perceived as being the most prominent “narrative events.” These include clauses ending the *V-te* gerund form, *V-(r)u* form and *V-ta* form. Next, clauses ending in the *V-te iru* and *V-te ita* forms are perceived as less prominent narrative events. Finally, clauses containing adjectivals, nominal plus copula predicates, and negatives received the lowest narrative events ratings. Again these results correlate with Hopper and Thompson's (1984) categoriality hypothesis which predicts that nominal + copula clauses are less likely to be associated with narrative events than verbal clauses.

Graph 5: "Narrative Event" Results for Class 1 (high TA) and Class 2 (control)



Graph 6: "Narrative Event" Results for Class 2 (control) and Class 3 (high RU)



Now, we turn to the question this experiment was designed to answer: In the same environments, does the use of a TA form highlight the perception of the clause as a narrative event more than the RU form? The narrative event ratings for clauses which allow the RU/TA substitution are summarized in Table 2.

Table 2: Heightening Effects of Narrative Events, Comparing RU and TA

Classes	All Clauses	Verbal-1 Clauses	Verbal-2 Clauses	N+Copula Clauses	Htg Effect of TA
1+2	ta .5	ta 2.4	TA 9.5 (.05)	ru 2.3	V>N
2+3	TA 6.7 (.02)	TA 6.5 (.05)	TA 7.6 (.04)	TA 12.9 (.05)	

P-values are given in parentheses for $p < .05$.

Capital letters indicate significant differences of $p < .05$.

Lowercase letters indicates possible tendencies at $p < .1$.

Table 2 indicates that on the average TA heightens narrative event ratings. Specifically, TA heightened the effect of narrative events over RU in 7 of the 8 RU/TA comparisons studied in this investigation and 5 of these were significant. However, more interestingly, the analysis showed that there was a negative correlation between the heightening effect of pastness and the heightening effect of narrative events. In particular, it was found that clauses in the lower right of Graph 3, that is, clauses where the heightening effect of TA over RU for pastness was near zero, had higher than average narrative event ratings. Clauses in the upper left, where TA strongly enhanced the heightening effect of pastness over RU, had lower than average narrative event ratings.

To summarize, the function of TA served to enhance either the pastness or narrative event rating, but not both, at a particular clause. In other words, the functions of pastness and narrative events complemented one another in clauses which allowed the RU/TA substitution.

5. Conclusion

The above study gives empirical evidence to support the claim that an explanation of the use of Japanese tense-aspect forms involves more than morphological distinctions like non-past/past and noncomplete/complete, uncompleted/completed, incomplete/completive. The TA and RU forms are shown to be implemented variably in the discourse and this has important implications for research methodology. Specifically, it indicates that the function of tense-aspect forms cannot be derived using an analysis which concentrates only on the sentence level.

On the average TA heightens the perception of pastness and narrative events over RU, but responses are not consistent for all clauses. However, it is possible to give an ecological explanation for this variability in view of the interaction between tense-aspect forms and other components in the discourse. When the mean pastness rating of a clause is very high, i.e., the clause is perceived as past regardless of whether TA or RU is used, there is less of a need to negotiate pastness, presumably because the time location of the clause can be inferred from other forms in the clause or from the position of the clause in the discourse. In particular, this is the case for affirmative verbal clauses which are high in Transitivity. One can speculate that in these clauses RU and TA are free to be used for other functions besides pastness. In fact, TA is shown to enhance narrative event ratings over RU in these clauses, which suggests that the function of TA in these contexts is to foreground the clause.

On the other hand, when the mean pastness rating of a clause is in the medial-low range, there is a tendency for TA to strongly enhance the pastness of the clause over RU and the effect of TA and RU on the narrative event rating is less prominent. This is the case for nominal + copula clauses, which presumably require the most negotiation with respect to pastness because it is difficult to infer their time location from the discourse. The following example taken from the conversation used in this study illustrates the kind of negotiation which can occur when a RU form is used in nominal + copula contexts.

- (6) A- *Soo iu koo, tiisai no o ne hikinobasite,*
 like that say like this little one OBJ SP enlarge(ger)
 'Those, like this, (I) enlarge the little ones, and.'
- (7) *koo yaruno āga suki NA ū desu yo.*
 like this do N SUBJ like COP N COP SP
 'it's that (I) like doing this, you know.'

- (8) B- *Zya, ima demo odekī ni naru no?*
 well now even do(pot) (hon) N
 ‘Well, is it that you can do (it) even now?’
- (9) A- *Imaa, titi ēga ikite RU toki wa ne,*
 now father SUBJ live when TOP SP
 ‘Now, when my father is living,’
- (10) *anoo, are NA ñ desu yo.*
 um that COP N COP SP
 ‘um, it’s that, you know.’
- (11) *tyotto naku narimasita moñ de,*
 just pass away N COP(ger)
 ‘just, it’s that (he) died, and’

Speaker A’s use of RU (the *NA* form of the copula) in (7) leads B to think that she enlarges pictures even now. A and B negotiate this point through B’s question in (8) and A’s response in (9) through (11). Further inquiry into interactions of this sort will shed new light on the types of situation which can be negotiated by tense-aspect forms.

Finally, it was found that notions like pastness and narrative events are also relevant to clauses which do not allow the RU/TA substitution. This suggests a need for further investigation into clause combining and the relations between preceding and subsequent clauses in the discourse.

There are undoubtedly many other functions associated with the RU and TA forms in Japanese conversational narratives. However, the more important question to ask is what strategies do people use to create and interpret their discourse. Just as people recall their experience of a movie differently depending on the stimuli given beforehand, one would expect a narrative to be presented differently depending on the impetus in the pre-narrative discourse and the interaction between speaker and hearer as the narrative develops. The task for the future is to describe the negotiations of tense-aspect forms in the interactional context.

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NOTES

1) RU is used in this study to refer to the three major predicates in Japanese, *V-(r)u* (including *V-te iru*), *A-i* and *N + da* (*V*= verbal stem, *A*= adjectival stem, *N*= nominal) and all their variations in politeness and formality, affirmative or negative, whether they occur in: sentence final position; sentence medial or sentence final position before a particle, before a nominalizer such as *no* (ñ), *wake*, *mono*, (*moñ*) before *daroo/desyoo*; or in the sentence modifying constructions of other nominals. TA refers to the three major predicates in Japanese, *V-ta* (including *V-te ita*), *A-katta* and *N + datta* in the same environments as specified for RU above. The RU and TA variations are capitalized in the examples and transcript. The Japanese romanization used throughout this paper follows that of Jorden (1963).

2) The decision as to which clauses to change was made in consultation with native speakers using two methods. First, some native speakers were shown the transcript and asked if it were possible to make changes of RU to TA or vice versa. Second, copies of transcripts with these changes made were shown to other native speakers who were asked to comment on whether anything in the transcript seemed unnatural. That speakers took this task quite seriously is evidenced by the fact that they pointed out a number of places in the transcripts besides tense-aspect forms which they felt were strange. Finally, these speakers were asked specifically to comment on the acceptability of tense-aspect forms in the transcript. Only clauses which speakers said would allow the RU/TA substitution were changed in the study presented here.

3) Two English translations are given for the definitions of the features studied in this paper. The first is a word-for-word literal translation of the Japanese and the second, a more smooth translation.

4) The results given in Tables 1 and 2 were calculated using the following statistical methods. The example presented here shows how the heightening effect for the pastness feature was calculated for Verbal-2 clauses in the comparison of results for Classes 1 and 2 (Table 1).

Example: Heightening Effect of Pastness in Verbal-2 Clauses (Classes 1 and 2)

	Class 1 (High TA)	Class 2 (Control)
TA (unchanged clauses)	63.72	53.84
RU--> TA (changed clauses) TA used	90.51	y
RU--> TA (changed clauses) RU used	x	68.00

Adjusted pastness effect of TA= 12.63 p= .014

Ideally we would like to estimate $90.51 - x$, or $y - 68.00$ because this would estimate the heightening effect of TA over RU at the same clause for the same people in the same survey. However, we do not have direct estimates of x and y because it is impossible for a single clause to be both RU and TA in the survey for the same class. Assuming an additive model holds, we can use $(90.51 - 63.72) - (68.00 - 53.84) = 26.79 - 14.16 = 12.63\%$ to estimate the amount that the use of TA

heightens pastness over RU. In other words, differences in average pastness ratings between the two classes can be corrected by subtracting off the pastness ratings for unchanged clauses, i.e., 63.72 and 53.84, respectively. Thus, we estimate that there is a 13% increase in the perception of pastness of Verbal-z Clauses if TA is used over RU. A two independent population t-test on population means was used to determine whether or not this effect was significantly different from zero (Ott 1977: 112).

5) Hopper and Thompson (1980) asses the relative Transitivity of a clause according to the following 10 components of Transitivity.

TRANSITIVITY	HIGH	LOW
A- PARTICIPANTS	2 or more participants	1 participant
B- KINESIS	action	non-action
C- ASPECT	telic	non-telic
D- PUNCTUALITY	punctual	non-punctual
E- VOLITIONALITY	volitional	non-volitional
F- AFFIRMATION	affirmative	negative
G- MODE	realis	irrealis
H- AGENCY	agent high in potency	agent low in potency
I- AFFECTEDNESS of O	object totally affected	object not affected
J- INDIVIDUATION of O	object highly individuated	object non-individuated

(Hopper and Thompson 1980: 252)

6) The following abbreviations are used in the Japanese examples. N= nominalizer (*no*, *ni*, *wake*, *mono*, *moni*) The nominalizers *no* and *mono* are distinguished from nominals *no* and *mono*, respectively, because they do not allow *ga/no* substitution in the predicate which precedes them. (Eleanor Jorden, p.c.)

COP= copula, SP= sentence particle, QUOT= quotative particle, POSS= possessive, SUBJ= subject, OBJ= object, pot= potential, neg= negative, tent= tentative, hon= honorific, ger= gerund

7) The Japanese definition for this feature follows that of Labov and Waletzky (1967), Labov (1972) and Schiffriin (1981). However, it was necessary to translate the feature itself, “narrative events”, as *omo na dekigoto*, ‘main event’, because native speakers felt that more literal equivalents were unnatural.

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APPENDIX

Narrative transcript taken from the Japanese interview program “*Tetuko no Heya*”, ‘Tetsuko’s Room’; A= actress Kumi Mizuno, B= interviewer Tetsuko Kuroyanagi

	Class 1	Class 2	Class 3
*	TA ←	RU	RU
o	TA	TA →	RU

- | | |
|---|---|
| 1. __ A- Sore kara toru hoo wa daisuki ni
narimasite,
2. __ iroiro titi kara osowatte,
3. __ B- A. Syasiñ o?
4. __ A- Ee. Toru hoo mo daisuki ni
narimasite,
5. __ B- A. Soo desu (ka). | 1. A- Then it got to the point where (I)
loved to take (pictures) too, and
2. (I) learned various things from my
father, and
3. B- Oh. (Taking) pictures?
4. A- Yes. It got to the point where (I) loved
to take (pictures) too, and
5. B- Oh. Is that so. |
|---|---|

6. A- Ee. Sore kara añsitu tte aru ñ desu yo no?
7. B- Ee.
8. A- De, soko e haitte,
9. — ano, hikinobasi tte aru ñ desu yo.
10. B- Ee.
11. A- Sore o, ano, tetudatte,
12. — anoo, me ñga totemo yokatta moñ desu kara,
13. B- Araa.
14. A- Soo iu, koo, tiisai no o ne hikinobasite.
15. * koo yaru no ñga suki NA ñ desu yo.
16. B- Zya, ima de mo odekî ni naru no?
17. * A- Imaa, titi ga ikite RU toki wa ne,
18. * anoo, are NA ñ desu yo.
19. — tyotto naku narimasita moñ de,
20. B- A. Soo desu (ka).
21. A- Hai.
22. B- Wari to saikiñ desu ka.
23. * A- Kyoneñ no si-gatu nizyuu ku niti desU.
24. B- Araaa.
25. A- Anoo, tyotto, ee, kootoogañ de,
26. B- Soo desu ka.
27. A- Ee.
28. B- Oi, otoosama oikutu datta no?
29. * A- Anoo ne, nanazyuu-sañ desU.
30. * B- Nañka, sono toki desU ka.
31. Otoosama no toko, otoosama wa daitai syasin utusareru no wa okirai na kata dat...
32. o Moo, daikirai datTA ñ desu you nee.
33. B- Ñ.
34. A- De, soree, ñ, sooiu no tte, nañka, sore koso, tyotto reikañ tte iu no ka sira.
35. — Nani ka, ano, yoku hito ñga naku naru toki tte,
36. — koo, nañka, koo, yobiyoseru tte iu no arimasu desyoo?
37. B- Ee.
38. A- Maa, sore ka doo ka wakañnai ñ desu keto ne,
39. — tyotto husigi na koto ñga atta ñ desu keto,
40. — yo, yorosii desu ka.
41. B- Ii desu yo
6. A- Yes. Then, there's a dark room, you know?
7. B- Yes.
8. A- And, (I) go in there, and
9. — um, there's an enlarger, you know.
10. B- Yes.
11. A- That, um, (I) help (with it), and
12. — um, my eyes were very good so,
13. B- Oh.
14. A- Those, like this, the little ones (I) enlarge (them), and
15. — (I) like doing this, you know.
16. B- Well, can (you) do (it) even now?
17. A- Now, when my father is living,
18. — um, it's that, you know.
19. — just, it's that (he) died, and
20. B- Oh. Is that so.
21. A- Yes.
22. B- Is (it) relatively recent?
23. A- (It) is April 29 of last year.
24. B- Oh.
25. A- Um, just, yes, from throat cancer,
26. B- Is that so.
27. A- Yes.
28. B- How old was your father?
29. A- Um, seventy-three.
30. B- Something, is (it) that time?
31. — Your father, your father for the most part was a person who didn't like having (his) picture taken...
32. A- Oh, (he) hated (it), you know.
33. B- Hm.
34. A- And, that, um, that kind of thing, something, that, just (I) wonder if (one) calls (it) a sixth sense.
35. — Something, um, often when people are going to die,
36. — like, there's something, like, that (one) says comes to call, isn't there?
37. B- Yes.
38. A- Well, (I) don't know whether (it) is that or not, but
39. — just, an amazing thing happened, but
40. — is (it) alright (to talk about it)?
41. B- (It)'s alright.

42. o A- Anoo, zeñzeñ ne, ano maa, omimai wa tokidoki itte masiTA kedo ne,
43. — B- Ee. Tookyoo de.
44. * A- Ee. Ee. Tookyoo desU kedo,
45. — ano, nañka, kazoku de, zeñiñ de ne nañka, tonikaku asita zettai ikenakya ikenai tte iu ki ni natte.
46. o anoo, sore de, sono maa, miñna de itTA wake desu yo.
47. o B- Ee. Toku ni sore hodo sepatumatTA zyootai de wa na(ku)...
48. * A- Zya naI ñ desu.
49. — B- Aa soo.
50. * A- Tada, anoo, byooin ni nyuuiñ-site RU tte iu koto de,
51. — B- Ee.
52. — A- Sore de ittara,
53. — anoo, mo, kanari ne, yasehosotte,
54. — moo, kokkara kuda o toosite,
55. * hidol ñ desu yo.
56. * kootoogañ desU kedo,
57. * anoo, syokuzi-dekimasEÑ kara ne,
58. o de, moo, yasehosotte masiTA kara,
59. o aa, dame ka naa nañte omotte masiTA kedo,
60. — B- Ee.
61. * A- geñki yokusyabeRU ñ desu yo ne.
62. — B- Aa.
63. — A- Koñna ni yasetyatte na, sore de, nañka yami zyoozu no sinibeta da to ka itte,
64. * syabette RU ñ desu yo ne.
65. — B- Ee.
66. * A- De, sono toki, itu mo kamera o motanal ñ desu yo.
67. — B- Ee.
68. — A- De, yoñ-mai,
69. — B- Anata ãa...
70. * A- Ee. Yon-mai nokotte RU kara,
71. — motte ikoo to omotte,
72. o motte tTa ñ desu yo.
73. — B- Ee.
74. — A- Sore zyaa...
75. — B- Kazoku-zyuu de irasite,
76. — A- Totte akeyoo ka. Ee. Totte akeyoo ka tte tte ne,
42. A- Um, not at all, um well, (I/we) had been going to see (him) sometimes but,
43. B- Yes. In Tokyo.
44. A- Yes. Yes. (It's) Tokyo but,
45. um, something, with the family, something, anyway (I) got the feeling that (we) should all go tomorrow, and
46. um, then, that well, (we) all went, you know.
47. B- Yes. (It was)n't especially, that pressing circumstances...
48. A- (It) isn't.
49. B- Oh (I) see.
50. A- Just, um, (his) being in the hospital, and
51. B- Ee.
52. A- Then, when (I/we) went,
53. um, oh, (he) had grown very thin, and
54. oh, (they) pass a tube from here, and
55. (it)'s awful, you know.
56. (It)'s throat cancer but,
57. um, (he) can't eat so,
58. and, oh, (he) had grown thin so,
59. oh, (I) was thinking this is it but,
60. B- Yes.
61. A- (he) talks in good spirits, you know.
62. B- Oh.
63. A- (He) says, “(I)'ve gotten so thin, haven't (I)” then something like (he)'s good at getting sick and bad at dying, and
64. (he)'s talking, you know.
65. B- Yes.
66. A- And, that time, (I) don't always carry carry a camera, you know.
67. B- Yes.
68. A- And, four pictures,
69. B- You...
70. A- Yes. (There) are four pictures left so,
71. (I) think about taking (it), and
72. (I) took (it), you know.
73. B- Yes.
74. A- Well...
75. B- (You) go with the whole family, and
76. A- “Shall (I) take (your picture)?” Yes. And saying, “Shall (I) take (your picture)?”

77. o totTa ñ desu yo.
 78. __B- Otoosama...
 79. *A- De, kirai NA no ni ne,
 80. __B- Ñ.
 81. *A- Koo, kamera no hoo mukU ñ desu yo.
82. __B- Ee.
 83. __A- Sore de, anoo, kodomo mo ne, turete
 ikimasita kara,
 84. __ zyaa, ma gó to issyo ni doo tte ne,
 85. __B- Ñ.
 86. __A- Ano, issyo ni pati pati to totte,
87. o sono yoñ-mai totTA wake desu yo ne.
88. o B- Ee. Ano, nokotte TA no ne, sono
 firumu ãa nokotte TA no o omoti ni
 natTA no ne?
89. __A- Soo na ñ desu.
 90. __ Sore ãa doo site yoñ na no ka
 91. __B- Aa.
 92. __A- Yoñ te, añmari yoku nai rasií desu
 kedo ne,
 93. __B- Ñ. Sore wa, sosite, atarasii no wa
 irete,
 94. __A- Irete ikimasu yo ne.
 95. __B- De mo, maa,
 96. __A- De, watasi tte, soo iu toko
 arimasu kara,
 97. o B- Karui kañzi de motte rasiTA ñ
 desyoo?
 98. __A- Soo na ñ desu.
 99. __B- Ñ.
 100. __A- Sore de, anoo, maa, miñna
 syabette ne,
101. __ zyaa, ano, watasi, nani ka attara
 yoñde ne to ká itte,
 102. __ ano, zya, kaeru wa yoo, nañte
 103. o baa to kaetTA ñ desu yo.
 104. __B- Ee.
 105. __A- De, uti e tuite,
 106. __ go-huñ go ni ne, deñwa ãa
 kimasite,
 107. __ sakki naku narimasita nañte
 ano, oneesañ kara deñwa arimasite,
108. __B- Aa.
77. (I) took (his picture), you know.
 78. B- Your father...
 79. A- And, even though (he) hates it,
 80. B- m.
 81. A- Like this, (he) faces the camera, you
 know.
 82. B- Yes.
 83. A- Then, um, (I) brought the children too
 so,
 84. saying, "Well, how about with the
 grand-children",
 85. B- m.
 86. A- Um, (I) took (them) together snap
 snap, and
 87. (I) took those four pictures, you
 know.
 88. B- Yes. Um, the left over ones, (you)
 took the one which had the left over
 film?
 89. A- That's right.
 90. (I) don't know why it's four but,
 91. B- Oh.
 92. A- Apparently, four is not very lucky but,
 93. B- Hm. That, then, (you) put new one
 (film) (in), and
 94. A- (I) put (it in) and go, you know.
 95. B- But, well,
 96. A- And, I, have that kind of thing so,
 97. B- (You) took (it) with a light feeling,
 didn't you?
 98. A- That's right.
 99. B- Hm.
 100. A- Then, um, well, everyone talked, and
 101. well, um, (I) said call me if there's
 something, and
 102. um, saying well (I)'m going home
 103. (I) went straight home, you know.
 104. B- Yes.
 105. A- And, (I) arrived home, and
 106. five minutes later, there was a phone
 call, and
 107. saying (that he) just died, um there
 was a phone call from my older sister,
 and
 108. B- Oh.

109. o A- Bikkuri-sityatTA ñ desu yo.
110. o Da kara, sore ā saīgo datTA ñ desu.
111. B- Doñna syasin ā dekita ñ desu ka.
112. A- Sore ā nee, tyañto ne, kamera no hoo muite ne,
113. B- Ee.
114. A- Koo, nañ te iu no ka sira.
- 115 * Hoñto ni, koo, kamera ni sugarU mitai no ne, hyoozyoo o site,
116. B- Ee. Ee.
117. A- Sore de, ma gó to wa tyañto te o ne, niğitte ne,
118. B- A soo.
119. * A- Ee. Soo iu syasiñ ā..., sore mo zeñzeñ piñboke zya naI ñ desu yo.
120. B- A soo.
121. A- De, haha ni sore o agemäßasita keto nee,
122. B- Ñ.
123. * A- De, husigi desU nee.
124. B- Ñ.
125. A- Ima, koo kero kero syabette masu keto nee,
126. maa, sono toki wa, tyotto ne, da kara, soo iu tokoro tte aru mitai desu yo.
127. B- Soo na no ne- kitto
128. Ma, soo iu mono ā, yahari niñgeñ no ikitre ru tte koto na no ka mo sirenai si ne...
109. A- (I) was totally dumbfounded, you know.
110. So, that was the last time.
111. B- What kind of pictures came out?
112. A- That, properly, (he) faced towards the camera, and
113. B- Yes.
114. A- Like, (I) wonder how to say (it).
115. Really, like, like (he) is appealing to the camera, (he) makes an expression, and
116. B- Yes. Yes.
117. A- Then, (he) held hands with the grandchildren, and
118. B- Oh. Is that right.
119. A- Yes. Those kind of pictures..., also they are not out of focus at all, you know.
120. B- Oh. Is that right.
121. A- And, (I) gave those to my mother but,
122. B- Hm.
123. A- And, (it)'s amazing, isn't it.
124. B- Hm.
126. A- Now, (I)'m talking away like this but,
126. well, then, a bit, so, (it) seems like that kind of thing happens, you know.
127. B- That's right, for sure.
128. Well, that sort of thing may be, afterall what life is all about...

“SUBORDINATION” AND NARRATIVE EVENT STRUCTURE

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1. Introduction

There has been a fair amount of discussion in the literature from the past several years on the possibility of a distinction in narrative discourse between two types of linguistic material: material whose primary function is to report the narrative EVENTS of the story, those which are temporally ordered with respect to each other, and material whose primary function is something other than this. One of the earliest such proposals and one of the most precise is that of Labov and Waletzky (1967), in which narrative sequence is described in terms of “displacement sets” and “temporal juncture”:

Displacement set of clause c-: the set consisting of the clauses before which c can be placed without affecting the temporal sequence of the semantic interpretation, c itself, and the clauses after which it can be placed without changing the temporal sequence of the original semantic interpretation. p. 22

Temporal Juncture: the boundary between two clauses which are temporally ordered with respect to each other, i.e., whose displacement sets do not include each other. p. 25

Any clauses whose range does not cross a temporal juncture between two other clauses is defined as a *narrative clause*.

Labov (1972) repeats this distinction between “narrative” and “non-narrative” clauses: a narrative text is a “sequence of two clauses which are temporally ordered: that is, a change in their order will result in a change in the temporal sequence of the original semantic interpretation” (p. 360).

A number of linguists have taken this definition as a starting point in attempting to relate various grammatical phenomena to this distinction between narrative and non-narrative portions of text (see especially Du Bois (1980), Grimes (1975, chaps. 4, 5, 6), Hopper (1979a), (1979b), Hopper and Thompson (1980), Longacre (1976, 1983), Sheffler (1978), Silva-Corvalan

(1983), and Wald (1973)). The work of Hopper and of Hopper and Thompson introduced the terms "foregrounding" and "backgrounding" for this distinction; since then there has been much discussion as to how the distinction should be defined, what the criteria might be for determining, in a given text, which portions are "foregrounded", and whether the distinction exists at all.

While the terms "foregrounding" and "backgrounding" were intended to reflect the temporal ordering criterion of Labov, in both Hopper's papers and in Hopper and Thompson there are suggestions that the foregrounded portion of a narrative discourse also carries the most "important" material, or the "backbone" of the story. Since then, it has become clear that the temporal ordering criterion and the "important event" criterion need to be sharply distinguished. At least two studies (Kalmar (1982) for Czech and McCleary (1982) for Brazilian Portuguese), for example, have shown that while sequentiality might be relevant to aspect marking, "importance" or "backbone" may not be.²

In a very interesting recent paper, Reinhart (to appear) discusses the relationship between subordinate clauses and event structure in the context of the relationship between the temporal organization of narratives and the principals of gestalt perception. Reinhart defines "foreground" as the sequence of narrative clauses, as defined by Labov, and suggests that "a powerful means" for marking background is "the use of syntactic embedding" (ms., p. 22). She further claims that "material presented in subordinate clauses cannot normally be foregrounded" (ms., p. 22), but that writers can sometimes "play" with the foreground-background relations such that a narrative clause can "function as background" if it is marked syntactically as subordinate (ms., p. 26-7), just as long as the events are still ordered "on the same time axis" as in the represented world (ms., p. 27).

In this paper I would like to discuss the correlation between "subordinate clauses" in English written narrative and the notion of temporal sequencing. The question, then, is: in written English narrative discourse, is "subordination" inversely correlated with "foregrounding" in the sense of "sequentially ordered"? If not, why not?

2. Data Base

For this study, I took two narrative passages from the personal narrative by Herbert Terrace called *Nim*, the story of Terraces's experience attempting to teach the chimpanzee Nim Chimpsky to use American Sign Language. In

order to investigate the relationship between "subordinate" clauses and temporal sequencing in a narrative, I attempted to identify the predicates which were in temporal sequence, or "on the time line", as well as those which occurred in "subordinate" clauses. Both these notions will be elaborated in the context of the passages, which are given just below; the predicates evaluated as being in temporal sequence are in capital letters, and those in "subordinate clauses" are italicized:³

Passage A

The most memorable reunion I *observed* occurred between Nim and Stephanie and her family. It took place at Delafield two days before Nim *was returned* to Oklahoma. *Knowing* how excited Nim gets when he *sees* a former caretaker, even from a distance, I took pains to *insure* that Nim *had* as little an inkling as possible of the presence of his visitors. I ASKED Stephanie and her family *to sit* quietly, around the corner from the main entrance to the house, so that Nim, who *was playing* in front of the house, *would not see* them. I then ASKED Dick Sanders, who *was* with Nim at the time, *to walk* with him toward the site I *had chosen* for the rendezvous between Nim and his first family. Nim was mildly excited when he *SAW* me and *SIGNED* "PLAY". That reaction was quite familiar. At that time I was visiting the house on a daily basis. Just about every time Nim *saw* me, he reacted the same way: a momentary round of playfulness, a quick hug, and no great disappointment when I *put* him down.

Stephanie had visited Nim at Delafield on two prior occasions. I had witnessed the most recent of these reunions. From what I *saw* and from what Stephanie *told* me about her earlier reunion, it was apparent that Nim *was especially delighted to see* her. But none of the reunions I *had witnessed* or *heard about* between Nim and Laura, Stephanie, Marika, or Walter had prepared me for the intensity of Nim's reaction when he suddenly *CAME UPON* Stephanie and her family *sitting* in a semicircle near one of his favorite trees.

Nim *SMILED* a smile the size of which I *had never seen* and *SHRIEKED* in a way I'd *never heard*. At first he seemed too excited even to *hug* Stephanie. His smiling and shrieking continued for what *seemed to be* at least three minutes. During that time he *SAT DOWN* across from Stephanie. While *looking* back and forth at Stephanie, WER, Joshua, and Jennie, he *CONTINUED TO SHRIEK*, *SMILE*, and *POUND* the ground with joy. Only after he *STOPPED SMILING* and *SHRIEKING* did he *GO TO* Stephanie and *HUG* her. That hug was also interrupted by additional shrieks. Quite a lot of noise from a normally silent chimpanzee!

After *spending* about fifteen minutes with Stephanie, Nim *WENT* over to WER, Josh, and Jennie, and *HUGGED* each of them in turn. He then *RETURNED* to WER and *BEGAN TO GROOM* him. A few minutes later he *Moved* over to Jennie, *GROOMED* her for a while, and then *DID* the same with Josh. Nim's total involvement in *hugging* and *grooming* and in

playing with the LaFarges was all the more impressive in that he *seemed* oblivious to the presence of a group of familiar and well-liked teachers who *were watching* from afar (Dick Sanders, Bill Tynan, Joyce Butler, Mary Wamback, and me). To Nim, it seemed as if nothing *mattered* but *being reunited* with his original family.

When he *FINISHED GROOMING* Josh, Nim *TURNED* to Stephanie and her family and repeatedly *SIGNED* “*PLAY*”. In turn, each member of the family responded. Josh and Nim *CLIMBED* a tree together. Later, Jen-nie and Nim *CHASED* each other around the base of the tree. Stephanie and WER also got into the act by *running* with Nim. Nim *PLACED* himself between Stephanie and WER, *GRABBED* their hands, and *PULLED* them to and fro around the grounds of Delafield. All of this seemed to be an incredible treat for Nim. Even after *spending* more than an hour with Stephanie and her family, Nim was still smiling. I had seldom seen even brief smiles of the kind that almost *seemed* pasted on Nim’s face while he *was* with the LaFarge family. The only other times I *saw* NIM *smile* that way were during the first few seconds of *playing* with one of his favorite cats and during the first few minutes of a reunion with a returning caretaker. I do not recall any situation in which Nim’s smile *persisted* for so long or any time when he *dis-played* such unrestrained joy. 135-42.

Passage B

Even though I *exerted* considerable dominance over Nim and *was wise* to most of his tricks, there were times he *found* new ways to test me. One memorable incident occurred during February 1976, shortly after I *had begun* a session with him in his Columbia classroom. That session was my first opportunity to *spend* more than a few minutes with him in more than a week. I could not be sure whether it *was* my recent absenteeism from the classroom or a bad session with his previous teacher or both that *caused* the cool reception I *received* from Nim. Even though he *was well behaved*, he was unresponsive to my attempts to *engage* him in various activities.

One of the first things I *did* was *TO SEE* whether Nim *wanted to use* the potty. Since he *could not yet be relied on to sign* “*DIRTY*” every time he *needed to use* the potty, his teachers made a practice of *pointing* to the potty and *asking* “*DIRTY*?”. In response to my question Nim *WALKED* over to the potty, *PULLED DOWN* his pants, and *SAT* on the potty. I *CROUCHED DOWN* next to him and *PATTED* his back in praise of his good toilet habits. *Having been* away from the classroom for a week, I paid less attention than I *should have*.

In a flash Nim *RAN* out of the classroom and *OPENED* the door *leading* to the outside corridor. When I *had entered* the classroom complex, I had carelessly left that door unlocked. This was not the first time that Nim *had escaped* from the classroom. Because of his curiosity about the hallways and offices of Schermerhorn Hall, I instituted a security system that *called for* all teachers to *lock* themselves into the classroom complex. Not only should I

have followed my own directive *to lock* the doors to the classroom and the hallway, I should have also heeded the advice I *had given* to innumerable new teachers: Never trust Nim. Particularly when a teacher *was content* with his behavior, Nim would sense that the teacher *had lowered* his or her guard. Unless he *was reminded* that the teacher *was watching* him very carefully he would usually find a way *to exploit* any lapse of vigilance.

Catching Nim was no easy task, particularly since no one else from the project *was around*. Even though I *knew it would be difficult to catch* Nim by myself, I DECIDED AGAINST *enlisting* help from students and secretaries. Nim had previously caused enough of a disturbance among the department's secretaries, many of whom *wanted to have nothing to do with* him.

It took me more than ten minutes *TO CORNER* Nim at the end of a corridor. During that time he led me on a merry chase through the second- and third-floor corridors and stairwells of Schermerhorn Hall. Even when I *had cornered* him he was able *to keep* out of my reach by *hiding* underneath a table at the end of the corridor. Each time I *reached* under the table, Nim either squirmed out of my reach or tried *to bite* my hand. Finally, I SECURED a good grip around his wrist and with just enough of a twist, I was able *to persuade* him *TO COME OUT*. In the process I incurred my first and only bite from Nim.

I can still recall my anger as I MARCHED him back to the classroom. Nim watched me very carefully as we walked down the hallways, *looking for* another opening for escape. Unfortunately for him I had my hand wrapped tightly around his wrist, and I was not about *to relax* that grip until we got back to the classroom. After LOCKING both the inner and outer doors, I SAT DOWN with Nim *to see* what he *would do*. I hoped that he *would sign* “SORRY” and that he *would try to convince* me that he *intended to behave*. Instead he MAXIMIZED the distance between us and TRIED unsuccessfully *to open* the door.

I knew that the bite *was* a defensive response, but I still felt angry. This was the first time Nim *had bitten* me and the first time he *had tried to run away* from me. I felt that unless Nim *was made to understand* the strength of my anger he *might be encouraged to repeat* his behavior. After Nim's second attempt *to get* out of the room, I PICKED him UP and THREW him away from me. I was quite surprised by what *followed*. I had thrown him so hard that he ENDED UP HITTING the cinder block wall and not the carpeted floor, as I *had intended*. I quickly DISCOVERED that there *was* no reason *to feel* concerned that I *might have hurt* Nim. GETTING UP, he HALF SMILED and SIGNED “PLAY”, which I INTERPRETED as a request *to throw* him against the wall again. I OBLIGED a second time before I REALIZED that, far from punishing Nim, I *was engaging* him in a game of roughhousing, which he *loved*.

At that point I was tempted *to slap* Nim across the face. On other occasions I used that form of punishment after Nim deliberately *bit* somebody or

made a bad mess in the kitchen at Delafield. Nim's reaction to my slap was always one of instant terror. He screamed loudly and spun himself around, often throwing himself into a tantrum. I DECIDED to save hitting Nim for graver infractions. Instead, I tried a new form of punishment. Again, I THREW Nim against the wall but only to provide myself with an opportunity TO MAKE, from Nim's point of view, an unexpected exit from the classroom. Nim's response was instant panic. From the adjacent observation room I could see him banging on the locked door of the classroom. DISCOVERING that he could not open the door, he BEGAN TO SCREAM an ear-piercing scream. That was followed by a full-fledged temper tantrum. I watched and listened to Nim's temper tantrum as long as I could bear it. As much as it hurt me to see Nim so upset, I knew that the longer I delayed my return to the classroom, the more certain I could feel that Nim understood that I was angry at him.

When I REAPPEARED in the classroom, Nim TRIED to jump into my arms. To underscore his request to be reassured, he SIGNED "SORRY" and "HUG" many times and continued to whimper. I REPLIED by showing him the bite at the base of my thumb and signing "HURT". Nim STUDIED my wound and SIGNED "SORRY" repeatedly. Then I WALKED to the outer door and SIGNED "NO OPEN" repeatedly. Again Nim SIGNED "SORRY" and this time ADDED "HUG". At that point I PICKED him UP and ALLOWED him to hug me. 145-48.

3. "Subordination" and Temporal Sequentiality

Several researchers have commented on the relationship between "subordination" and sequential ordering. In Labov and Waletzky (1967) and in Labov (1972), it is definitional that "subordinate clauses do not serve as narrative clauses" (Labov (1972:362). This follows from their definition of narrative given above: narrative clauses are those whose order cannot be reversed without disturbing "the temporal sequence of the original semantic interpretation", but with most clauses considered "subordinate", their order relative to the main clause often CAN be reversed without disturbing the temporal sequence. As Labov puts it, "once a clause is subordinated to another, it is not possible to disturb semantic interpretation by reversing it". Thus, "it is only independent clauses which can function as narrative clauses" (1972: 362).

However, dispensing with the "reversability" criterion, other linguists have been inclined to consider certain "subordinate" clauses as part of the temporal sequence. One example is Polanyi-Bowditch (1976). In the narrative she discusses, the following two clauses are included as being part of the "temporal structure":

- (1) a. When she began to arrange the flowers in a bowl
 b. a small fly flew out.

It is clear that because the two events are presented in iconic order, it is reasonable to consider them to be part of the “temporal structure”. However, as McCleary (1982:8) points out, there is some difference between presenting them this way and, say, as a pair of co-ordinate clauses, we will return to this point below.

Reinhart (to appear), as mentioned above, has suggested that “syntactic subordination” is a *means* for distinguishing foreground and background. However, she also proposes to distinguish between “content” criteria for identifying foreground and background, primarily iconic temporal order, and “linguistic” criteria, that is, whether the clause is main or subordinate. Normally, she says, the two types of criteria coincide, but there may be cases where “the linguistic criteria can impose a selection of foreground and background which does not follow directly from the content criteria” (ms., p. 25). To illustrate, she takes the following portion from an oral narrative reported by Labov and Waletzky (1967) (with italicization reflecting the judgements of Hopper and Thompson (1980) as to what was foreground, which Reinhart accepts):

This was just a few days after my father had died, and we were sitting shive.
 And the reason the fight started ... *He sort of ran out in the yard* — this was
 way out on Coney Island — *and he started to talk about it*. And my mother
 had just sat down to have a cup of coffee. *And I told him to cut it out.*

Course kids, you know — he don’t hafta listen to me. So that’s when *I grabbed him by the arm, and twisted it up behind him*. When I let go his arm,
 there was a knife on the table, *he just picked it up and he let me have it*. And
I started to bleed like a pig...

Here it is worth quoting Reinhart:

The foreground units all consist of narrative clauses, i.e., temporally ordered sequences. The point is, however, that at least one of the background clauses also meets the definition of a narrative clause. This is the clause, *When I let go his arm*, in the second paragraph. This clause is ordered temporally after the event depicted in the preceding clause, and before the event depicted in the next foreground clause. So given only content and ordering criteria this should have been considered a foreground clause. But the reason it functions as background here is that it is marked syntactically as subordinate (ms., p. 26-7).⁴

From this quote, it is clear that Reinhart is taking Labov and Waletzky’s definition seriously: “foreground” can only include independent (main)

clauses which are temporally sequenced. It follows that if a clause is marked as "subordinate", then it must be part of the background. But this freedom to "play" with the foreground-background relations is only possible, she says, if the iconicity of the sequencing is left intact. That is, if clause A reports an event belonging to the temporal foreground sequence and clause B reports a temporally background event, then what cannot happen is this: A cannot be marked as syntactically subordinate to B. So while (2)a. may be quite acceptable, (2)b. is not:

- (2) a. The host was telling another joke. *Having already heard this joke many times before*, Rosa started to yawn.
- b. The host was telling another joke. *Starting to yawn/having started to yawn*, Rosa has already heard this joke many time before.⁵

Reinhart's paper gives us much to think about on the question of "subordination" and "foregrounding". She takes "foreground" to exclude "subordination" on definitional grounds, but she points out that the choice an author has between representing a temporally sequenced event as part of the "foreground" (i.e., as a "main" clause) or as part of the "background" (i.e., as a "subordinate" clause) is part of the artistry that makes a written text worth reading.⁶

According to Labov and Waletzky and Reinhart, then, foreground (narratives) clauses must not be syntactically dependent. But this exclusion by definition precludes the possibility of determining whether there is any *independent* relationship between "foreground" and "subordination". It is this question that the present section is intended to address.

To identify the temporally sequenced clauses, I simply tried to determine which predicates named a punctual event that followed the previous sequenced event and preceded the following sequenced event. But what counts as "temporally sequenced" or "on the time line" is not always a straightforward matter. Let me disucss one recurring type of problem which arises in determining temporal sequence in narrative discourse.

The major type of difficulty in applying the criterion just given is that there are predicates which appear superficially to be part of the temporal line of the narrative, but which in fact serve to summarize either the previous few temporally sequenced predicates or the following few temporally sequenced predicates. In Passage A we can find an example of each situation. Consider the following extract:

- (3) Only after he *STOPPED SMILING* and *SHRIEKING* did he GO to Stephanie and HUG her. That hug was also interrupted by additional shrieks. Quite a lot of noise from a normally silent chimpanzee!

After *spending* about fifteen minutes with Stephanie, Nim WENT over to WER, Josh, and Jennie, and HUGGED each of them in turn.

The predicate in question is *spending*, which might appear at first glance to be part of the temporal sequence, since it seems to follow the preceding event of hugging Stephanie and precede the following event of going over to WER, Josh, and Jennie. However, closer inspection reveals that this *spending* is actually recapitulative, and summarizes the preceding events of going, hugging, and shrieking.

The other type of situation, where a predicate serves to provide an advance summary, can be seen in the following excerpt from the third paragraph, where Terrace summarizes what Nim did with each member of the family:

- (4) In turn, each member of the family responded. Josh and Nim CLIMBED a tree together. Later, Jennie and Nim CHASED each other around the base of the tree. Stephanie and WER also *got* into the act by *running* with Nim. Nim PLACED himself between Stephanie and WER, GRABBED their hands, and PULLED them to and fro around the grounds of Delafield.

The verb *responded* in the first sentence of (4) is not part of the temporal sequence because it anticipates the next several temporal events.

For the purposes of this discussion, then, predicates which summarize preceding or following events will not be considered as part of the temporal sequence.

Because one of the criteria for “temporally sequenced” is punctuality, durative predicates also do not count as part of the temporal sequence. Thus durative forms such as *watched*, *walked*, and *looking for* in the following excerpt from Passage B are not considered as temporally sequenced:

- (5) I can still recall my anger as I MARCHED him back to the classroom. Nom watched me very carefully as we walked down the hallways, looking for another opening for escape.

While the notion of “temporal sequence” is admittedly somewhat of an

idealization, then, it does seem possible to retain it as a framework for analyzing narrative discourse by taking it to be rather strictly the set of predicates denoting punctual events such that each one of these punctual events follows the preceding one and precedes the following one. As mentioned above, the predicates which are temporally sequenced by this definition are those which appear in capital letters in Passages A and B.

Before we can move to a discussion of the relationship between temporal sequencing and "subordination", however, I must first make precise just what I mean by "subordination", and reveal why I am using it in quotes.

Characterizing the category "subordinate clause" in a given language is not a straightforward matter. In view of the highly composite nature of the items generally included in this category, of the lack of agreement among grammarians as to what should be included, and of the difficulty in achieving any cross-linguistic comparability with the term⁷, it seems appropriate to define "subordinate clause" carefully before using it. My definition will be extensional. I will be discussing four types of grammatically dependent clauses by name; hereafter, when I use the term "subordinate clause", it will refer to the heterogeneous set which includes all these types.

In the passages given above, each of the underlined predicates occurs in a clause type which is dependent on another clause in one of these four ways:

1. it is a complement to another predicate, as in:
 - (6) Nim would sense that the teacher *had lowered* his or her guard.
2. it is non-finite, as in:
 - (7) Not only should I have followed my own directive *to lock* the doors to the classroom and the hallway, ...
 - (8) ...he suddenly CAME UPON Stephanie and her family *sitting* in a semicircle
3. it begins with a conjunction that marks it as an adverbial clause, as in:
 - (9) Particularly when a teacher *was content* with his behavior, ...
4. it is in a relative clause (including non-restrictives and "free relatives"), as in:
 - (10) I do not recall any situation in which Nim's smile *persisted* for so long

Any clause which exhibits one of these four types of dependency, then, will be called a "subordinate" clause for the purposes of the remainder of this discussion.

Having shown what I mean by "temporal sequencing" and "subordina-

tion", I will proceed to the hypothesis and the discussion of the results.

Unlike Labov and Waletzky, I do not define away the possibility of subordinate clauses' predicates being part of the set of temporally sequenced predicates, and unlike Reinhart, I do not call the set of temporally sequenced clauses the "foreground". The hypothesis, then, is a two-part one:

- a. The vast majority of subordinate clause predicates will not be on the time line.
- b. Those which are on the time line are doing other discourse work in addition to naming a temporally sequenced event.

Let us consider each of these points in turn.

Point a. is intuitively correct, and is easy to verify. Table 1 presents the relevant numbers:

Table 1

Subordinate predicates on and off the time line

	ON TIME LINE	OFF TIME LINE	TOTAL
PASSAGE A	5 (= 11%)	43 (= 89%)	48 (= 100%)
PASSAGE B	12 (= 11%)	101 (= 89%)	113 (= 100%)

Table 1 shows that part a. of the hypothesis is strongly and consistently confirmed for these two passages: 89% of the subordinate predicates, as here defined, occur in non-temporally sequenced clauses.

Part b. of the hypothesis deals with those subordinate predicates that can be counted as part of the temporal sequence: in the passages given above, these are the predicates which both appear in capital letters (to show that they are temporally sequenced) and are underlined (to show that they occur in subordinate clauses). Part b. of the hypothesis predicts that it will always be possible to demonstrate that these are performing some other discourse function in addition to indicating a successive event in the temporal sequence. To show this, we must look at each case in turn.

Let's consider Passage A first. In this passage, it happens that all of the subordinate temporally sequenced predicates are in adverbial clauses. Recall that Reinhart (to appear) suggested that writers can code "foreground" events with "background" (i.e., subordinate) clauses (her example being the *When I let go his arm* from the Labov and Waletzky story) as long as the iconicity in order is maintained. She goes on to say that there is much freedom on the part of the writer as to which events to represent as "part of the

foreground" and which not to; the choice, she says, "is subject to various (widely studied) aesthetic and functional, or perceptual considerations and it is part of what enables narration to be a work of art" (p. 29).

What I would like to do here is to pursue this implicit line of reasoning: without making the assumption-laden statement that writers may choose to represent foreground events as "part of the background", we can neutrally ask WHY in fact a writer does choose to represent a temporally sequenced event with an adverbial clause, thereby making it dependent on another clause?

Part b. of our hypothesis predicts that the author is always trying to do something *else* in addition to conveying temporal order. That is, there are other discourse-organizing principles involved in constructing texts besides those of temporal ordering. Thus, in the third paragraph, we have the following sentence:

- (11) Only after he *STOPPED SMILING* and *SHRIEKING* did he GO to Stephanie and HUG her.

In terms of temporal sequencing, Nim's ceasing smiling and shrieking preceded his going to Stephanie and hugging her. But Terrace also wants to convey the intensity of Nim's reaction to Stephanie and her family, and one way he accomplishes this is to frame these sequential events such that the hugging (Nim's normal first reaction) is reported to have been possible only after he'd calmed down enough to stop smiling and shrieking. Thus a dependency of one event on the other has been created which cuts across their temporal relationship.

Similar in principle though different in detail are the *SAW* in the first paragraph and the *CAME UPON* at the end of paragraph two; the sentences in which these occur are give as (12) and (13):

- (12) Nim was mildly excited when he *SAW* me and SIGNED "PLAY".
(13) But none of the reunions I *had witnessed* or *heard about* between Nim and Laura, Stephanie, Marika, or Walter had prepared me for the intensity of Nim's reaction when he suddenly *CAME UPON* Stephanie and her family *sitting* in a semicircle near one of his favorite trees.

In the case of *SAW* in (12), Nim's seeing Terrace and signing "PLAY" took place consecutively after Terrace asked Dick Sanders to walk with Nim towards the reunion site. But Terrace is relating Nim's seeing him as being simultaneous to Nim's being excited rather than as being consecutive to the

asking of Dick Sanders, and this is reflected in the coding of the punctual and temporally sequenced *SAW* with a *when* clause.

Exactly the same explanation seems appropriate for *CAME UPON* in (13): though *CAME UPON* occurs temporally after *SAW* and *SIGNED*, the two previous temporally sequenced events, Terrace is here describing the simultaneity of the intensity of Nim's reaction and his coming upon Stephanie and her family. Once again, this simultaneity is what is being coded rather than the temporal relationship between the sequenced event and the previous sequenced events.

In these instances of temporally sequenced events being reported in adverbial clauses, then, we can make a case for these clauses having other discourse connections to make besides the temporal linking one. Support for this position can be found in the fact that in both (12) and (13), there is some distance between the event verb in question and the previous sequenced event verb, five verbs in the case of *SAW*, but sixteen verbs in the case of *CAME UPON*.

This point about distance between two temporally sequenced event verbs seems to be involved in the explanation of the last instance of a temporally sequenced event being represented by an adverbial clause in Passage A. This is the first verb in the last paragraph, *FINISHED GROOMING*.

- (14) When he *FINISHED GROOMING* Josh, Nim TURNED to Stephanie and her family and repeatedly SIGNED “PLAY”.

In this case, there has been some intervening descriptive material, unrelated to the temporal line, between the predicate in question and the preceding temporally sequenced event predicate, a discussion of how impressive Nim's reaction to the LaFarges was in view of the other favorite teachers on the scene. Here what the adverbial clause seems to be doing that couldn't be done by an independent clause is to relate the clause *following* it back to the ongoing temporal line.

The ability of adverbial clauses to perform this relating-back function has been described by Longacre in Longacre and Thompson (1985) as the “cohesive” function of front-placed adverbial clauses. Chafe (1984), has described the same phenomenon in terms of front-placed adverbial clauses serving as “guideposts” to information flow, “providing a temporal, conditional, causal, or other such orientation for the information in the upcoming main clause” (p. 444). Following Fries (1983), I have talked about the way in which such “orientation” is provided in terms of such a preposed adverbial

clause's role in a chain of expectations in Thompson (1985), and a similar sort of explanation seems to hold here: in a narrative, the unmarked expectation is that the temporal line will be returned to after a digression of any kind. One function of adverbial clauses on the temporal line in a position preceding the next temporal event, then, would be to respond to this expectation by explicitly relating that next event to the already-established temporal line, and that is just what is happening here. In example (14), which opens the final paragraph of the passage, our attention is brought back to the time line by the adverbial clause *When he FINISHED GROOMING Josh*. The preceding temporal event was Nim's grooming Josh, seven verbs back in the text. Then Terrace tells us about the other teachers observing the reunion. The *when* clause in (14), by directly mentioning the grooming of Josh again, orients us back to the time line in a way that a simple independent clause could not have done.

This "orienting" function, then, is perhaps the most prominent function of initial adverbial clauses. The reason why they are able to function this way, I suggest, is precisely because a temporally sequenced event is being coded in a *marked* form, that is, in a form which makes it grammatically dependent on another clause.

So far, then, we have seen that the five cases of subordinate clause predicates occurring on the time line in Passage A provide strong support for Part b. of our hypothesis, that such predicates are always demonstrably performing additional discourse work besides simply reporting the next event in the temporal sequence. Let us now consider Passage B.

Passage B is somewhat more complex, in that the types of subordinate clause predicates form a more diverse set. It will be useful to consider each type separately.

Two of the twelve subordinate time-line predicates in Passage B are in initial adverbial clauses of the type we discussed just above for Passage A. The first is the verb *REAPPEARED* at the beginning of the last paragraph. The sentence in which it occurs, after a description of Nim's panic at being left alone in his classroom, is this:

- (15) When I REAPPEARED in the classroom Nim TRIED to jump into my arms.

That this initial *when*-clause orients the reader back to the unexpected exit Terrace had previously made from the classroom is obvious. Its orienting function is precisely parallel to that of the initial adverbial clauses discussed for Passage A.

The second case of a time-line predicate in an initial adverbial clause is the one found in the middle of the story, where Terrace has marched Nim back to the classroom:

- (16) After *LOCKING* both the inner and outer doors, I SAT DOWN with Nim *to see what he would do.*

Once again, the orienting-back function here is clear: it carries the reader back to the lengthy discussion Terrace has provided about the need for all teachers to lock themselves into the classroom to guard against just such escapes at the one he is describing.

Note, incidentally, that the three "initial" adverbial clauses we have just considered in (14), (15), and (16), that is, those which precede the main clause with which they are associated, in addition to this cohesive function as predicted by Fries, Longacre, Chafe, and Thompson, all also contain *lexical* material which is recapitulative, which provides "cohesion", in the sense of Halliday and Hasan (1976) and Longacre and Thompson (1985), with previous material (*FINISHED GROOMING* in (14), *REAPPEARED* in (15), and *LOCKING* in (16)). This is clearly not the case with ordinary main clause temporally sequenced predicates, which do not "look back" at all, but simply report the next event in the sequence.

Functioning very similarly to these initial adverbial clauses are the initial participial clauses in the following examples:

- (17) *GETTING UP*, he HALF SMILED and SIGNED "PLAY",...
 (18) *DISCOVERING* that he *could not open* the door,...

Just as we saw for (14)-(16) above, these participials both revert back to earlier events in the text: *GETTING UP* in (17) clearly refers back to having been thrown against the wall, while the *DISCOVERING* clause in (18) refers back to the locked door.

Two other adverbial clause temporally sequenced predicates in the data are of the type illustrated by *when he suddenly CAME UPON* in Passage A (example (13)). That is, some other temporal relation is being described besides the sequence of the predicate in question with the previous and following events. Here are the examples from Passage B:

- (19) I can still recall my anger as I *MARCHED* him back to the classroom.
 (20) I OBLIGED a second time before I *REALIZED* that, far from *punishing* Nim, I was *engaging* him in a game of roughhousing, which he *loved*.

In both these cases, Terrace is indicating another temporal relation: in (19), it is simultaneity with the anger, and in (20), it is the fact that it took a second throwing before he realized how Nim was manipulating him.

Another group of subordinate predicates on the time line consists of infinitives:

- (21) One of the first things I *did* was *TO SEE* whether Nim *wanted to use* the potty.
- (22) It took me more than ten minutes *TO CORNER* Nim at the end of a corridor.
- (23) Finally, I SECURED a good grip around his wrist and with just enough of a twist, I was able *to persuade* him *TO COME OUT*.
- (24) Again, I THREW Nim against the wall but only *to provide* myself with an opportunity *TO MAKE*, from Nim's point of view, an unexpected exit from the classroom.

Each of these four cases illustrates a grammatical consequence (infinitivization) of having chosen a means of expression which reports more than just that an event happened. In the case of (21), Terrace is not simply saying that he determined whether Nim wanted to use the potty, but that it was one of the *first* things he did with Nim. In the case of (22), once again, Terrace is clearly not simply narrating that he cornered Nim; that could have been done with an independent clause. He is including in one grammatical construction the amount of time it took along with the event being reported, which results in infinitivization. And similarly in (23), Terrace is not just announcing that Nim came out, but that it took some persuasive tactics on his part; in these cases, the grammatical consequence of choosing to express more than just that the event happened results in a construction in which the time-line predicate appears in the form of an infinitive. Finally, in (24), we see a substantial amount of grammatical complexity: the predicate *TO MAKE an unexpected exit* is embedded as an adjunct to the noun *opportunity*, which is itself part of an infinitival purpose clause. In this way, the author can relate his leaving the classroom causally to the third occurrence of throwing Nim against the wall.

Similar sorts of explanations are available for the last two subordinate predicates which are temporally sequenced. The first is found in the non-restrictive relative clause in this sentence:

- (25) ... he half smiled and SIGNED "PLAY", which I *INTERPRETED* as a request *to throw* him against the wall again.

The second is in the complement to the degree adverb *so hard* in this sentence:

- (26) I had thrown him so hard that he *ENDED UP HITTING* the cinder block wall ...

Once again, both of these examples are straightforward cases, it seems to me, of the principle that subordinate predicates on the time line are doing other discourse work than just reporting an event. (25) illustrates the dual role of the predicate *INTERPRETED* as both the next temporal event and as part of the non-restrictive relative clause characterizing Nim's behavior. (26), similarly, shows the dual role of *ENDED UP HITTING* as the next temporal event and as part of the clause indicating how hard Nim had been thrown.

4. Conclusion

What we have seen, then, in this paper is that the temporally sequenced events in a written narrative need not form a homogeneous class in terms of their grammatical representation. While the majority are coded by independent clauses, a significant subset are “subordinate”. In each of these cases I have shown how the use of a subordinate clause allows the writer to accomplish a text-creation goal *in addition* to the obvious one of maintaining the temporal line. As Reinhart says, this is certainly part of what makes a text a work of art; I would suggest that it is also part of what makes a text readable. A strictly linearly organized written narrative text would be not only boring, but hard to attend to, for the well-known reasons discussed in the gestalt perception literature. In written narrative, then, in a language with a well-developed written tradition, some use of subordinate clauses on the time line seems to correlate with the multiple purposes to which a writer puts temporal sequenced predicates.

NOTES

1) I wish to thank the following people for their help in making suggestions for improving an earlier draft of this paper: Marianne Celce-Murcia, Hyo Sang Lee, Robert Longacre, Carol Lord, Jim Martin, Susan Mordechay, Mickey Noonan, R. McM.Thompson, Russell Tomlin, Benji Wald, and members of my UCLA seminar on clause combining, Spring, 1984. This paper has benefitted greatly from their input, even though some of them may not recognize it.

2) Of some interest to our attempts to understand “importance” in discourse is Reinhart's position that “foregrounding” (for her, the material on the time line) is not related to “importance” in a discourse: “there is no reason to expect that the “narrative” temporal sequence should be more

important...than the non-narrative units" (ms., p. 11). Her arguments for their independence rest on the perceptual *neutrality* of the gestalt figure-ground distinction, where the figure need not be more "important" than the ground. I find these arguments persuasive, and I think they strongly support a careful distinction between what linguists have meant by "foreground" (or temporally sequenced clauses) and "importance". Chvany (to appear) takes a similar position.

3) Because I am using capitalization to indicate temporally sequenced predicates, I have enclosed the capitalized signed words in the original text in quotes for ease of reading.

4) A reasonable analysis of the sentence

(i) So that's when I grabbed him by the arm, and twisted it up behind him.

in this passage might well also posit its *when* clause as a subordinate, and thus, for Reinhart, background, clause, but she does not consider this possibility.

5) Note, incidentally, that the participial clause type with which Reinhart chooses to illustrate her point about "subordination" is precisely one about which there will be little agreement as to whether it is "subordinate" or not. Here the term "dependent" might have been a better choice.

6) There is much else in this paper of great interest, especially with respect to the issue of gestalt perception and the organization of discourse.

7) For discussion see Haiman and Thompson (1984) and Mattheissen and Thompson (to appear) and references cited there.

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LINGUISTIC REFLECTIONS OF COGNITIVE EVENTS

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1. Introduction

This paper examines the relationship between the thematic organization of narrative discourse production, as reflected in its episodic organization, and the syntax of reference, the differential use of nominal and pronominal form in discourse production. It is argued, using data drawn from two independent data sources, that the syntax of reference is directly a function of episodic or thematic boundaries at a relatively local level. The episodic boundaries in turn can be seen as a speaker-based re-orientation of attention during the on-line process of discourse production.

Background. Investigation of the syntax of reference and its functions, particularly in discourse comprehension, has been focused in a variety of areas: syntactic constraints on reference, semantic constraints on reference, formal text and discourse constraints, cognitive constraints, and so on. Van Dijk and Kintsch (1983:161-182) provide a detailed survey of psycholinguistic research in this area, while Clancy (1980) offers a careful review of linguistic research in this area.

There are two major, and interrelated, theoretical orientations taken in the study of the function of the syntax of reference. One orientation, which can be called the recency or distance approach, considers the alternation between noun and pronoun to be primarily a function of time (recency of reference), which is manifested in the text artifact by the number of clauses or propositions intervening between a given referent and its antecedent (distance). Relying primarily on quantitative measurement of referential distance (the number of clauses between subsequent mentions of a given referent), Givón and his associates (Givón 1983; Givón, Kellogg, Posner, and Yee 1984, for instance) have shown convincingly an iconic relationship holding between referential distance and the amount of coding material used to

maintain reference. As referential distance increases, so does the amount of coding material required to maintain reference.

Clancy (1980) offers a similar conclusion in her analysis of the pear stories data (Chafe 1980) for both English and Japanese speakers. Within the psychological literature, Clark and Sengul (1979) and others have conducted studies of discourse comprehension in which the time of retrieval of referents in pronominal form increases as the distance between referent and antecedent increases.

The recency/distance approach for referential syntax is attractive in its relative simplicity, and does capture well some important generalizations about languages and groups of speakers. But there are two classes of counterexamples this model fails to address. First, it is clear that full nouns can be used to refer to an antecedent even only a single clause away, and such exception can occur even in cases in which ambiguity resolution is not at issue. Second, it also appears that in some cases pronominal reference can be sustained for more than a clause or two. Thus, while a recency/distance approach does address well general characteristics of the syntax of reference, it does not account for the full range of use exhibited by individuals engaged in discourse production and comprehension.

The second orientation, what can be called the episode/paragraph model, considers the alternation between noun and pronoun to be a function of the limited capacity of working memory, which is manifested in the text artifact primarily through its paragraph, or episodic, organization. Hinds (1977, 1979) argues this for Japanese discourse; van Dijk (1982) also considers the importance of episodes to the syntax of reference. Kintsch and van Dijk (1978, 1983) offer a detailed treatment of subject and topic interaction with the syntax of reference in which pronominal form is linked with the maintenance of reference across an adjoining clause but mediated by a higher level thematic macroproposition. Givón (1983) has also discussed the role of thematic organization on the syntax of reference. More recently, Fox (1984) provides convincing empirical evidence from written narrative to support an episode/paragraph approach to the syntax of reference.

One important complication of the episodic/paragraph approach considers the alternation of noun and pronoun to be due to differential "focusing", or foregrounding, of a given referent. There are a number of important studies in the psychological, linguistics, and artificial intelligence literatures that pursue this complication: Reichman (1981), Marslen-Wilson, Levy, and Tyler (1982), Tyler and Marslen-Wilson (1982), Chafe (1974, 1976, 1984),

Grosz (1977), among others. These studies argue that pronouns are used to make reference when a particular referent is in a state of high focus, or "foregrounded", in a given linguistic context (presumably something like a conceptual paragraph). Full NPs are used for referents in lower focus. Chafe's notion of 'activation' (Chafe 1974, 1976, 1984) represents a very similar point of view within linguistics.

The episode/paragraph approach, with its accompanying focus or foregrounding augmentation, is attractive in two major respects. First, it shows a greater sensitivity to subject or text specific variation in distance between reference and antecedent. Second, it articulates a natural connection between a particularly important linguistic unit, the paragraph, and its psychological correlate, the limited capacity working memory.

The weakness of this approach also lies in two areas. First, the critical theoretical linguistic notions, — paragraph, episode, and focus, — are weakly defined and generally resistant to empirical analysis. Second, and not independent of the first weakness, the practical identification of such notions in genuine text data depends on relativistic thematic notions of relevance and salience, which are similarly vague at the present moment (van Dijk and Kintsch 1983:171; but see also Tomlin 1984, 1985).

This paper argues for the episode/focus approach of the functional syntax of reference. It is demonstrated that during the on-line task of discourse production subjects will use a full noun to reinstate reference across an episode boundary, and they will use a pronoun to maintain reference within a particular episode. The recency/distance approach is specifically rejected for it provides an inadequate treatment of the present experimental data.

There is one additional parameter affecting the syntax of reference which cannot be ignored: ambiguity resolution. Full nouns are clearly used to maintain reference when there exists a possible ambiguity of referential interpretation by the listener. Ambiguity resolution will not be considered at all in this study, except to filter from the data some rather straightforward instances, switch-subject references.

Finally, it should be pointed out that almost all studies of the syntax of reference focus on strategies of the listener, on discourse comprehension. The historical reason for this is clearly methodologically grounded: comprehension studies lend themselves better to needed experimental control. Still, it is important to understand the strategies used by the speaker in producing discourse, for it is by no means necessary that comprehension and production strategies be the same. This study examines the syntax of reference from the

point of view of the speaker.

Hypothesis. The general hypothesis be considered here can be found in (1):

(1) General hypothesis: The syntax of reference in discourse production is tied directly to psychological processes of attention as reflected in the episodic organization of natural discourse data.

The basic claim of this hypothesis is that the alternative use of a noun or pronoun in discourse production is a function of attention allocation by the speaker. During the on-line process of discourse production, the speaker uses a pronoun to maintain reference as long as attention is sustained on that referent. Whenever attention focus is disrupted, the speaker reinstates reference with a full noun, no matter how few clauses intervene between subsequent references.

The linkage of the syntax of reference to processes of attention is, in turn, linked to the episodic organization of discourse production. Episodes, or following Lackstrom, Selinker and Trimble (1973) what might be called conceptual paragraphs, represent the next highest structural unit of discourse organization after the sentence. The episode is governed by a paragraph level theme or macroproposition (van Dijk and Kintsch 1983, *inter alia*), which can be sustained and elaborated upon as long as attention is directed toward it. Episodes in prototypical narrative discourse probably average some five to eight propositions in length, but such an average, at best representing only a structural definition of episode, does not define the episode, it merely characterizes it in its typical realization. Episodes are defined ultimately by the sustaining of attention on a particular paragraph level theme, a pragmatic instantiation of a rhetorical act.

Two different sorts of data are used to explore the general hypotheses in (1). There is experimental data, in which subjects created narratives in response to the presentation of visual slide sequences. And, there is elicitation data, in which subjects described on-line a short animated video-taped cartoon. (Representative samples of each type of discourse can be found in Appendices A and B.)

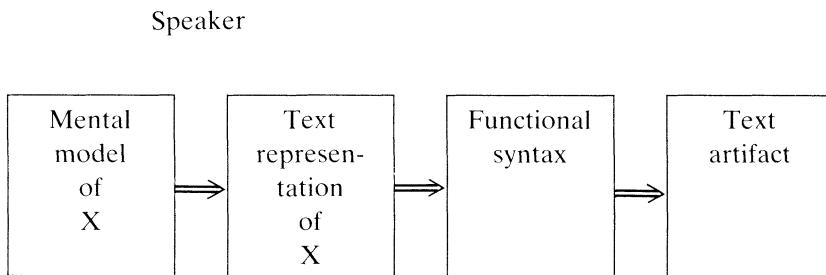
In each data set, it is shown that the use of noun and pronoun form is very much a function of episodic boundaries, where episodic boundaries are defined and identified explicitly and independently of linguistic information. Further, because the episodic units in each discourse type are of significantly different length, it is shown that an episodic/focus approach to the syntax of reference provides a more complete accounting for the use of nouns and pro-

nouns in the collected data than does the recency/distance approach.

2. Theoretical Model of Discourse Production

Figure 1 presents a simplified model of the discourse production process. The discussion here is intended to ground rather generally the specific data analyses which follow. This outline in general follows the more complete descriptions of van Dijk and Kintsch (1983); interested readers are referred to that work for a more detailed discussion.

Figure 1. A simplified cognitive model for discourse production.



In this process, the speaker has in mind a particular mental representation of some event or other subject matter, which he intends the hearer to create during the complementary process of discourse comprehension. To assist the listener create this mental representation, the speaker engages in discourse with the listener, creating in on-line processing a text representation which reflects the speaker's estimates of the listener's familiarity with the subject matter (information organization) and the speaker's attempts to help the listener appreciate some particular point of view toward that subject matter (thematic organization).

The text representation is operated on by the syntax of the particular language used to produce the specific text artifact. Many local syntactic alternations, — constituent ordering, voice, the syntax of reference, — are conditioned by local pragmatic factors (Givón 1983, Chafe 1980, and so on), which are, in turn, a function of higher level pragmatic and rhetorical factors (van Dijk 1981, 1982; van Dijk and Kintsch 1978, 1983; Rumelhart 1975, Mandler and Johnson 1977, and so on).

Within this sort of general model, local syntactic alternations, like the

pronoun-noun alternation considered here, may turn out to be linguistic codes which facilitate the cognitive processes required of the listener to build the intended mental representation. Some syntactic alternations facilitate retrieval of information from memory; other syntactic alternations facilitate selective focusing and emphasis on information during the model building process.

Empirical investigation of these local syntactic alternations in discourse production entails a number of basic requirements. First, empirical study of discourse production requires establishing a database of reasonably comparable text artifacts produced by an appropriate number of subjects. Second, it requires that the basic analytical concepts utilized receive independent definition, both conceptual and operational. Third, it requires sensitivity to, and some means for filtering out, irrelevant data, or 'noise'. And, fourth, it prefers results that account for the productions of individuals within groups to those that present only group characteristics.

These four requirements are met in the present study. Data were drawn from two diverse sources: (1) on-line oral narrative production created by three different groups of ten subjects describing a set of slide pictures, and (2) on-line oral descriptive discourse production produced by ten subjects viewing an animated videotape. The basic analytical units, — proposition and episode —, are defined below. One source of 'noise', ambiguity resolution, is systematically and explicitly filtered from the data. And, finally, the hypothesis proposed here accounts well not only for the overall groups considered but for the performance of each specific individual.

3. Analytical Categories and Discourse Production Measurements

Analytical categories

Episode. An episode is defined conceptually as a semantic unit in discourse organization consisting of a set of related propositions governed by a macroproposition or paragraph level theme. It represents sustained attentional effort devoted to the macroproposition and endures until attention is diverted; that is, it is sustained until an episode boundary is reached.

Episode boundaries represent major breaks, or attention shifts, in the flow of information in discourse. In typical narrative discourse, major changes in time, place, or characters correspond to episode boundaries (see van Dijk and Kintsch 1983:204), though they do not themselves represent such boundaries. Similarly, in procedural or expository discourse major changes in

action or argument correspond to episode boundaries.

For experimental work on discourse production, such text-oriented symptoms of attention shifting cannot be utilized in identifying episodes in discourse data without risking circularity in functional argumentation (Tomlin 1983, 1984, 1985). For the present study, episode boundaries are identified following the general insights on event perception by Newtson and his colleagues (Newtson 1973, Newtson and Engquist 1976, Newtson et al. 1977). Episode boundaries are identified here as major disruptions in the flow of the non-linguistic visual material perceived by experimental subjects. For the experimental data, episode boundaries in discourse production are triggered by attention shifts caused by the perceptual disruption of the slide projector shutter release cycle. For the elicitation data, episode boundaries in discourse production are triggered by major thematic breaks, operationally defined for this study as video cuts accompanied by major scenery changes (Monaco 1981, Tomlin 1984).

Proposition. Discourse production is measured here in part in terms of propositions. A proposition is defined here as a semantic unit composed of a predicate plus its arguments for which a truth value can be determined. The proposition, as the term is used here, also represents a basic unit of memory in human cognition (Anderson and Bower 1973, Anderson 1980) and in discourse comprehension and production (Kintsch and van Dijk 1978, Kintsch 1973, van Dijk and Kintsch 1983).

The identification of propositions in the collected discourse data is similarly straightforward. An utterance in the text data counts as a proposition if and only if it realized by a full clause or by a partial clause for which missing arguments are readily recoverable. Embedded complement clauses are not counted as separate propositions but as arguments of the matrix clause they are embedded in. Infinitive and participial clauses in adjunct relations in sentences are counted as realizing independent propositions. Nominalizations and other complex phrasal constructions are not unpacked into sets of propositions.

Ambiguity resolutions. In discourse production data involving multiple characters undistinguished by gender, numerous opportunities arise for possible ambiguous reference. In such cases, full nouns are used to provide sufficient information to the listener to avoid actual ambiguity. Such cases of ambiguity resolution, if simply ignored, would result in an unfairly conservative test of the specific hypothesis examined here, for this additional parameter would represent a third and intervening variable for data analysis. There-

fore, clear cases of ambiguity resolution are not counted in the analyses below. Clear cases are explicitly defined as instances of switch subject reference only (Haiman and Munro 1983), even though other cases no doubt exist. The example in (2) illustrates a filtered case:

(2) Even condition: 009

Episode Proposition Text

8	21	The ape looks down at the dog
→8	22	and the dog starts to run away/
9	23	And then the dog is lying dead
10	24	and the ape looks like he's going to eat him
11	25	and along come this dinosaur/

Discourse production measurements

Absolute production. Raw measurements of discourse production were collected simply by counting the number of propositions produced in each protocol and the number of episodes described.

Discourse density. Refined density measurements are calculated by computing the proportion of propositions to episodes.

These two sets of measurements permit one to determine the variability in production performance of individual subjects. Subjects within each data type produce comparable amounts of discourse, with little individual variation in these measurements. Subjects compared across data types produce significantly different amounts of discourse.

Referential distance (Givón 1983). Referential distance is calculated by counting the number of clauses which intervene between a given referent and its last antecedent. Though clause and proposition are distinct linguistic entities, there is no practical significance for this study in counting clauses rather than propositions.

Referential distance measurements permit a good test of the recency/distance approach by allowing detailed comparative figures on the general use of nouns and pronouns within each data type and, more crucially, between the data types.

Episode boundary results: hits and misses. Data were collected on the proportion of instances of referential syntax consistent with (hits) or inconsistent with (misses) the general hypothesis. For a given referent, the syntactic form represents a hit if and only if it is a full noun and the first mention of the referent after an episode boundary, or if it is a pronoun and not the first men-

tion after an episode boundary. The syntactic form represents a miss if and only if it is a full noun and not the first mention after an episode boundary (excluding filtered out ambiguity resolutions), or if it is a pronoun and is the first mention of the referent after an episode boundary.

4. The Experimental Data

The basic idea for this experiment was to stimulate artificially episode boundaries for subjects engaged in narrative production for a slide picture sequence. It was assumed that the shutter release cycle of the slide projector represented a sufficiently strong perceptual disruption for the subject that the subject would be forced to re-orient attention in order to continue with the narrative production task. Nouns would be used to reinstate reference on first mention after the forced boundary, independent of the amount of preceding discourse and independent of where in the structural organization of the slide sequence the episode boundary was placed. Pronouns would be used to maintain reference on subsequent mentions until the next episode boundary is encountered. This is exactly what happened.

Method

A set of twenty-one slide pictures was presented to three different groups of ten subjects. A representation of these slides can be found in Figure 2. Each subject was asked to produce a story based on the slides presented as they appeared. Subjects self-paced through the task.

One group, the singles condition, saw each slide individually, one at a time. The second group, the odd condition, saw slide one alone and then the remaining slides in pairs. The third group, the even condition, saw slides one and two together and then the remaining slides in pairs, except for slide 21 which was presented singly.

Results

Discourse density measurements. In absolute terms, subject in the singles condition produced about twice as much discourse as did subjects in the other two groups. Subjects in the singles condition averaged 54.36 propositions for the task, or 2.59 propositions per slide. Subjects in the other two conditions averaged only 29.92 propositions for the task, or 1.43 propositions per slide.

More interesting, however, is to see that each group produced the same density of production when propositions are averaged per episode. The graph in Table 1 displays the discourse density measurements for each of the three

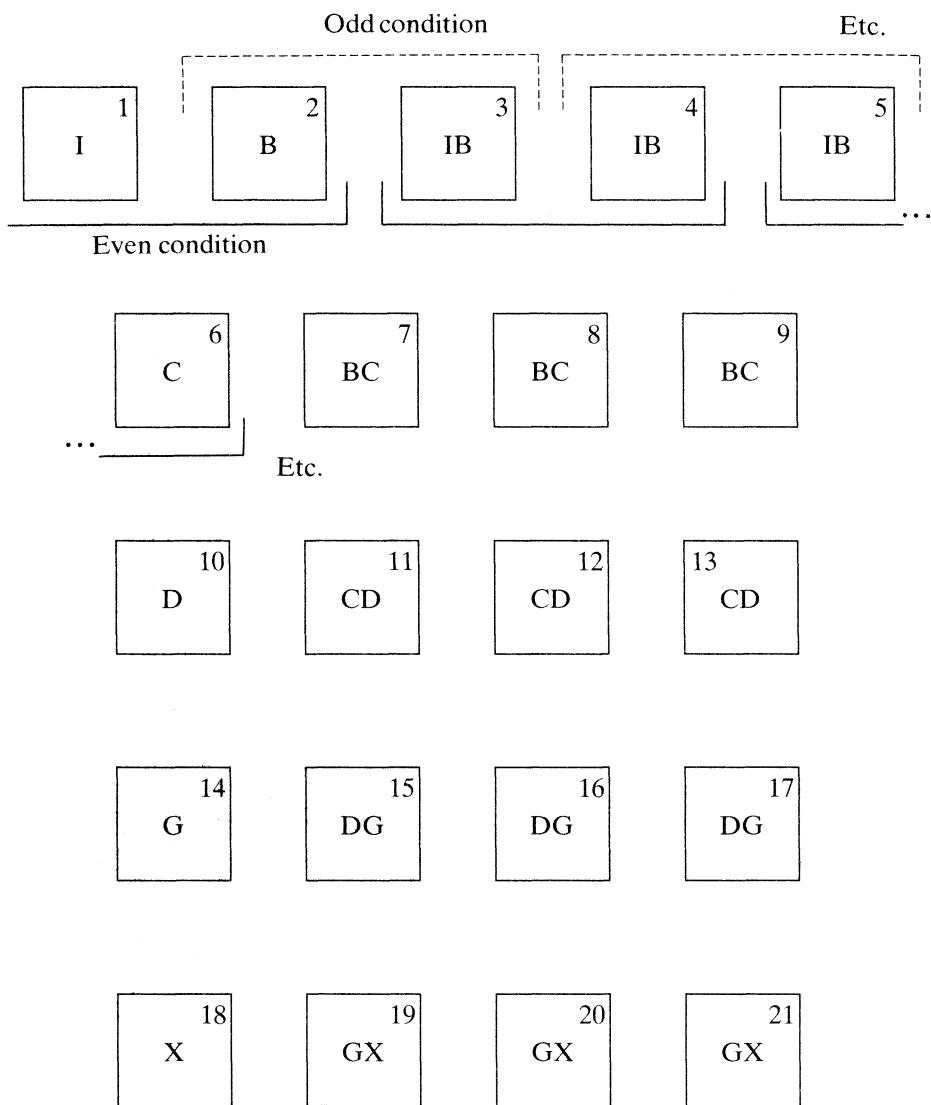


Figure 2. A representation of the stimulus slides (I= flying insect, B= bird, C= cat, D= dog, G= gorilla, X= dinosaur/dragon). In singles condition, each slide seen separately. In odd condition, slide pair denoted above by dotted line. In even condition, slide pair denoted above by solid line.

groups. There is no statistically significant difference among or between the three conditions, as measured by the Kruskal-Wallis test for non-parametric analysis of variance ($p < .05$).

These results are important in that they show that subjects in each of the three conditions are responding to the discourse production task in comparable ways. They provide good grounding for the comparisons which are described below.

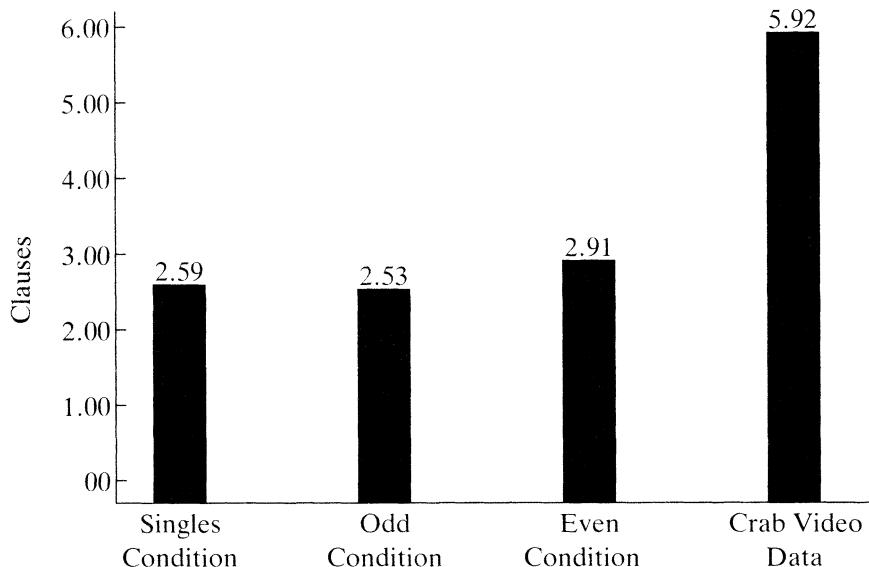


Table 1. Mean discourse density measurements (propositions per episode) for three experimental conditions and crab video data. Significant difference among and between crab video data and the three experimental groups. No significant difference among or between the three experimental groups.

Episode boundary results. The crucial data are found in Table 2. If the syntax of reference is a function of episode boundaries, then one would expect the same performance behavior in each of the three conditions. One should observe reinstatement of reference through nouns on first mention after a boundary followed by pronominal reference until the next episode boundary. All such instances represent hits for the hypothesis.

One expects not to observe pronominals across episode boundaries or nominals within an episode, except for ambiguity resolutions, which have been filtered out.

Table 2 shows that no matter where one puts the boundaries, the proportion of hits remains the same, about 84%. If the structure of the slide sequence or simple distance controlled the syntax of reference, one would expect differences across the conditions. Instead, one observes identical discourse production performances in precise harmony with the experimentally placed episode boundaries.

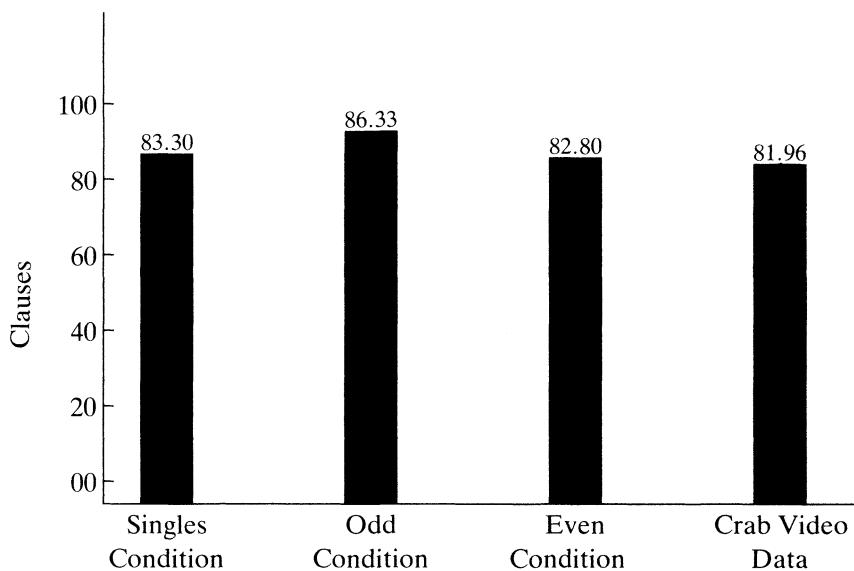


Table 2. Proportion of predicted hits for three experimental groups and crab video data. No significant difference among the four data sets or between any pair.

5. The Video Data

The video data provides strong corroborative evidence for the experimental results. Here 10 subjects produced on-line oral descriptions of a 108 second videotaped cartoon (Tomlin 1984, 1985).

The video cartoon was independently analyzed as composed of a set of

eight major episodes. Episode boundaries are in this case, like the experimental conditions described above, taken to be perceptually salient breakpoints or disruptions in the flow of visual material. These disruptions were operationalized as video cuts (Monaco 1981) at major scenery changes. A representation of the video organization is found in Figure 3.

	SECOND 0	14		39								
EPISODE	1 APPEARANCE OF FISH AND CRAB AND FIRST ATTACK	2	SNAIL SCENE (SNAIL = GOLDFISH)									
EVENT NO.	1 fish appears	2 crab appears and attacks fish	3 crab alone	4 snail crawling	5 crab taken aback	6 snail crawling	7 fish peers back	8 crab looks	9 snail continues	10 shell lost	11 snail continues	12 crab climbs down
DURATION	4	7	3	3	2	5	1	2	5	1	2	4
SIG	+	+	-	+	-	-	-	-	-	+	-	-
	SECOND	46	52	58		74	74					
EPISODE	3	SECOND CRAB-FISH INTERACTION	4	EYES SCENE	5	THIRD CRAB-FISH INTERACTION, PIKE	6	CHASE				
EVENT NO.	13 fish relieved	14 crab confronts fish	15 crab attacks fish	16 fish escapes	17 fish meets eyes	18 eyes come out	19 crab attacks fish	20 fish escapes	21 fish escapes pike	22 crab attacks fish	23 pike chases fish	24 pike chases fish
DURATION	2	5	51/2-6	1/2	2	4	5	1	2	1	2	5
SIG	+	+	+	-	+	-	+	-	+	+	-	+
	SECOND	85	93		108							
EPISODE	6	SUNKEN SHIP SCENE	7	SPONGE SCENE	8	BUBBLES SCENE						
EVENT NO.	25 two enter hatch	26 both gone	27 pike gets stuck	28 pike escapes	29 fish into sponges	30 pike into sponges	31 pike looks for fish	32 bubbles rise	33 pike rises	34 pike circles	35 pike opens	36 pike and crab attack fish
DURATION	2	2	6	1	2	3	3	2	4	31/2	1/2	5
SIG	+	-	+	-	+	-	-	+	-	-	-	+

Figure 3. A representation of the episodic and event structure of the 108 second animated videotape.

If one examines Table 1 again, one can see that subjects in this elicitation produced more than twice as many propositions per episode as did the experimental groups.

These data permit a better test of the recency/distance approach. If the syntax of reference were primarily a function of linear distance, one would expect a significantly different hit rate for this group than the other two. Further, one would expect that the mean referential distance (Givón 1983) for nominal and pronominal forms should be the same in the experimental data and the video data.

But another look at Table 2 reveals that this is not the case. The proportion of hits as predicted by the general episode boundary hypothesis is identical to that of the experimental groups. Further, the data in Table 3 show that there is a statistically significant difference between the experimental conditions and the video data in the referential distance measurements for nouns and pronouns.

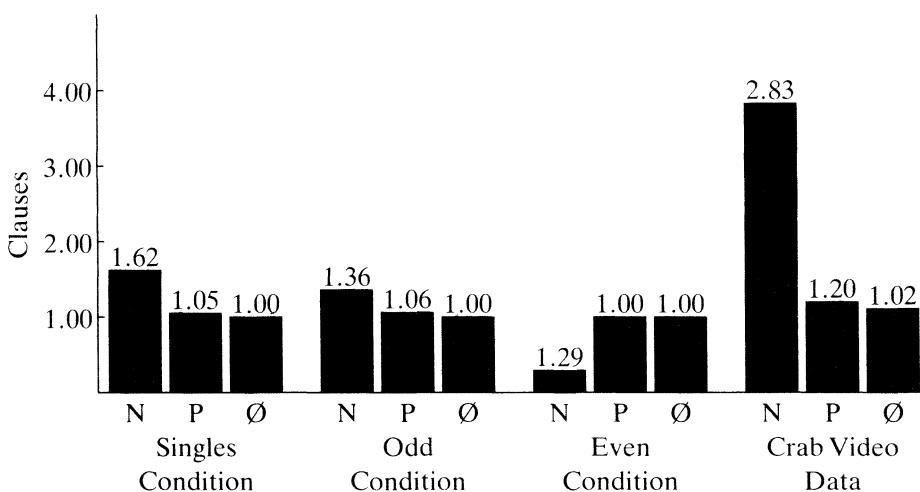


Table 3. Mean referential distance measurements (Givón 1983) for three experimental groups and crab video data. Significant difference in N and P measurements between crab video data and experimental groups. Otherwise, no significant differences.

What this means is that subjects for this elicitation procedure perform similarly to those in the experimental situation described above. They do so despite producing significantly greater amounts of discourse per episode. Further, they do so even though it results in statistically significant differ-

ences in the average distances occurring between referent and antecedent.

The video data and the experimental data seem to converge to show that episode boundaries do control the syntax of reference, for one obtains consistent and harmonious results in two very different discourse production tasks.

6. Exceptions and Counterexamples

While the general hypothesis in (1), as tested in the two distinct data sets, accounts for some 84% of the discourse production of the 40 subjects, there remain about 16% of cases that run counter to expectations, the misses. These fall into two major classes: intra-episode nominals and inter-episode pronominals. There are several non *ad hoc* explanations that account for most of these exceptions, though a small class of genuine counterexamples remains.

Intra-episode nominals

As illustrated in (3), intra-episode nominal exceptions occur whenever a full NP is used to maintain reference after a noun has been used once within a given episode:

(3) Video data: 011

Episode Proposition Text

3	23	That crab just tipped the top of its shell,
3	24	I don't believe that,
3	25	do you?
-->3	26	And that crab's going away,...

The use of the full NP, *that crab*, is exceptional in that it occurs within a given episode, episode 3, but after this referent has been reinstated already by a full nominal, *that crab*, in proposition 23.

Intra-episode exceptions are the more common kind observed in the collected data. They represent some 90% of all the observed exceptions. But there are at least three non *ad hoc* explanations that can reasonably account for most of these exceptions.

First, there are numerous cases in which non-narrative evaluative discourse intervenes between propositions devoted to narration. The speaker in such cases appears to switch his rhetorical activity from narrating events to evaluating them. Such a switch seems to represent another case of attention shifting of just the kind we have been considering here.

Examples (4) and (5) illustrate this.

(4) Singles condition: 013

Episode Proposition Text

3	10	...the bird standing on the ground
3	11	and he's looking at the bug
3	12	he might be (1) uh about to eat it
3	13	I don't know/
3	14	it seems kind of strange
--->3	15	that the butterfly would so close to this (.) to the little bird

(5) Video data: 003

Episode Proposition Text

2	11	and the creature is watching snail
2	12	Going along/
2	13	Leaving bubbles behind him/
--->2	14	The snail is sort of Disney-like creature/
2	15	Looks very cute/

In both cases, propositions appear in which the speaker stops narrating events or actions occurring and begins to evaluate something. Though the speaker technically does not leave the current episode, it seems reasonably clear that his attention has shifted as the rhetorical activity shifted, requiring reinstatement of reference by the full nominal form.

Second, some subjects overtly treated the dual slide presentation condition as though the slides were presented singly. This can be seen in (6):

(6) Even condition: 008

Episode Proposition Text

2	2	...(.) I think the bird is looking at the fly
2	3	= I think maybe he ate it
--->2	4	the second slide the bird is chasing the fly/

In such a case, the subject is clearly performing the task differently than other subjects, keeping each slide individually and distinctly in mind as he proceeded through the task. Only one subject performed so differently, but he

produced a fair number of exceptions.

Third, there appear to be cases of ambiguity resolution which were not filtered out. As described above, the only cases of ambiguity resolution which were filtered out were cases of switch subject. Such cases were identified operationally and do not require semantic interpretation. Thus, filtering them out presents no problem for the present analysis. Cases like the one in (7) below, probably also represent ambiguity resolution, but since the ambiguity cannot be explicitly identified, such cases were counted as exceptions instead.

(7) Odd condition: 005

Episode Proposition Text

7	17	And then the dog chases the cat
--->7	18	(.) and it looks like he catches the cat/

These three explanations account for most of the observed exceptions. The remaining cases, totaling only some 5% of the total numbers of cases, or about 1.5 per subject, must be considered at this point to be genuine counterexamples.

Inter-event pronominals

Inter-episode pronominal exceptions occur when the speaker uses a pronominal form to make reference despite the presence of an episode boundary. This is illustrated in example (8). There are altogether very few exceptions of this sort. One non *ad hoc* explanation accounts for many of them.

After completing the task, one subject reported that she regularly read and told stories to children and said she performed the task as though she were reading a storybook to a child. Most of the inter-episode pronominal exceptions were produced by this one subject. As illustrated in (8), this subject used the relative pronoun, *who*, across the episode boundary between episode 1 and 2. The general hypothesis predicts that reference would be reinstated across that boundary with the full NP, the *butterfly*.

(8) Odd condition: 004

Episode Proposition Text

1	1	Once upon a time there was a butterfly
--->2	2	who saw a little bird
2	3	and greeted it/

The remaining cases were all counted as counterexamples. These represent about 1% of all the cases observed, or .3 exception per subject.

7. Discussion

Summary conclusions. The analysis of two independent classes of data, the experimental slide data and the video data, seem to converge on the same demonstration. The syntax of reference is clearly a function of episodic boundaries in narrative production, which are related to shifts in attention during the on-line process of discourse production.

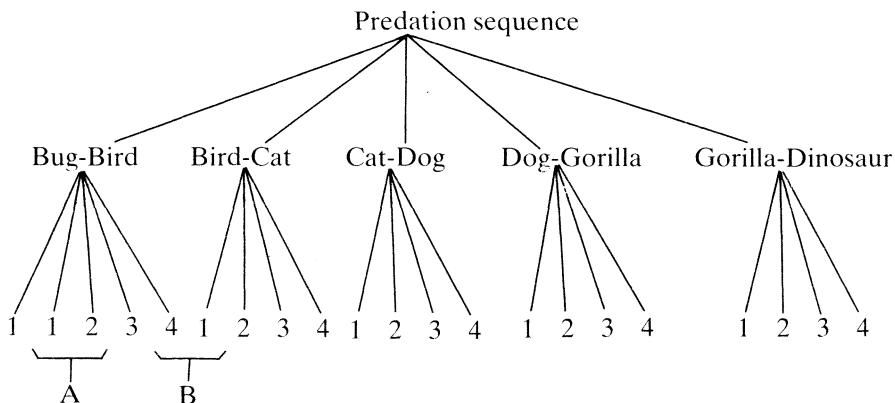
In the experimental data, subjects, both as groups and as individuals, consistently used nouns and pronouns as predicted by the episodic/paragraph approach, when episode boundaries are experimentally controlled and non-linguistically determined. In the video data, similar results are obtained, but in this case episode boundaries are more traditionally identified through change in place. During discourse production, subjects do use nouns to reinstate reference after an episode boundary, and they use pronouns to maintain reference within an episode. Episode boundaries, in turn, seem to be a function of attention orientation, weakly demonstrated in the video data by video cuts and scene changes, and strongly demonstrated by independent control in the experimental data.

Episodic organization and attention. While the results here argue strongly for the episode/paragraph approach to the syntax of reference over a recency/distance approach, the argument for an episode-attention connection has been less clearly made. The crucial argument required is to show that attention allocation, a more general cognitive process, stimulates the episode boundaries, and that they are not due simply to something special about the organization of the elicitation stimuli. A review of the experimental data permits one such argument to be made.

To begin, the most plausible alternative to an attention-driven episode boundary hypothesis is to argue that episodic organization merely reflects a particular instantiation of a given story schema. In this view, the episodic organization represents the consequences of higher level decisions about the structuring of the story.

The slide sequence used to collect the experimental data does have a very clear schematic structure. It is composed of five iterations of a basic predation sequence: (1) introduce new character, (2) two characters meet, (3) larger character chases smaller character, and (4) larger character eats smaller character. Its transparent constituent structure is presented in Figure (4):

Figure 4. The schematic structure of the slide sequence.



The natural episodic units in this sequence should be some consistent set of nodes, clearly either the terminal nodes individually or the next highest level in the tree. In addition, the two bracketed pairs, A and B, clearly do not represent episodic units in this story schema.

This schematic representation of the slide sequence appears to have been recognized by nearly every subject in the experiment, irrespective of which group they were assigned to. Subjects appear to understand the basic story organization by no later than the beginning of the third iteration (Cat-Dog). This is reflected empirically in two ways: (1) overt meta-comment during the experimental task, the subject observing the iterative nature of sequence, and (2) solicited acknowledgement during debriefing of having recognized the iterative organization of the slide sequence.

If episodic organization were simply schema-based, then one would expect that at least some subjects would reveal differences in their discourse production strategies after learning the slide sequence structure. Having learned the basic predation sequence, the subject only needs to be introduced to the next new character to be able to predict precisely what will happen.

Given such a state of affairs, one might expect to see differences in the distribution of hits and misses between the first half (schema unknown) and the second half (schema learned) of subjects' production protocols for the two paired slide conditions, odd and even. Episodic organization might be attention-driven as long as no concrete schema were available, but as soon as one were might shift to an available schema. However, comparison of the

first and second halves of the odd and even protocols reveals no statistically significant difference in the proportions of hits and misses. That is, subjects perform identically across the two halves, even though during the second half subjects appear to have access to some general schematic representation of the story structure.

Subject performances are clearly dictated by the placement of the shutter release cycle, after either even or odd slides. Neither the odd condition, represented by A in figure 4, nor the even condition, represented by B in figure 4, break the slide sequence into any sort of natural or expected schema-grounded episodes. On the contrary, the two conditions were designed specifically to run counter to the expected episode analysis of the slide sequence.

If the shutter release cycle does represent, as assumed here, an adequate disruption of attention focus for the experimental task, then it becomes increasingly likely that it must be attention driving episodic organization and not the other way around. Research on discourse comprehension does not significantly address this issue, for in such studies attention focus and episode boundaries are generally confounded. Thus, while the argument for attention-driven episodic units may remain at the present moment incomplete, it should prove easier to sustain than a schema-based model of episodic organization, for such a model will be hard pressed to account for on-line discourse production data of the type collected in this study.

Recency versus episodes and the syntax of reference. The present study argues strongly for an attention-driven episodic/paragraph model of the function syntax of reference, and it argues strongly against a recency/distance approach.

The attraction of the recency/distance approach lies in its apparent simplicity and generality. Increasing the time or distance between subsequent references does increase the likelihood that full nominal reference will occur for the second reference. Further, measurement of average distances holding between a given referent and between a subsequent noun and a given referent and a subsequent pronoun reveal that the observed average is always higher for the full noun. While these observations represent important general observations about the use of nouns and pronouns, they do not represent adequate evidence for arguments about the specific circumstances that trigger the use of a noun or a pronoun at any specific moment in the discourse production of individual speakers.

In the end, the pertinent question to ask is this: exactly what are the con-

ditions that trigger the use of a noun or pronoun in making references during the time course of discourse production?

The fundamental limitation of the recency/distance approach is that it admits a great many potential counterexamples but offers no systematic explanation for them. The question must be raised just how much time or distance is required to trigger full noun reference during discourse production and how little is needed to guarantee that a pronoun will occur.

While the recency/distance approach cannot answer this question, the episode/paragraph model does exactly this. It makes specific predictions about the performance of individuals as well as groups in the discourse production task. Individuals will use full nouns on first mention after an episode boundary; individuals will use pronouns to sustain reference during an episode.

The primary drawback to the episode/paragraph approach lies in the difficulty of providing explicit and structure-independent means of identifying episodes and episode boundaries. In this study episodes are argued to be a function of attention allocation, and episode boundaries are identified and manipulated independently of text structure and without dependence on introspection. It may even suggest that in the end discourse units, like the paragraph, are more likely to be the artifacts of linguistic analysis than they are cognitive units utilized by speakers in discourse production.

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APPENDIX A

A representative protocol elicited in the experiment (odd condition)

Odd Condition: 003

<i>Episode</i>	<i>Proposition</i>	<i>Text</i>
1	1	There's a butterfly
1	2	flying/
2	3	The bird's talking to the butterfly/
3	4	The bird's chasing the butterfly
3	5	and he's going to eat it/
4	6	(2) The cat sees the bird/
5	7	The cat chases the bird
5	8	and kills it/
6	9	Um the dog is walking along
6	10	and sees the cat/
7	11	The dog chases the cat
7	12	and eats it/

8	13	What is that
8	14	(.) the gorilla sees the dog
9	15	The gorilla grabs the dog
9	16	and kills it/
10	17	The dragon sees the gorilla
10	18	and talks to it or something/
11	19	The gorilla tries to get away
11	20	and he eats it/

APPENDIX B

A representative on-line protocol elicited with the cartoon videotape

On-Line Description: 010

<i>Episode</i>	<i>Event</i>	<i>Prop</i>	<i>Text</i>
1	1	1	Okay, there's a fish in the ocean/
1	1	2	It's a cartoon/
1	2	3	And up comes a crab
1	2	4	and tries to get it with its pinchers
1	2	5	and it seems to be avoiding it
1	3	6	and now it disappears/
2	4	7	Okay, the crab's looking around
2	4	8	and he sees a snail or something
2	4	9	walking on the ocean floor/
2	5	10	He spots it/
2	5	11	He blinks his eyes/
2	5	12	He looks at it
2	6	13	crawling along kind of in a weird fashion, okay/
2	8	14	Okay, he's been spotted now, the fish that's being chased/
2	9	15	Okay, he keeps walking
2	10	16	Okay, he goes out of the shell
2	10	17	so he's uh lost his uh shell
2	12	18	so the here comes the crab/
2	12	19	Crawls down from the rock/
3	14	20	Okay, he lifts his hat up or his shell up to the fish/
3	15	21	Okay, tries to get him with his pinchers/

- 3 16 22 Okay, unsuccessful/
4 17 23 All right, there are a new set of eyes, a
new kind of fish
4 18 24 that seems to be all eyes/
5 19 25 Okay, the crab's still at it,
5 19 26 trying to catch the fish
5 21 27 and, and then he almost goes in, the fish
almost goes in the mouth of a very big whale
or shark or something, some some kind of
fish/
6 24 28 Now they're swimming around uh (.) an old
wreck of a ship, okay/
6 24 29 Obviously been there some time/
6 27 30 Um the big fish stretches a little/
6 27 31 That was kind of cute/
6 28 32 Um, they're still in a chase,
7 29 33 the little fish has gone into a bunch of
sponges it looks like,
7 30 34 and the big fish has gotten lost
7 30 35 and crashed into it and/
8 32 36 Okay, now he's hidden in a bubble/
8 33 37 Okay, so he's, the big fish is going up
8 33 38 to try to (.) get in the bubble
8 33 39 and catch him
8 36 40 and out come the crab out of the fish's
mouth/
8 36 41 Okay, they popped the bubble/

CROSS-CLAUSE RELATIONS AND TEMPORAL SEQUENCE IN NARRATIVE AND BEYOND

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1. Introduction

My purpose in this paper is to discuss the relation of narrative to other types of discourse as a nexus for the study of the relation of syntax to discourse. Particularly in the light of those views of discourse which have arisen as an outgrowth of syntactic research, a guiding question underlying the following discussion is: what, if anything, is special about narrative that has warranted the attention it has received in syntactic studies?

As knowledge of the syntactic characteristics of discourse genres other than narrative progresses, there is a corresponding recognition that narrative has syntactic properties of problematic generalizability to discourse in general. It will be important for the rest of this paper not to overstate the case. However, for introductory purposes, consider the following observations. Linde (1974) noted that spoken spatial tours told by New York City English speakers are rich in inversion, exemplified by the rotation of subject and locative phrase around the verb of a clause. In contrast, narrative in current spoken English is poor in the use of inversion (of any type).¹ This makes spatial tours a more appropriate site than narrative for the study of inversion. Moving from clause-internal ordering or constituents to the ordering of clauses themselves, a similar issue follows from Thompson's (1984) study of the position of reduced purpose clauses relative to the associated main clauses. Thompson found that preposing of the purpose clause appears to be relatively rare in written narrative, but common in the procedural discourse of an auto tune-up manual. As in Linde's case, a similar ordering of constituents does not appear to be equally characteristic of all discourse genres. One consequence of observations like these is to call into question the use of narrative alone to make generalizations about the use of syntax in discourse.

This in turn raises the issue of the interpretation of "markedness" in terms of statistical frequency in narrative. To the extent that a theory of universals in terms of markedness is based on statistical counts from narrative data, what justifies the emphasis on narrative, if not an assumption that narrative data is representative of the grammar in general? This issue is implicit in Mithun's (this volume) discussion of the problem of defining "basic word order" in the unrelated languages Cayuga, Ngandi and Coos. Mithun notes that in these languages, subject and object relations do not seem to play a role in ordering with respect to the verb. Instead, she proposes the concept of newsworthiness, through which either relation can be preposed depending on how the discourse context affects topicality. In view of the inequitable distribution of some syntactic devices across discourse genres, it is likely that the more newsworthy relations to the verb change with discourse genre. Should narrative have a privileged position in determining the markedness of word order in languages like these?

Underlying these issues of the relation of narrative syntax to that of other discourse genres is the basic linguistic issue of the "productivity" or "creativity" of grammar, the principle that grammar is a set of systems for organizing information for a potentially infinite number of purposes.² If grammar is used differently in different discourse genres in a single language, generalizations about the grammar of languages cannot be made on the basis of narrative (or any other discourse genre) alone without further justification.

To this end the following discussion will be aimed at putting the defining characteristics of narrative syntax into a larger discourse perspective, using syntactic and discourse data from several languages which appear to grammaticalize temporal sequence in ways relatively rarely found among languages.

Discussion will proceed from basic concepts such as "narrative", "temporal sequence", "subordination", "grounding" (section 2), to a general discussion of the relationships among expression of these concepts in specific languages such as English, Hausa, Bemba and Swahili (section 3), then to a more extended and detailed discussion of the verb marking of clause relations in Swahili (section 4), and, finally, to conclusions to be drawn from the preceding discussion and directions for further research on the relation of narrative syntax to the syntax of discourse in general.

2. Basic Concepts

2.1. This section is divided into two parts. The first establishes a particular restricted meaning for the term *narrative* (necessary since different writers vary between wider and narrower applications of the term “narrative” to discourse genres which are conceptually distinct), and focuses attention on the concept of *temporal sequence* as one of several properties of narrative (and many other types of discourse unit). The second part discusses subordination and grounding.

2.2. Narrative and temporal sequence

A minimal syntactic characterization of narrative is given by Labov & Waletzky (1967) in their seminal work on the analysis of spoken narrative. By definition they require a narrative to consist of at least two main clauses in a linear order which reflects the inferred temporal order of events. The requirement that the *narrative* clauses be “main” is of special significance to the development of a syntactic theory of discourse (coherent multi-sentence) units, because it establishes a relationship between clauses which goes beyond sentence grammar.

The crucial criterion for distinguishing narrative clauses from other multi-clause sequences is the effect of clause reordering on the inferred temporal order of events. For example, consider the following episode from a written text, based on a filmed cartoon serving as a controlled elicitation stimulus in a study of clausal processing of texts across differences in memory condition and oral/written channel by Tomlin (1984:34).

- (1) 19 The fish *swam* around fast
20 and almost *ran* in to (sic) something with very big eyes.
21 It *got scared*
22 and *turned* the other way.

All of the clauses in (1) are narrative clauses by virtue of mutual irreversibility without changing inferred temporal order. It must be noted that the test of reversibility is concerned with temporal reference only, and ignores ungrammaticality caused by changes in nominal reference, i.e., it allows test interpretation to adjust nominal reference so that the test of reversal of, for example, (1) 21-22 is:

- (1) 22 It *turned* the other way
21 and O *got scared*,

rather than the mechanically anti-grammatical

- (1) 22 And O *turned* the other way.
- 21 It *got* scared

Note that the lexical substitution of *be* for *get* in (2) below changes (1) 21 from a punctual to a stative clause. This change destroys narrative sequence, because clause order does not affect inferred temporal order, i.e., “it was already scared BEFORE it turned away”.

- (2) 21 It *was* scared
- 22 It *turned* away
- or
- 22 It *turned* away
- 21 It *was* scared

In justifying the distinction between a sequence of narrative clauses and a subordinate + associated main clause, L&W use the syntactic test of reordering to show that subordinate clauses share a property with non-narrative main clauses of not reversing the inferred temporal order, e.g.

- (3) 21 AFTER it *got* scared
- 22 it *turned* the other way
- or
- 22 it *turned* the other way
- 21 AFTER it *got* scared

Labov (1972:361) insists that narrative clauses must refer to *single past* events. He explicitly excludes clause pairs oriented toward another modality, e.g. past habituals or general “presents”, arguing on logical grounds that they are reversible, e.g.

- (4) a. ya *get* up there
- b. n you *feel* like (you're gonna die)

The argument is that, since (4)a and b are events which are inferred to recur, either order is “true”. However, this is a different argument from the one which tests the effect of linear reordering on temporal interpretation. One can see that on any single occasion there is an *internal* temporal order of events, i.e. GET - FEEL. Most importantly, if the clauses of (4) are reordered, the inferred internal temporal order is reversed, just as across narrative clauses. Silva (1983:20) provides a dramatic example of the importance of temporal order in procedural discourse. In a study of the development of

the English conjunctions among middle-class Bay Area children, she notes a gag which was used in one episode of the TV program MASH, which plays on deviations from temporal ordering in procedural discourse. While following the written instructions for dismantling a live bomb, the characters come across:

- (5) a. Carefully *cut* the wires leading to the clockwork...
b. BUT FIRST *remove* the fuse... (Silva:1983,20)

Though (5) demonstrates that English has the semantic resources to present two main clauses in *reverse* order, the gag shows that using these devices is not the best strategy for certain types of discourse.

While the L&W restriction of narrative clause to single past events does serve to define narrative as referring to single past experience, in contradistinction to other kinds of discourse, it does not recognize that narrative shares an internal temporal order with many other types of discourse. That is, iconicity of temporal order is a property of narrative independent of singleness and pastness of events.

For purposes of further discussion I will reverse the term *narrative sequence* to refer to a set of two or more narrative clauses, in accordance with L&W's definition. However, I will use the term *temporal sequence* to refer to the more general class of clause relations by which two events are referred to in iconic order, regardless of *external* time or modal orientation. Temporal order, then, is the inferred referential order of events. Temporal sequence is the iconic match of temporal order and clause order.

At this point the special syntax of narrative has been resolved into four more general components.

1. clause status (main or subordinate)
2. temporal sequence
3. singularity of events in temporal sequence
4. pastness of events in temporal sequence

With the glaring exception of the clause status, these notions are clear and independent of grammatical encoding in particular languages.³

2.3. Subordination and grounding

Some recent literature in syntax has questioned the basic notion of subordination as a uniform characteristic of all languages, in view of its differential syntactic and semantic properties in different languages (e.g. van Valin, 1984; Haiman & Thompson, 1984; Mithun, 1984a). In syntactic terms, the

coherence of subordination as a language-independent concept has been questioned on the basis of the language-dependent nature of distinctions between the marking and/or internal word order of main and subordinate clauses.

Among discourse-oriented studies, the function of “subordination” is linked to “background” in discourse. In keeping with the focus on narrative, the distinction between “foreground” in discourse. In keeping with the focus on narrative, the distinction between “foreground” and “background” has been discussed virtually exclusively in the context of narrative. The semantic distinction between “foreground” and “background” has proven difficult to explicate in precise terms. Generally, terms like “main”, “highlighted”, “important”, “significant”, “central” are used to characterize foregrounding (e.g. Labov, 1972; Hopper, 1979; Jones & Jones, 1979; Hopper and Thompson, 1980; Ohmanson, 1982; Tomlin, 1984). A basic question addressed to the fundamental notion underlying these terms must be: is the notion language-independent? If so, why is it difficult to decide between translations using English *when* or *then* clauses, or main and relative clauses in some languages (cf. Mithun, 1984a)?⁴

This difficulty is avoided by Jones & Jones (1967) in their proposal for variable degrees of grounding across languages. However, their solution is not without a cost to clarity in the description of grammatical paradigms. According to Jones & Jones’ notion of grounding, languages differ in the *relative* levels of “importance” which they grammatically encode on clauses in discourse, e.g., English has at least three in narrative: (lowest) past subordinate clause — past main clause — historical present (highest). In some languages, e.g. Apache, these levels belong to a single paradigm. However, J&J recognize a problem in identifying the highest level (called “peak”) in terms of a specific grammatical paradigm among many languages (op cit:23ff). Thus, in English, subordination and tense-marking belong to separate grammatical paradigms. Why are areas within a single semantic continuum encoded in such grammatically different ways, and are there any limits across languages on how such semantic continua are grammatically encoded?

Regardless of terminology or conceptual framework, scholars agree on the status of the syntactic representation of single past events in narrative sequence as constituting a special conceptual ground in narrative. Still, recognition of narrative sequence depends crucially on distinguishing main from subordinate clauses. Furthermore, this characterization of “foregrounding” only applies to narrative, whereas both the main:subordinate distinction and

temporal sequence are conceptually independent of time orientation (i.e. past/non-past, etc.), as discussed in 2.1. above.

In considering the main:subordinate distinction, and its relation to grounding, the effect of clause reordering on temporal sequence will be a useful analytic tool. Temporal sequences which may be linearly reordered without changing the inferred temporal order can be distinguished from temporal sequences for which reordering does affect interpretation of temporal order. With regard to the status of narrative syntax within the grammar of any particular language, distinct types of languages can be recognized. One type of distinction is between languages which regularly encode temporal sequence and languages which do not. A second type of distinction, which turns out to crosscut the first, is between languages which regularly encode time orientation to the moment of speaking (henceforth *speech time*) at the clause level, and languages which do not. The following sections will briefly discuss the grammatical independence of temporal sequence and orientation to speech time, and then examine in more detail the syntactic construction of narrative and other types of discourse in Swahili, a language which grammatically marks temporal sequence in some discourse genres but not in others.

3. The explicit marking of temporal sequence

It seems to be the case that all languages have devices to make explicit the relative timing of events represented by adjacent clauses, but how regularly these devices are actually used varies across languages. Perhaps temporal sequence is most commonly represented iconically without further marking, and it is left to pragmatic inference to determine whether or not the linear ordering of clauses indeed represents a temporal sequence. Example (2) above indicates that in the English *get/be* distinction lexical encoding can play a role in establishing temporal sequence; copula clauses represent states rather than events and may break a temporal sequence. Clauses (6)b-c below give further evidence of the pragmatic basis of temporal sequence in English.

- (6) a. you gotta *get* it (= the mop:BW)
- b. n *squeeze* it yk (= y'know)
- c. *take* all the water out
- d. then *mop* (MT16m,ELA)

Clauses (6)a and d are strictly temporally ordered with respect to each other, and with respect to (6)b and c, but the temporal ordering between (6)b and c is problematic. One view might be that *squeeze* initiates a single event which

ends in *take* (ALL...). Another view might say that both clauses are unordered but in a manner-purpose relation to each other. Still a third view might take (6)b-c as a temporal sequence, analyzing (6)b as an *inceptive* event and (6)c as a *completive* event. The problem is that the strategy of temporal sequence and the lexical features of the verbs of (6)b-c alone are not sufficient to decide the analysis. As a general rule, where pragmatics operates without grammatical support, indeterminate cases will occur.

Languages which more regularly mark temporal sequence seem to be rare. In addition, they vary in type amongst themselves. An example is Hausa, like most Afro-Asiatic languages, an aspect-only language (i.e., does not grammatically encode past/nonpast). Hausa obligatorily marks aspect (through a morpheme suffixed to the subject marker, preceding the verb). The two major aspects are usually called “completive” and “continuous” (e.g. Kraft & Kirk-Greene, 1973). The continuous, like the Slavic imperfective, is used in progressive and habitual contexts (cf. Comrie:1976, 25ff). There is a further special habitual “aspect” which is never used as a progressive. In a habitual context (e.g. procedural or past routine), clauses in temporal sequence are marked with the subjunctive, e.g.

- (7) a. *ya KÀN tāfi barga:*
he HAB go stable
- b. *yà zàunà*
he+SJN sit
- c. *mà:su sàñ kwabàn-sà sù zo:*
those want money-his they+SJN come
- d. *sù ke:wàye:shì...* (Abraham 1959:69-70)
they+SJN surround him...
- a. “he used to *go* to the stable
- b. and *stay*
- c. and then those who wanted his money would *come*
- d. and *surround* him...”

In the context of the story, the translation calls for a past habitual, but since Hausa does not mark tense, in other contexts the time orientation could be “general present” (i.e., he usually *goes...stays...*).

Clauses representing a temporal sequence of single events use a special form of the completive, (obligatorily used in relative clauses), e.g.

- (8) a. *ka:tsì kùwa: shi: nè: tābo: na tukunya-r ba:ba wàn-dà*
katsi tp it is mud from pot-of indigo which

- b. *a-KÀ di:bà*
one-CR gather
- c. *a-KÀ dunkùle: cu:ri cu:ri*
one-CR roll.into balls one
- d. *a-KA fo:nè*
one-CR burn
- a. “katsi is mud from an indigo pot which
- b. someone *gathers*
- c. and *rolls* into balls
- d. and *bakes.*” (Abraham 1959:29-30)

In another context the temporal sequence in (8)b-d might refer to a narrative sequence (somebody GATHERED...ROLLED...BAKED /the mud/).⁵

Although Kraft & Kirk-Green (1973:109) note that the simple completive can also be used in past temporal sequences (except in relative clauses, where the relative completive must be used in any case), the relative completive seems to be more common. In contrast, the simple completive is more regularly used as an anterior marker in past contexts, as in (9)c.

- (9) a. *dà su-KÀ shiryà:*
RM they-CR ready
- b. *su-KÀ tafi*
they-CR go
- c. *màka:ni:ki: ya:-gya:rà: ma-sù mo:tà-r-sù.*
mechanic he-CM fix for-them car-of-them
- a. “when they were (i.e. got) *ready*
- b. they *went*
- c. the mechanic HAD (already) *fixed* their car.” (K&K-G 1973:171)

Thus, in view of its use in both temporal and reverse sequences, the generalization can be offered that the simple completive does not inherently encode anteriority, but due to the common use of the relative to mark temporal sequence, the simple completive gravitates toward use in the context of anteriority.

In contrast to Hausa, Bemba marks both absolute tense and temporal sequence. Givón (1972:137ff) notes that verbal prefixes mark temporal orientation to speech time, e.g. À ‘relatively distant past’, but that there is suffixal contrast between temporal sequence and anteriority represented by *-i/ele:Ø*, respectively. This language, then, has both overt marking of tem-

poral sequence and tense marking in certain discourse contexts. Bemba will be discussed further below in relation to Swahili.

In languages like Hausa and Bemba, which regularly grammatically encode temporal sequence, clause reordering necessarily changes inferred temporal order. Hausa and Bemba contrast with English in the regular marking of temporal sequence. However, they differ from each other in whether or not they mark tense as well. Hausa has no specific tense marking, while Bemba has an elaborate system of tense distinctions in the past, typical of Bantu languages (cf. Givón, 1972). In marking tense relative to speech time Bemba is similar to English, but distinct from Hausa.

In the next section I will consider the verb marking system of Swahili, particularly as it is used in the construction of narrative and other types of discourse containing temporal sequences. It will be seen that in some ways the Swahili system is intermediate between its distant Bantu relative Bemba, and an aspect-only language like Hausa. In still other ways, it is unlike either of these languages.

4. **Verb marking in Swahili discourse**

The three most prominent verb markers in Swahili narrative are KA, LI and KI. Some of the basic characteristics of these markers are discussed by Hopper (1979) and Hopper & Thompson (1980:281ff) in the context of narrative. Essentially H&T characterize KA as marking clauses of the “main line” of the narrative (thus, a temporal sequence), KI as marking deviations from that line, and LI as the usual “narrative past tense”. It is, in fact, the only past tense in Swahili. In the sense of encoding reference to speech time, it is the only Swahili “tense”. KI and KA, on the other hand, are neutral to the external time orientation of discourse.

The following discussion will examine KA, LI and KI in that order, in spoken Swahili discourse. It will examine the interplay between Swahili grammar, lexicon and pragmatics in the construction of narrative and other types of discourse.

4.1. KA

The Swahili verbal prefix KA exemplifies the regular grammatical encoding of temporal sequence in certain discourse types, including narrative and general procedural discourse. KA explicitly marks a temporal sequence without need to refer to wider context for recognition. The indifference of

this marker to speech time (i.e. between past/nonpast) is indicative of the more general characteristics of the Swahili system of marking tense, aspect and mood, with qualifications to be discussed subsequently with respect to the markers LI and KI.

Consider now the following discourse segment featuring KA. (In (10) and further examples, upper case to the left of each cited clause isolates the verb marker prefixed to the italicized verb).

- (10) a. NA....halafu tunachota kwenye maji
- b. KA tukatia kwenye ndoo
- c. KI ‘*kikoma*
- d. KA tukabeba
- e. KA tukaja zetu mpaka nyumbani
- f. KA tukamimina kwenye mtungi...
- a. “...and then we *draw up* water
- b. and *put* it in a pail
- c. when we *finish* (i.e. and then)
- d. we *take* it
- e. and *come* home
- f. and *pour* it into jugs. (ML38f, Lamu)

ML is explaining how water is brought to houses in her hometown. The discourse does not refer to a single past event, and therefore is not a narrative. It is a general routine, or, from the speaker's perspective, a past routine, since she now lives in a house in a town with plumbing. However, the external time orientation is not evident from the context given in (10) alone. As Hopper (1979,214) notes, the Swahili system does not express orientation to the time of speaking in its marking of temporal sequence. Orientation is usually provided by a marker in a clause preceding the temporal sequence. Independent of external time orientation, the temporal sequence is marked from (10)b to (10)f. All verbs marked by KA are in temporal sequence. No pair of KA clauses can be reordered without reversing the temporal sequence. On this basis KA appears to be a fully encoded consecutive marker.

There is, however, more to be said about how KA is interacting with the lexical verbs in (10) — and more generally, about how lexical verbs are semantically structured in Swahili. First, reconsider the translation given for (10)d-f. The translation reflects the three-clause temporal sequence of the Swahili original “TAKE...COME...POUR”. A more idiomatic English translation might collapse the serial-like (10)d-e into a single clause “we

CARRY it home". In point of fact, the standard Swahili-English dictionaries (e.g. Johnson, 1975) define the verb *beba* of (10)d in terms of the English verb "carry (on shoulder)". As discussed immediately below, the lexical meaning of *beba* would more accurately be glossed as a clause sequence "TAKE...and CARRY on upper body (head or shoulders rather than hand)". This decomposes the lexical meaning of *beba* into a punctual event TAKE followed by a non-punctual event CARRY.

The interaction between lexicon and grammatical marking of Swahili verbs indicates that Swahili differs from English by not lexically encoding punctuality in verbs. There is widespread agreement among linguists that punctuality refers to the encoding of an event as "instantaneous", i.e., it begins and ends so fast that no other event could occur within its temporal boundaries.⁶ Hopper & Thompson (1980:252ff) exemplify lexical encoding of punctuality with the difference between English "kick" (punctual) and "carry" (durative). In contrast, one cannot find Swahili verbs which differ with respect to punctuality irrespective of wider discourse context. Instead, one finds evidence that where English makes a lexical distinction, Swahili uses grammatical marking alone.

One of the most prominent distinctions occurs in the interpretation of verbs as *state*, marked by ME in most dialects, or *process* (single event or habitual), marked by A (or NA in some dialects), e.g. a-ME-choka/simama/etc. 'he's tired/(in the state of) standing up/etc.' vs. yu-A-choka/simama/etc. 'he's getting tired/(in the process of) standing up...' (as single events) or 'he gets tired/stands up...' (either general habitual events or "historical" present single events, as in the on-line narration of the English present exemplified in Tomlin, 1984). Indeed, the use of grammatical rather than lexical marking for the state:process distinction is common to a great number of languages in Africa and elsewhere, (cf. Welmers, 1973:347ff; Comrie, 1976:57). However, how extensive this neutrality to punctuality is among lexical verbs in general within these languages has not been investigated cross-linguistically. Thus, in a discussion of this phenomenon among West African languages, Welmers (op cit) considers the case of a Kpelle verb used both as equivalent to 'see' and 'catch sight of' (cf. 'notice') to be the extreme, to his knowledge. Of course, some instances of the phenomenon are familiar to students of various Indo-European Languages, e.g. the Old Greek "perfect with present meaning", as in the case of verbs such as (*w*)*oid-* 'know' (of root meaning 'find out', cognate with Latin *vid-* 'see' and English *wit-ness*), or the set of Spanish verbs with alternative English durative or punctual equivalents depending on

aspect, as in the case of *conocer* ‘know/be familiar with’ (present/imperfect = durative), ‘meet (for the first time)’ (preterite = punctual). In Swahili all verbs may be distinguished according to the contrast given above for ME and A. In addition, all verbs may be marked by KA, in which case they will select a punctual verb in the English translation, where this is possible, e.g. a-KA-choka/simama ‘he got or gets tired/he got or gets up (on his feet)...’. Hence, the translation (10)d ‘take’ instead of ‘carry’ is appropriate in temporal sequence before the English durative verb of motion ‘come’.

Beside grammatical marking of the difference between state and change of state, rather than lexical encoding, the Swahili analogues to English lexical verbs show a more general indifference to punctuality. A prime example is the verb *ruka*, which glosses lexically in English as either ‘fly’ (durative) or ‘jump’ (punctual). Thus, in English *she kept flying* has a continuous reading, while *she kept jumping* can only be iterative. A more accurate gloss of Swahili *ruka* is ‘go up in the air’ (cf. the causative form *rusha* ‘throw’, and see (13)d below). Only pragmatic inference will associate *ruka* with ‘fly’ or ‘jump’ in a given context.

Next, the relation between punctuality and perfectivity needs to be discussed with respect to KA marking. The notions labelled “punctuality” and “perfectivity” are subject to some variation in the recent literature. Of particular relevance to the discussion of Swahili is Givón’s (1982:136ff) discussion of Bemba aspectual distinctions. Givón uses the term nonpunctual to refer to ‘progressive/continuous’, ‘habitual’ or ‘iterative’ aspect.⁷ He uses the term “perfective” to refer to events in temporal sequence. On the other hand, Comrie (1976:16ff) uses the terms “perfective” and “punctual” in a different way, e.g., he argues that in Russian, an obligatory-aspect language, a verb like ‘wait’ (*po/pro-stojit'*) is necessarily perfective, but is lexically durative rather than punctual, since one may “wait” for a prolonged period of time. In view of my analysis of KA as a punctualizer and the neutrality of the Swahili verb lexicon to punctuality, Givón’s characterization of Bemba aspect as pervasively concerned with marking punctuality also applies to Swahili. Perfectivity in Comrie’s sense is of no consequence to Swahili grammar apart from punctuality. Verbs in temporal sequence are necessarily “punctual”.

Givón goes on to contrast the marker $\dot{\Lambda}$ -...-I/ELE as “perfective” (i.e., in temporal sequence — in past contexts) with $\dot{\Lambda}$ -...-Ø as “anterior”, i.e., necessarily representing a reverse sequence. Within anteriority, he makes a further conceptual distinction between whether or not an anterior event “lingers” (i.e., is ‘perfect’) on the basis of the lexical verb, e.g. anterior marking

of *ya* ‘leave’ is pluperfect in a past context (i.e. ‘had left’), but *shipa* ‘be(come) brave’ lingers to the time reference point (i.e. ‘was brave’).

The Swahili system differs from the Bemba system with respect to anteriority. Swahili has a perfect marker distinct from an anterior marker. The perfect marker, as discussed above, is ME (in most dialects). It specifically marks ‘linger’ as an event relevant to whatever time reference point has been independently established. For example, *ni-LI/A/TA-m-kuta a-ME-choka* ‘I found/find/will or was going to find him tired’, uses *kuta* ‘find’ as the time reference point for *choka* ‘get/be tired’, but in isolation a-ME-choka simply uses speech time as a reference point, resulting in the translation ‘he’s tired’ (i.e. he got tired and still is). While ME necessarily denotes an event which *began* before the time referent point, and marks anteriority in this sense, it is distinct from another marker commonly used to signal anteriority in the past, LI. The following discussion indicates that LI, like KA, is punctual.

4.2. LI

LI, like KA, is associated directly with punctual events. However, there is a special construction which allows LI to establish a time reference point for states. Example (11) below shows how LI functions to mark anteriority regardless of the punctuality of the clause.

- (11) a. LI nilikwenda
- b. LI kwa kuwa mimi nlitoka hapa
- c. LI ... roho yangu ilikuwa
- d. A yapenda kwenda kusoma katika Saudi Arabia
- e. LI maana mi nlisoma lugha ya kiarabu kidogo ...
- a. “I went
- b. inasmuch as I *left* here
- c. ... I *had*
- d. *wanted* to go study in Saudi Arabia
- e. because I had *studied* a little Arabic...” (AH53m,Msa)

The time reference of successive LI-marked clauses move progressively backwards. The temporal sequence would be “STUDY...WANT...LEAVE...GO (to)”. The LI-marked events in (11)a,b and e may be read as punctual. “Clauses” (11)c-d orient toward a state by means of the “compound tense” sequence

c. LI-kuwa + d. A,
marking *penda* ‘like’. Marked by LI, *ku-wa* ‘be(come)’ acts as a “dummy”

punctual event anterior to the established time reference point (of (9)b in this case). Unlike ME, LI does not necessarily imply that events so marked are relevant to the time reference point.⁸

There is more to be said about LI. First, it is strictly bound to anteriority *before* speech time, unlike ME. In this respect it is unique among the Swahili verb markers. No other Swahili verb marker encodes reference to speech time. Second, there are specific discourse contexts in which it is not anterior, but rather in temporal sequence with a preceding clause, as in (12) below:

- (12) a. LI alipolishwa
- b. LI alishika ndia
- a. "As soon as he was *fed*"
- b. he *hit* the road (i.e. he ate and ran) (SW19m, Msa)

As the English gloss for (12)a "as soon as" suggests, the consecutive use of LI in (12)b implies a minimal interval between two punctual events. It is important to note that the temporal sequence is not a *narrative* sequence in either the Swahili original or the English translation. The clauses can be reversed without affecting inferred temporal order. However, examples like (12), although relatively rare in narrative because of their specific emphasis on the temporal closeness of two successive events, suggest that LI is indeed 'past', rather than truly anterior. It may either reverse or create a temporal sequence, but the event it marks must always be prior to speech time. In both respects it differs from KA.

It will soon be made clear that the special status of LI derives from a stage at which absolute tense marking played a greater role in Swahili, as it does in Bemba and some much closer relatives of Swahili in Northeast Bantu. For the moment, however, it is important to note that LI marking a verb in temporal sequence is restricted to contexts in which it follows a clause either marked by LI-PO (i.e. LI + the temporal relative marker -PO 'when') or KI. The replacement of LI-PO by KI in this context does not affect interpretation. Thus compare (12) with (13) below:

- (13) a. KI ikija
- b. LI ilipiga tu
- c. KI ikipiga
- d. LI iliruka hivi
- e. KAikapinduka
- f. KI 'kisha
- g. KAikarudi tena hivi

- a. “as soon as it (= the car:BW) *came*
- b. it *hit* (= the other car:BW)
- c. as soon as it *hit*
- d. it *went up* (in the air)
- e. and *turned* over
- f. when it *finished* (i.e. *and then*, cf. (10)c above)
- g. it *turned back* (upright),” (FA23f,Msa)

Again LI marked verbs in (13)b and d denote events in temporal sequence with the events denoted by the immediately preceding clauses. The “normal” marker of temporal sequence, KA, begins in (13)e, where the shortness of the time interval between the temporally ordered events is not emphasized.

Despite the neutralization of KI and LI-PO in punctual past temporal sequences, KI has a much more general range of discourse uses than LI-PO. In many respects, KI presents a contrast with KA most revealing of the nature of the Swahili verb marking system.

4.3. **KI**

In contrast to KA, KI clauses are normally reorderable in principle, without changing the inferred temporal order, e.g.

- (14) a. KI *akipita adui*
- b. TA *mkubwa atasema* “*mkanyageni!*”
- a. “if/when an enemy *passd* (below)
- b. the leader would *say* “step on him!” (AD16m,Msa)
- (15) a. ng *sijui*
- b. TA *ntafanya nini*
- c. KI *nkiolewa.*
- a. “I didn’t know
- b. what I would *do*
- c. if/when I got *married.*” (ML42f,Lamu)

KI is seen above associated with clauses marked by TA ‘irrealis’ (i.e. ‘future’ or ‘conditional’). When postposed, as in (15)c, KI is interpreted as a reverse sequence, i.e. MARRY...DO is the temporal order. In this respect the KI clause is identical to the adverbial clause of English and many other languages.

KI has additional semantic properties which are not associated with sub-

ordination in English. Thus, in the “compound tense” construction following the “dummy” auxiliary *ku-wa*, it behaves like the “imperfective” of many languages with obligatory aspect marking, having a habitual or progressive reading, e.g. *ni-LI-kuwa ni-KI-tembea* ‘I used to walk/was walking’.

The reason I said above that a KI clause is “normally” reorderable is because of the case past habitual discourse, as in (16) below, in which reversibility of the KI marked clauses is problematic.

- (16) a. LI Kuweit walikuwa
- b. KI wakija hapa na majahazi yao...
- c. KI majahazi yao yakifika hapa
- d. KI wakipiga ngoma siku zote.
 - a. “From Kuwait they used to
 - b. *come* here with their dhows
 - c. and (when) their dhows *arrived*
 - d. they used to *party* every day.” (Abd23m,Msa)

“Clauses” (16)a-b feature the compound tense construction. In effect, clause (16)a is simply orientation to the past. Clauses (16) b-d form a past habitual temporal sequence. The choice of KI rather than KA in this context makes it explicit that the sequence is *past* habitual. While KA functions in a general context, as in (10) above, as well as in narrative, KI is the rule in past habitual contexts.

Note that the gloss for (16)c equivocates on whether or not the clause is subordinate. Our test for subordination, the effect on interpretation of reordering, works in principle. Each clause is permutable with the following clause as long as it is interpreted as an “adverbial” clause. According to the strategies actually observed in Swahili discourse, however, a series of past habitual events are invariably presented in temporal sequence.

It is interesting to note in this context that in the relatively rare cases in which a sequence of KI-marked clauses follows an associated main clause, it is a reverse sequence, as in the following line of verse by Muyaka, the early nineteenth century Mombasan poet.

- (17) a. NGE nyote mngelia
- b. KI mkiniona
- c. KI hipita (= n-ki-pita)
 - a. “you would (hypothetical) *cry* (tears of jealousy)
 - b. if you *saw* me
 - c. *passing by.*” (Hichens, 1940:52)

In order to recognize the sequence as reverse, interpret each clause as punctual and note the temporal order is PASS...SEE...CRY.

The temporal sequencing of KI clauses extends beyond past habitual discourse to “subordinate” narrative clauses (amidst complex preposed adverbial clauses containing verbs in temporal sequence, in general). Thus,

- (18) a. KI sasa akitoka yule bwana
- b. KI akikumbuka lile koti lake
- c. KA akarudi mbio mpaka nyumbani
- d. KI akirudi nyumbani
- e. KI sasa akija
- f. KI akishika koti
- g. A asikia
- h. A vitu vyalia ndani.
- a. “so when the guy *left*
- b. and *remembered* his overcoat
- c. he *ran* back to the house
- d. when he *ran* back (i.e. *and then*)
- e. and *came*
- f. and *took* the coat
- g. he *heard*
- h. some things *making* a noise inside.” (CH19m,Msa)

The temporal sequence is divided into two discrete sections (in this case “narrative episodes”, i.e. “little narratives” on their own). The first is (18)a-c; the second is (18)d-g. The division between the sections is marked by repetition in (18)d of *rudi* ‘return’. This repetition suspends the temporal sequence. Repetition of the type in (18)d is a common device in Swahili narrative (as in many languages, cf. Grimes & Gloebe, 1970 for Saramaccan narrative and Marchese, this volume for Godié procedural discourse). The repeated clause is analogous to either a repeated clause marked by ‘when’ in English, as in the (infelicitous but literal) translation of (18)d, or more usually pronominalization of the entire clause by ‘(and) then’.

Following the suspension of (18)d, the temporal sequence is resumed in (18)e-g. In principle, KI can be replaced by KA without changing the temporal sequence. However, it is not unusual in short episodes for KI marking to continue across clauses with a shift in marking as the final clause of the temporal sequence is approached. Thus, (18) exemplifies this twice. The first case is (18)c followed by the repetition (18)d. In the second case (18)g is the

last clause in the sequence. Then (19)h breaks the temporal sequence with a clause temporally unordered with respect to (18)g. Conceived of as punctual events, the temporal order of (18)g-h is reverse: MAKE NOISE - HEAR.

Temporal sequences of the type in (18) are reminiscent of those found in languages which may specially mark the last verb of a temporal sequence. Givón (1972:232) describes this situation for Bemba. In a Bemba past or future temporal sequence, tense marking may be suspended for the last verb, e.g.

- (19) a-À-ish-ile a-À-ike-ele a-À-li-ile a-À-ya
 he-P-come-sf he-P-sit-sf he-P-eat-sf he-SH-leave
 "he came and sat and ate and *left*".

Here P stands for the relatively distant past tense morpheme and sf for the suffix marking verbs in past temporal sequence. The last verb shifts to a marker (labelled SH above) which does not show tense.

Swahili: KI...KI...SHIFT
 Bemba TENSE...TENSE...SHIFT

Both the Swahili and the Bemba systems fit a general pattern of shift from a sequence of identically marked verbs in temporal sequence to another marker (simply labelled "shift" in the above scheme) without breaking temporal sequence. This pattern fits the continuum of levels of grounding discussed in section 2.3. above with reference to the Jones & Jones (1976) proposal. In the Bemba example the special marker of shift (which is neutral to tense) is equivalent to "peak", the highest "ground" in the discourse. From prior discussion, it should be clear that Swahili does not have a special "peak" marker. Instead, peak is marked in a local section of discourse by *down-shifting* all but the last clause of a temporal sequence. This downshifting is accomplished by KI marking. Thus, KI marking is not necessarily an indicator of "background" as opposed to "foreground" (though it may be used in that way), but rather a marker of *relative shift downward*.

In narrative and many other types of discourse (e.g. procedural), downshifting through KI-marking is commonly used to break the main line *into two local episodes*. Two conventions are commonly used in this case:

1. KI marking a repetition of the last verb, as in (13)c and (18)d above.
2. KI marking a verb meaning 'finish', usually *isha*, as in (13)f, but also *koma* in some dialects, as in (10)c.

Technically there is no difference between these two options. Both are frequently used in narrative. Lexically, 'finish' has a specific meaning distinct from other verbs. However, since KA explicitly marks a verb as punctual, when 'finish' refers to a preceding verb marked by KA in a discourse context, the event denoted in the KA clause and the event referred to in the following KI-SHA "clause" are identical. This is why KI-SHA is simply translatable into English as "and then", "afterwards", or "next". Both strategies of sectioning discourse may be found together in the same clause; thus, note the following segment of general routine.

- (19') a. KA ... tukatoka kule nyumbani
- b. KI Sasa tu-ki-sha kutoka ...
- c. NA tunakwenda mpaka ile dau ...
- a. "and then we *leave* home
- b. when we *finish leaving* ... (i.e. AFTER we leave)
- c. we go to the dhow..." (AB21m,Msa)

In view of the lexical power of *isha*, it is perhaps not surprising to find dialects in which *ha* suspends a narrative sequence in connection with KA, as in the following passage:

- (19'') a. KArukala
- b. KArukesh (*= ru-ka-ish*a)
- c. KArukenda (*= ru-ka-end*a) madukani
- a. "we ate
- b. (and then/when) we finished (i.e. eating)
- c. we went to the shops." (YH 16m, Vanga)

Despite the loss of the downshift marker KI in these dialects, it is relatively easy in most discourse contexts to recognize by means of the attached lexical verb if KI would be used in the urban dialects of Swahili. However, the "peak" constructions of (18) are lost in the rural dialects.

I have not observed the rhetorical arrangement represented in (19'') in any current urban dialect of Swahili, where KI would be used instead. It is, however, commonly observed in the central rural dialects of Swahili, where KI has totally merged into KA.

Having now associated the function of KI with downshifting, let us consider how the use of KI in past habitual discourse (e.g. past routines) fits into the general function of KI. The question is: by what perspective can the past habitual be considered a downshift? Downshift from what? This is a particu-

larly pressing question in view of the widespread use among languages of the same marker for progressive and habitual reference. Progressives occur in narrative to mark the part of "background" concerned with ongoing actions coincident with the temporal sequence of the main line. As such they are not in temporal sequence with the "foreground", and can be reordered with respect to perfective or punctual clauses without change in inferred temporal order. Thus, a progressive behaves on a discourse level like an adverbial clause does with respect to its associates main clause on a more local level in discourse (namely, the local level identified with the "sentence" in written texts).

Habitual or general discourse contrasts with narrative in that it refers to an *iterative* temporal sequence rather than a *single* temporal sequence. Therefore, it is, of course, true that there is some narrative implied by the iterative temporal sequence to which the iterative temporal sequence may be preposed or postposed (as noted by Labov (1972) and critically discussed in section 2.1. above). For example, there is some particular occasion, expressible as a narrative for (16), on which they *partied* both before and after two particular occasions on which they *arrived* in Mombasa. That is, they partied on some occasion *before* they left and then returned to Mombasa, and on some occasion *after* they returned to Mombasa. The shift from narrative to routine or procedure is from a specific time to a set of times with which the specific time of the *implied* narrative is unordered. The answer to downshift from what, then, is simply downshift from narrative.

The discourse "ordering" of habitual and narrative discourse depends on whether or not the rhetorical conventions of the occasion and/or culture favor deductive (habitual first then narrative) or inductive (narrative first) organization of information. It seems that *deductive* rhetoric is more usual in everyday discourse, favoring habitual-first discourse, at least in English and Swahili. The rhetoric of scientific discourse tends to follow the same pattern: first the hypothesis (habitual, i.e. "general"), then the experiment (narrative). Of course, in many situations the narrative *implication* of habitual/general discourse remains implicit.

It should be clear that *narrative implication* follows simply from the nature of habitual or general discourse, whether past or continuing into speech time. Habitual discourse is a set of narratives collapsed (and condensed from the specifics of any particular occasion) into a single discourse. Narrative implication may well be a universal feature of discourse whether or not it is specifically encoded into the grammar of a language. Under various

social circumstances, habitual discourse is explicitly converted to narrative. A simple example from English is found in (20), where 11-year-old YL converts the habitual discourse of BP's question into a narrative answer.

- (20) BP: ... how do you make your money - your spending money?
 YL: Like when I go to the store, like YESTERDAY I *went* to the store and my - when I *came* back my dad *gave* me a dollar for going...

(Upper case in this and the next example orients to narrative)

Sometimes the generalization represented by habitual discourse has a specific prototypical narrative behind it. Thus, in (21) two 18-year-olds' discourse about the personality of a mutual friend NC, one particular narrative experientially shared by LD and EY underlies the opening general statement.

- (21) LD: And it - it bothers NC to see when I don't wear make-up, huh? She yells it to the world.
 EY: (to a third person) You know what she DID? Oh my God! (to LD) Tell her! Tell her!
 LD: I was walking to go get my lunch n she *goes*... I just *looked* at her n *I go*...
 (The italicized verbs are in narrative sequence. Note in passing the progressive orientation of 'walk' to the narrative sequence.)

The preceding discussion on the relationship between habitual and narrative discourse may be represented diagrammatically as follows:

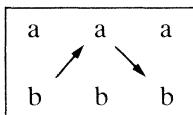


Diagram 1. Habitual Discourse.

The external boundaries of the diagram represent the envelope of the habitual discourse. The vertical dimension represents a single occasion on which events a and b are temporally ordered. The horizontal dimension represents recurrences of events a and b on separate occasions. Reading from left (earlier occasion) to right (later occasion), the arrows arbitrarily show that some event b occurs both before and after some other event a, but on different occasions. If the difference between occasions is ignored, as it is in the

external frame for habitual discourse, then, naturally events a and b are temporally unordered.

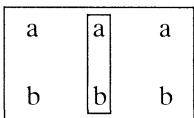


Diagram 2. The narrative implication of habitual discourse.

Diagram 2 retains the same meaning as Diagram 1 above. However, in Diagram 2 the narrative implication of the habitual discourse is singled out by an internal set of boundaries representing a single occasion. On this occasion events a and b are strictly temporally ordered internally, as they are, of course, on each occasion. Furthermore, the occasion represented by the narrative implication is temporally ordered with respect to some other *prior* occasion and some other *subsequent* occasion.

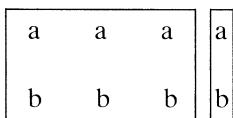


Diagram 3. deductive
rhetoric

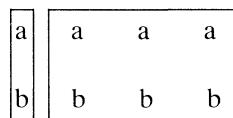


Diagram 4. inductive
rhetoric

Diagrams 3 and 4 represent the two different kinds of rhetoric, where the narrative implication of habitual discourse is made explicit. The deductive rhetoric postpones the narrative to the habitual discourse, as exemplified in (20) and (21) above. The inductive rhetoric preposes the narrative to the general discourse. This is typical of just-so stories or moral tales. It might be used, for example, in telling the Greek myth of the Trojan horse, and then ending with “So (that’s why they say) beware of Greeks bearing gifts.” Of course, one may also both prepose and postpone the habitual discourse to the narrative. We might call this *didactic* rhetoric. In any case, the narrative tends to be much richer in event structure (number of events explicitly expressed) than the habitual discourse abstracted from a series of narratives of similar occasions. Similarly, the number of events downshifted (e.g. by subordination) in narrative tends to be relatively small in number compared to the

number of events featured in “main” clauses, with the possible exception of languages, like Swahili, which may use downshift in order to create a peak construction, as in (18) above. In point of fact, however, with regard to Swahili, a simple eye inspection of any extended Swahili narrative reveals that KA is so much more frequent than KI marking that a count of each marker is superfluous. That is, peak is too sparingly used in Swahili narrative to affect the numerical superiority of KA over KI. On the other hand, there are other discourse genres in which the peak construction is much more common; for example, in the hypothetical discourse of rhetorical questions such as (22) below, where FT justifies his distaste for the violence of cowboy and gangster movies:

- (22) a. KI sasa mimi nkija
- b. KI nkikupiga wee mwili wako
- c. KI nkikukata
- d. TA utasikia raha?
- a. “So if I *came*
- b. and *struck* your body
- c. and *cut* you
- d. would you *enjoy* it?” (FT 19m, Msa)

In (23) below the overall downshift feature of KI in Swahili can be seen most clearly.

- (23) a. KI zamani sote sisi tukicheza kirikiri
- b. KA akaingia yule shetwani ‘soul.
- a. “Before, we used to *dance* kirikiri
- b. (and/but) then that demon (called) soul *came in* (lit. *entered*).”
(KB17m, Msa)

Inference from context leads to a past habitual interpretation of KI. In other contexts, the sequence might be more appropriately translated “while we were dancing kirikiri, soul (another musical style) came in” or “when we finished dancing kirikiri, soul came in”. KI simply encodes downshift. Other features of interpretation depend on further information in the discourse context.

A final observation about the evolution of KI in Swahili is of interest toward an understanding of the special role that narrative has played in the evolution of grammatical encoding in Swahili discourse. This can be seen from a comparison of Swahili with Girama (among other languages particularly closely related to Swahili in Northeast coastal Bantu).

As stated above, Bemba is more typical of Bantu than Swahili in encoding speech time on the clause-level in the main line of narrative discourse. It is also more typical of Bantu in encoding different degrees of pastness from speech time. This situation remains true in most of Swahili's closest relatives as well. For example, unlike Swahili, Giriama distinguishes "today past" (DZA) from "before past" (A). In addition, like Bemba, it does not distinguish perfect from (today) past (cf. Wald, 1976). Furthermore, like Bemba, it encodes both speech time and temporal sequence on the main line of narrative. However, unlike Bemba, Giriama encodes temporal sequence and speech time into a single marker, KA ("today" consecutive): KI ("before today" consecutive). The following parallel translations from a passage in the New Testament exemplify.

(24)	SWAHILI	GIRIAMA
a.	LI alipokuwa katika kumwenda	RI hata arihokala yunadza
b.	KA pepo akambwaga chini	KI pepo akimugwaga
c.	KA akamitia kifofa	KI akimutarura-tarura
a.	"and as he was yet a-coming	
b.	the devel <i>threw him down</i>	
c.	and <i>tare</i> him (i.e. gave him an epileptic fit)" (Luke 9:42)	

This is the only way in which Giriama and Swahili differ in the use of KI.

The Giriama system is indicative of an earlier stage of the Swahili system. As Swahili collapsed degrees of pastness into LI, KA became the consecutive marker not only for "today" (past or general, i.e. time reference *includes* "today"), as in Giriama, but also for the "before past". The collapse did not, however, extend to the past habitual. Thus, Giriama and Swahili maintain identical uses of KI in past habitual contexts, e.g.

(25)	SWAHILI	GIRIAMA
a.	KI ... kila mchana alikuwa	KI Bai kila mutsana were akifundisha hekaluni...
b.	KI watu wote walikuwa	KI atu osi makirauka... wakiamka mapema...
a.	"... every day he used to <i>teach</i> in the temple..."	
b.	(and) everyone used to <i>get up</i> early..." (Luke 21:37)	

By virtue of the extension of KA to narrative, the distinction between main line and downshift has become more general in Swahili than in Giriama. Narrative has become formally more distinct from past habitual discourse. Evi-

dentially, Swahili reanalyzed the “before” (or “remote”) past feature of KI, common to its single and habitual past uses in Giriama, as habitual. In grouping it together with the “subordinate” use of KI, the common feature became simply “downshift” both within and across discourse types. By retaining LI as a marker of orientation to the past, Swahili has become “aspect-prominent” but not “aspect-only”.

5. Conclusions and directions for research

With regard to the focus on narrative in linguistic (and psycholinguistic studies), the question asked at the outset of this paper was: why study narrative as opposed to some other discourse genre? We have seen that on the conceptual level narrative consists of four discrete properties: 1. distinction in “ground”, 2. temporal sequence, 3. reference to the past, 4. reference to single events. Altering any one of these properties results in a different genre of discourse. Narrative differs from past routines in referring to temporal sequences of *single* events. It differs from current routines and procedural discourse in referring to *past* events. It differs from subsections of any larger discourse type by having a “*main*” ground (reflected in a “*main*” temporal sequence).

Tannen (1982:5) speaks for the experience of sociolinguists in general in suggesting that narrative has been a common topic of study because it is a relatively common genre, is easy to elicit, and has (relatively) easily recognizable boundaries. Certainly much remains to be said about why this is so, e.g., the social and psychological underpinnings of the narrative genre. However, it remains to further empirical study to establish if narrative is indeed more common, easier to elicit (among all age groups in all languages), and has more easily recognizable boundaries than, say, past or current routines and procedural discourse. In any case, these considerations bespeak a concern with convenience in data collection and analysis, and perhaps stem from the fact that from an interpersonal point of view, narrative is inherently more interesting than other genres, since it is concerned at best with the transmission of personal experience. On the other hand, these considerations do not speak to a concern with grammar. Is it the case, for example, that narrative is grammatically richer than other discourse genres?⁹

The discussion of Swahili narrative and other discourse genres confirms the observation discussed in the beginning of this paper (re: Linde, 1974; Thompson, 1984), with respect to the particular grammatical bias of looking

at narrative alone without considering the relation of the use of grammar in narrative to its use in other discourse genres. The discussion of the downshifting function of KI within and across discourse genres illustrates the need to look at genres beside narrative in understanding the operation of grammatical systems in constructing discourse. It is evident from the discussion of Hausa, Bemba, Swahili and English, that languages differ in what aspects of discourse they grammatically encode. Hausa obligatorily encodes aspect, optionally encodes temporal sequence, and has no tense encoding markers; English optionally encodes aspect and temporal sequence, but obligatorily encodes tense; Bemba obligatorily encodes tense, aspect and temporal sequence; Swahili is intermediate between Bemba and Hausa in the encoding of tense. In all cases, these general characterizations of the encoding processes are subject to qualifications on the basis of "grounding" and discourse type. For example, most dialects of English suspend coding for modality but not tense in adverbial clauses, e.g. whenever they *asked* her, she *would* (= modal + *past*) tell them "for" whenever they *would* ask....

Despite its evolution toward an aspect-only system, Swahili shows resistance to the loss of the resource or explicitly marking the past. Thus, LI remains as an unambiguously past punctual marker, where it serves to orient discourse toward the past, or, if pastness is already established, toward anteriority in the past. The KA:KI distinction remains in past contexts to distinguish narrative from past habitual discourse respectively. More work needs to be done across languages to see to what extent the evolutionary processes affecting their grammars in discourse reveal a resistance of the past, or other prominent features of narrative, e.g. temporal sequence, singleness of events and grounding, to the collapse of distinctions.

Considering further the larger discourse restrictions on the encoding of temporal sequence, the following hypothesis may be offered.

(H1) No language encodes temporal sequence unambiguously on the clause-level for all discourse types.

This is clear for English, where temporal sequence is rarely encoded at all. In Swahili temporal sequence is encoded by KA on the clause-level, but in past habitual discourse KI is used. KI, however, is a marker of downshift, not temporal sequence, so that a KI-marked clause out of further context is not recognizable for temporal sequence. Similarly, in Hausa, the use of the subjunctive (in habitual/general discourse) and the "relative completive" (in narrative) to express temporal sequence is only recognizable in a context larger than the clause. A subjunctive or relative completive clause alone is

not recognizable as a clause in temporal sequence. With regard to the relative completive, the use of the same marker for temporal sequence and relative clauses suggests an original ground shifting function for the marker. The Bemba marking of temporal sequence in narrative bears further investigation. Givón (1982) proposes that historically the Bemba marker *-i/ele*, which marks temporal sequence, was an anterior marker, not a consecutive marker. That is, it was earlier a marker of deviation from temporal sequence. Thus, it appears to have originated as a marker of downshift. The route by which it came to mark temporal sequence needs further explication.

At the present state of knowledge about the encoding of temporal sequence, two further hypotheses may be offered.

(H2) If a language encodes temporal sequence at all on the clause-level, it will do so in the context of narrative discourse, but not necessarily elsewhere.

(H3) The encoding of temporal sequence has its origin in some other discourse function.

The most likely origins for regular temporal sequence marking is the marking of punctuality (as in the case of Swahili KA) and/or groundshifting (as in the cases of the markers sensitive to temporal sequence in Hausa and Bemba).

Finally, more attention needs to be paid to the relation between lexical and grammatical encoding in the construction of discourse. Most recent work in discourse appears to assume that either languages do not have a lexical structure, or the lexical structure is similar or the same in most languages, e.g., distinguishes punctual and durative verbs. As discussed above, the Swahili verb lexicon shows indifference to this dimension. Consequently, the verb marking system is fully productive, without any lexical restrictions. A very important exception, in my view, to the general neglect of the study of lexical-grammatical interaction is Pawley's (1984) study of Kalam as a language with a small set of verbs of fairly abstract meaning. Equivalents to the much larger set of verbs of English, and most other languages, are accomplished by verb sequences, i.e. little discourse units in themselves, e.g. "hunt (for food) and then eat" is expressed by the temporal sequence "(go)-kill-carry-come-bake-eat" (in that order). Here the "narrative implication" of lexical items is seen even more clearly and regularly than in the comparison of the English and Swahili verb lexicon, e.g., *carry* vs. *beba* "take and transport on upper part of body". It follows from this that languages not only differ in the encoding of semantic features (like punctual/durative) into lexical structure, but also in

how they map events onto verbs and then clauses. It is alien to English to conceive of verbs of transportation as punctual. One may punctually “take” or “grasp” something but one can only duratively “carry” or “hold” it. In Swahili, only larger discourse context will tell if a “taken” object is transported. A common way of expressing transportation is simply a following clause with a directional verb (like come in (10)e). Hence two clauses for Swahili where English commonly manages with one.

NOTES

1) As Hopper (1979) notes, inversion was much more characteristic of narrative during the Old English period. See the end of fn 4 below for one common use of inversion extending well into the Middle English period.

2) The characterization of productivity/creativity in terms of an infinite number of purposes obviously derives from Chomsky's model for characterizing the linguistic creativity of sentence. It should be noted that Chomsky's innovation lay in his proposal for how to model linguistic productivity at the sentence level. The general issue of grammatical productivity is traditionally of central importance to linguistic description.

3) This is not to say, for example, that the choice between lexical and grammatical encoding of events is language-independent, but that all languages recognize a set of events which are encoded lexically into verbs, forming the nucleus of clauses, and leading to the identification of narrative sequences. The language-dependent aspect of lexical encoding is discussed further later on in the text.

4) For example, Mithun notes that *aqa* in the following example from Kathlamet is glossed ‘then’ by Boas, but translated as ‘when’:

aqa ió:maqt yaXi iqcxé:Lau Ictó:pa
THEN it.died that monster they.two.went.out
“WHEN the monster was dead, they went out”.

Similar phenomena are pointed out in the discussion for other unrelated languages, e.g. Mohawk and Gunwinggu. In each case the clauses are in temporal sequence, but whether or not the sequence is reversible is not discussed. It is evident that forms like *aqa* are temporal pronouns meaning ‘at that time’. It is worth pointing out in passing that the Germanic systems of subordination evolved from a similar system. As late as the mid 15th century examples of THEN introducing a subordinate time clause are still found in English, e.g. THEN (=when) hys houndys began to baye, that harde (=heard) the jean (=Genoan) there (=where) he laye. (1440, OED *then* 6.) In the case of Germanic, however, clause-internal word order signals the difference between main and subordinate clause. Thus, subordination was marked in English with SV order, while a following associated main clause had VS. Hence THEN SV = “when SV” and THEN VS = “then SV”.

5) CR is used in examples (8) and (9) to refer to the “relative” form of the completive. This form is *kà* or Ø depending on the person of the subject marker. In (9), RM refers to the ‘relative marker’ *dà*, cf. *wàn-dà* (demonstrative + RM) in (8); and CM refers to the non-relative completive aspect, formed by lengthening the vowel of subject marker or *-n*, corresponding to the use of Ø/*kà* respectively in CR. With regard to (9), the use of the RM alone is quite common in West African lan-

guages, regardless of genetic affiliation, as a marker of temporal clauses, as if condensed from '(time) which'.

6) It is important to realize that durability and punctuality are not "objective" features of events, but rather of how events are lexically encoded. Thus, for example, the English verb *burn* is a (durative) process verb. It implies the initial punctual event "catch on fire/ignite (intrans.)" and is implied by the terminal punctual event "burn up" or "burn down". In contrast, the English verb *fall* has duration in time, but is not graced with idiomatic lexical expressions for punctual events which may be associated with falling, such as "get destabilized" ("slip"? or "hit the ground (i.e. finish falling)". That is, *it burned* does not imply "it burned up (to completion)", typical of process verbs, while *it fell* does imply "it hit the ground". Where languages, like English, do make a lexical distinction for punctuality between types of verbs, it seems that the distinction is based on "real world" considerations of the relative length of time it takes for a process to reach completion. Thus, "burning up" usually takes longer than "falling".

7) In Swahili, these aspects and more are marked by KI in certain contexts, as discussed in more detail later in the text.

8) As a matter of fact, in context (11)c initiates a more extensive reorientation from (11)b than is apparent from the citation. This is because *kwenda* 'go' in (11)a refers to Uganda, not Saudi Arabia. As the narrative progresses it becomes clear that (11)c-e is relevant to explaining how AH became a teacher of Arabic and Islam in Uganda.

9) In certain respects, involved in the development of syntactic studies of discourse, narrative is indeed "richer" than most other genres, namely, in the complexity of cross-clause *nominal* relations. The number of references to nominal entities and their persistence in narrative discourse has favored this type of discourse for analysis of topicalization, passivization, pronominalization, etc.

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