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Planning, Discourse Marking, and the Comprehensibility of International Teaching Assistants

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An examination of the planned and unplanned production of 24 nonnative-speaking teaching assistants indicates that there is a greater difference between the 2 conditions in the degree of discourse marking than in grammatical accuracy. In planned production, discourse moves were more likely to be marked overtly and explicitly than in unplanned production, whereas the level of syntactic and morphological errors differed only slightly. This increased marking in the planned condition appeared to contribute significantly to comprehensibility, suggesting that explicit marking of discourse structure is a crucial element of the comprehensibility of nonnative-speaker production.

An increasing number of universities have come to depend on nonnative-speaking (NNS) graduate students to teach introductory undergraduate courses. There has been a simultaneous rise in the number of complaints from undergraduates, their parents, and other members of the university community regarding the comprehensibility of the speech of these international teaching assistants (ITAs). As a result, more and more TESOL professionals have been asked to develop programs that will improve the ITAs' communicative skills and teaching effectiveness. In order to develop successful programs, however, it is first necessary to establish what it is about ITA discourse that often renders it incomprehensible to the undergraduates toward whom it is directed.

The first thing that undergraduates often react to in their ITAs' speech is nonnativelike pronunciation, and clearly this is an important factor as previous research into ITA production has shown (Anderson-Hsieh & Koehler, 1988; Carrier et al., 1991; Gallego, 1990). However, it is not the only issue. Interviews with undergraduates who were asked to rate ITA comprehensibility (Williams, 1990) revealed that initially

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ITA pronunciation is often a problem but may diminish in impor-tance over time. Many of the undergraduates who had had an ITA over an entire term maintained that the ITA's accent was an obstacle in the beginning but that they eventually adjusted to it, making the appropriate phonological substitutions and even reporting that they became accustomed to systematic grammatical errors. This suggests that there may be important aspects of the comprehensibility problem other than pronunciation and grammar. This study will focus on one such area: the contributions which discourse marking makes to comprehensibility.

COMPREHENSIBILITY OF ITA DISCOURSE

The "ITA problem" is by now well known to TESOL professionals and to undergraduates alike. There have been several notable attempts to determine why some ITAs are so difficult to understand. Rounds (1987) notes in particular that in comparison to native-speaker (NS) TAs, ITAs frequently do not adequately elaborate the key points of their presentations. They often do not name important steps, mark junctures explicitly, or make cohesive links between ideas. Williams, Barnes, and Finger (1987) came to similar conclusions, finding that ITAs often do not repeat or rephrase important points; digress from the main line of thought and move on to new topics without warning; omit discourse marking to overtly frame illustrations, examples, and axioms; and do not summarize material. It should not be surprising that listeners have trouble comprehending when all of these aspects of discourse structure are left unmarked. According to Tyler (1988), ITAs either do not use or they misuse various lexical, syntactic, and prosodic cues on which NS listeners depend to interpret discourse. Taken together, these omissions or misuses can seriously reduce com-prehensibility. Tyler maintains that unsuccessful ITAs consistently do not orient their listeners adequately to the relative importance of ideas as well as to how they are linked to one another. Tyler (1989) tested this notion, using undergraduate judges and found that the increased and accurate use of discourse markers greatly increased comprehensi-bility scores. She compared undergraduate evaluations of the actual production of ITAs with their evaluations of a version that contained the same information but had been altered by inserting and changing various macro- and microcues (see Chaudron & Richards, 1986).

Research on the effectiveness of NS explanations is reported by Brown (1978). In a review of the relevant literature, he reports that

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good explanations usually involved task orientation statements, such as "Now, let's look closely at . . . " [Furthermore,] successful explanations contained signposts such as "There are three main areas. First . . . " They also contain statements linking various elements of the explanation, such as, "So far, we have looked at . . . Now." (p. 11)

This kind of marking acts as an indicator or speaker advance of overall planning (Faerch & Kasper, 1983). Such markings are also the ones that were missing or misused in the ITA discourse in the studies named above. Chaudron and Richards (1986), in a study of second language learner (SLL) comprehension of university lectures, used the term *macromarkers* to describe words or phrases which "are explicit expressions of the planning of lecture information" (p. 123). They found them to be an important factor in facilitating SLL listening comprehension. However, because the listeners in the case of the present study are NS undergraduates, the results of the Chaudron and Richards research, which used SLL subjects, can only be generalized with caution.

PLANNED VERSUS UNPLANNED PRODUCTION

In order to determine the effect of using discourse marking on comprehensibility, it is necessary to examine the production of ITAs with and without such marking. In an effort to address this issue in context, that is, to examine the marked and unmarked discourse of ITAs in naturally occurring production, this study compares the planned and unplanned explanations of ITAs. It has already been noted that the use of such marking may be related to the degree of planning involved in production (Crookes, 1989). It is perhaps belaboring the obvious to assert that planning has a significant effect on oral production. A number of studies attest to this, in the production of both NSs (Danielewicz, 1984; Givón, 1979; Ochs, 1979) and NNSs (Crookes, 1989; Ellis, 1987; Tomlin, 1984). A comprehensive review of research on the effect of planning on both NS and NNS production appears in Crookes (1988).

Much of the work in this area of second language acquisition research involves the construct attention to speech, the central idea being that unplanned production requires less attention than planned production. The validity of this construct has been debated in both sociolinguistics and second language acquisition research (Bell, 1984; Preston 1989; Rampton, 1987; Sato, 1985; Wolfson, 1976). One of the greatest difficulties in using attention to speech as a variable is ascertaining what

sorts of tasks demand the most attention. Sato (1985) questions the unitary nature of the notion attention, pointing out that certain tasks "require a great deal of attention, but this attention must be paid, not simply to language form but also to other demands of real-time discourse production: recall and encoding of rhetorical structure, lexical items, clause sequencing, etc." (p. 195). In other words, increased attention need not necessarily lead to increased accuracy in the use of grammatical forms.

Ellis (1987) maintains that the effect of increased attention to form and of increased planning time are separable, citing the work of Hulstijn and Hulstijn (1984), who found that time pressure alone had no effect on accuracy in the use of two Dutch word-order rules, whereas focus on form increased accuracy significantly. Ellis (1989) examined the effect of planning time on accuracy in grammatical morphology. He found that morphological accuracy was generally the highest in tasks in which speakers were given more time to plan. Tasks with greater time pressure showed more variation. Crookes (1989), on the other hand, found that in the planned condition, NNSs produced more complex speech and a greater variety of lexis than in the unplanned condition but that accuracy in the 2 conditions was not significantly different. In investigating the organization of discourse, he found that there was greater use of discourse markers in the planned condition in one of his experimental tasks. The present study does not attempt to separate these issues of planning opportunity and attention to form, however. In the planned condition, NNS subjects were given both extensive planning time and were asked to concentrate on specific aspects of their presentations.

Research in psycholinguistics and cognitive science suggests that there are different kinds of planning. Within the field of second language production, the work of Faerch and Kasper (1983) and Lennon (1984), among others, points to differences between long-range macroplanning, on the one hand, and more local microplanning, on the other. The first affects overall semantic and syntactic organization of discourse; it is more subject to planning. The second affects local organization and links between propositions as well as lexical selection and tends to be mapped out as the speaker goes along. This study focuses on the former.

Planning is used as the independent variable in this study, in an attempt to determine the effect of the use of discourse markers, which have been associated with planning, on the comprehensibility of NNS production. NSs are included in the study to ascertain whether such differences are characteristic of the production of NSs and NNSs alike or whether the effect of planning is of particular importance for the comprehensibility of NNS production. It was hypothesized that

1a. planned ITA production would contain more overt marking of discourse function than unplanned ITA production (cf. Crookes, 1989);

1b. unplanned ITA production would contain more unmarked key statements than planned production (a key statement is one that is central to the structure of the argument or explanation, Brown, 1978);

2a. NS production would contain more overt marking as to discourse function than that of ITAs (cf. Tyler, 1988; Williams, Barnes, & Finger, 1987).

In both 1a and 2a, "more overt marking" is taken to mean a greater absolute number of markings as well as more explicit marking. In light of this definition, it was hypothesized that

2b. ITA production would contain more unmarked key statements than that of the NSs (cf. Tyler, 1988; Williams et al., 1987).

Next, the link between discourse marking and comprehensibility needs to be established. To this end, it was hypothesized that

3. comprehensibility would increase with more overt marking of discourse function (cf. Chaudron & Richards, 1986; Tyler, 1989).

Finally, following the work of Crookes (1989), an aim of this study was to determine whether other differences in the planned versus unplanned condition, such as syntactic or morphological accuracy and complexity, might account for any differences in comprehensibility.

THE STUDY

Subjects

The data in this study were collected over a 2-year period from 24 teaching assistants in various university departments at a major U.S. university. Eight were native Korean speakers and 14 were native Mandarin speakers. All had studied English formally for between 5 and 12 years. They had been in the United States for between 3 months and 4 years. During the time of the study, they were all participating in a preparation course for ITAs. Also included in this study were 5 native-speaking teaching assistants (NSTAs). These baseline data were necessary in order to determine the effect of planning on the use of discourse marking and comprehensibility in general before going on to make claims about its effect on NNS production.

Task

Each of the TAs was videotaped on two separate occasions, 2 weeks apart as part of a 10-week ITA preparation course. On the first occasion, the participants were permitted to choose their own topic. They were asked to explain a concept or specific problem that would be covered during a first-year introductory course in their field. They were given a week to prepare their presentations. They were allowed to bring note cards, but reading was not permitted. In the second instance, the TAs submitted a list of 10 topics, also from introductory courses in their fields. The instructor chose from among them, giving each TA approximately 3 min to plan the presentation. Thus, in the first task, planning was both possible and encouraged, whereas in the second task, little planning was possible. In each case they were given 7 to 8 min to speak. The subjects also submitted what they considered to be the main idea of their presentation, to be compared later with that named by independent raters.

Instruction in the use of discourse markers and effective packaging of information was a major focus in the ITA preparation course which preceded the data collection. The ITAs were told that these tasks were tests, and they were aware that a good performance would include the accurate and explicit use of these markers. This usage had been practiced previously in more abbreviated exercises and activities in class by all the ITAs in this study and participants were reminded of its importance prior to their presentations. It is likely then that they used discourse markers to the extent that they were able within the constraints of the tasks.

The NS task was somewhat different; therefore, these participants cannot be called a control group. The NS data consist of segments taken from actual classes. This corpus also includes instances of relatively planned and unplanned speech, but NSTAs' tasks cannot be viewed as comparable to the ITAs' tasks. The planned speech consisted of NSTA presentations of problem sets and reviews of lecture material. All of the NSTAs spoke primarily from notes, though it is quite likely that some portions of their presentations were also extemporaneous. The unplanned speech for the NSTAs occurred when a student, by prearrangement with the researcher, asked the NSTA to go over problems not assigned specifically for that day or to review material from a previous unit. However, these segments were not as long as the unplanned presentations of the ITAs. NS participants in the study received no instruction of any kind but were interviewed after their presentation regarding the extent of their planning. All reported general planning of ideas and explanations of specific problems, and using notes. All said they did not plan the actual language they would use.

The NSTA and ITA tasks are clearly different, but topics, length of presentation, and planning opportunity make the comparison between the 2 groups a reasonable one.

Data Analysis

Discourse Marking

The data analysis was carried out in several steps. Before turning to the question of comprehensibility, it was first necessary to establish the effect of planning on the presence and explicitness of discourse marking. The use of Chaudron and Richards' (1986) discourse cues, specifically macrocues, was the focus of this investigation, in particular, the level of explicit marking of key statements in ITA and NSTA explanations. As noted above, a key statement is one that is central to the structure of the argument or explanation. One way a key statement may be marked is by indicating speaker intention, as in Example 1:

1. *Today I want to spend a few minute* to explain what trigonometric function are.

Another form of marking is the identification of the actual function of the statement within the explanation, as in Example 2:

2. The second element of physiology is study about transport system. *For example,* our heart will transport blood to all the part of our body.

Some statements may be marked for both speaker intention and function in the explanation, as in Example 3:

3. *Now I'd like to give you the definition* of molecule.

In contrast, some statements may go unmarked, as in Examples 4 and 5:

4. This cotangent involving adjacent and opposite.

5. This the change of the chromosome in cell division.

In fact, Example 4 was meant to be a definition or at least instructions for using the trigonometric function. Example 5 was meant as a summary of the previous material.

There are various types of key statements contained in these presentations. The following 6 types of statements were examined in this study: definition, example/illustration, restatement/rephrasing, identification/naming, introduction/new topic, and summary/review. The coding of statement type as well as the discourse cues was done by the author and a graduate student. Disputed items, which represented

9% of the corpus, were removed from the analysis. Examples of key statements included in this study are given below. Some are overtly marked, containing reference to the discourse function itself, whereas others show less explicit marking.

  6. Definition: *I give you the definition of instantaneous velocity.* [a definition follows]

  7. Example: *We know in the early 1976 Challenger falling down.* [follows a brief introduction on the topic of technological failure]

  8. Restatement: *That means between these times the car we think it's the same acceleration.* [follows an example of a moving vehicle as an illustration of the principle of constant acceleration]

  9. Identification: *This is called harmonic oscillator.* [follows a description of the piece of equipment]

  10. Introduction/new topic: *I want speak something about temperature.* [the first statement in the presentation]

  11. Summary: *That's what it mean a binary operation.* [follows a lengthy explanation and examples of binary operations]

Comprehensibility

The comprehensibility of the various explanations was determined in the following way. First, the videotapes of both the NSTAs and ITAs were played to 25 undergraduates and 10 ESL specialists. The ITA planned and unplanned presentations were approximately 7 to 8 min long. Excerpts of the NSTA classes, including planned and unplanned portions, ranged from 7 to 10 min in length. The tapes were played to these 2 groups in batches of 8 to avoid fatiguing the raters. Speakers were presented in random order. Raters were asked to evaluate various components of the speakers' language proficiency and ability to explain on a scale of 0 to 3, similar to that used in the Speaking Proficiency English Assessment Kit (SPEAK) with a total possible score of 18 (see the Appendix). Clearly, on the language proficiency portions, the NSs would be expected to receive the maximum score of 3. The scores of the 2 rater groups were averaged to yield a mean for each group's evaluations of the ITA planned and unplanned presentations and the NSTA presentations, giving a total of 6 scores.

The raters had not been informed of the difference between the presentations; they were simply told that they would see each ITA twice. Post-rating interviews with both sets of raters were conducted,

during which they were asked to rate which 2 ITA presentations in each batch of 8 were the easiest to understand.

In order to verify the self-report of their comprehension level, the raters were also asked to answer two questions for each presentation: First, they were asked to name the topic and second, to name the main idea. More specific questions were not asked since much of the material was difficult for the undergraduates as well as the ESL specialists to understand in detail. The self-reported comprehensibility scores alone have high face validity because what undergraduates perceive at this level may, in turn, determine whether they simply tune out in the first place (see Carrier et al., 1991). The comprehension questions were added simply to corroborate these results.

RESULTS

The first general research question concerns the relationship between planning and discourse marking for ITAs and NSTAs. In order to address this issue, analysis of the production data focuses on two questions: first, whether certain moves are marked at all and second, the degree of explicitness in marking. The number of marked statements in the 6 categories under investigation for the 2 groups is shown in Table 1. The totals for all 24 ITAs are combined. The first column in each section shows the number of key statements made in each category by each speaker group and in each condition. The second column in each section shows the percentage of marking of any kind. The NSTAs, of course, have lower numbers since there were only 5 of them, compared to 24 ITAs, and since their unplanned segments were much shorter than their planned segments. Chi-square tests were

TABLE 1

Marking of Key Statements

	ITA unplanned		ITA planned		NSTA unplanned		NSTA planned	
	Key stmts	% marked	Key stmts	% marked	Key stmts	% marked	Key stmts	% marked
Definitions	81	55.56	69	68.12	5	80.00	20	70.00
Illust/examples	62	61.29	77	77.92	17	70.59	37	62.16
Restatements	73	41.10	85	64.71	21	52.38	42	59.52
Identifications	75	49.33	70	58.57	9	55.56	24	54.17
Introductions	16	62.50	21	76.19	0	0.00	16	87.50
Summaries	11	54.55	20	70.00	2	100.00	11	81.82
Totals	318	52.20	342	68.13	54	62.96	150	65.33

performed on the ITA data in order to show whether the degree to which they mark their key statements at all differed in their planned and unplanned production. This does not reveal differences in how they mark them, only whether they mark them. The 2 conditions were shown to be significantly different, $\chi^2(1, N = 24) = 16.83$, with Yates correction factor). No statistical analysis was done on the NSTA data because the planned and unplanned data sets were not comparable. However, a comparison of the percentages of marked key statements (planned, 65.33%; unplanned, 62.96%) suggests that the difference between the 2 conditions for NSTAs is not significant.

The second issue to be addressed is the degree of explicitness. As mentioned earlier, some marking contains reference to speaker intention or some sort of advance warning regarding the information that is about to be given, as in Examples 1 and 3. First, the speaker announces what he or she is going to do, then does it. This presumably would increase the salience of the point being made. In other instances, there is no such announcement, but the utterance contains some sort of identification of its function, with a lexical item actually naming the function, such as in Examples 2 and 3. These are what are called explicit markers in Tables 2 through 5. In other cases, the function of the discourse move is signaled implicitly, with the clarity of the move's function depending more on other contextual factors in the presentation. In Example 12, we see a more implicitly signaled introduction or topic shift. Up to this point, the ITA had been speaking in rather general, theoretical terms. Algebraic calculations were only introduced into the lecture after the following statement:

12. We talk a little bit algebra.

This marking of function is less explicit than in the previous examples (*We talk a little bit algebra* vs. *Now I'm going to show you the algebraic calculations behind these ideas*) but still contains some indication of the speaker's intention. In contrast, in unmarked utterances, there is no such identification, and the function of the utterance is relatively difficult to discern. Example 13 is actually a definition that was used to introduce this topic. Prior to this utterance, the ITA had been discussing nonvector quantities and operations and was moving on to the new topic of vectors.

13. Vector cannot stand for by only one number.

The lack of markings, either to introduce the topic or to identify this utterance as a definition, along with some syntactic/lexical problems (*A vector cannot be represented by only one number*) make this statement difficult to process.

Tables 2 through 5 show the degree of explicitness in the marking

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of the 6 types of statements for the 2 speaker groups under the 2 conditions.

In each of these tables, the Total column represents only those statements which were marked in some way and therefore a portion of the total reported in Table 1. For instance, only 55.56% of the definitions were marked at all in ITA planned presentations. Therefore, the total appearing in Table 2 for this category is 45. This total is broken down in each table in terms of kind of marking. Among ITAs, both the number and the proportion of more overt forms of marking, that is, those statements containing speaker intention or explicit mention of function, increases in planned production. The same cannot be clearly said of the NSTAs. Differences between the ITAs and NSTAs are also not clear. In planned production, the absolute presence of marking seems to differ little between ITAs and NSTAs, although the kinds of marking that the 2 groups employ does differ somewhat. In unplanned production, on the other hand, the absolute use of marking differs considerably, whereas the kind of marking does not.

The second general research question concerns the link between

TABLE 2

Kinds of Marking in Key Statements: ITA Unplanned

	Total	% Speaker intent	% Explicit	% Implicit
Definitions	45	28.89	53.33	17.78
Illust/examples	38	7.89	68.42	23.68
Restatements	30	13.33	70.00	13.33
Identifications	37	0.00	67.57	32.43
Introductions	10	50.00	20.00	30.00
Summaries	6	16.67	33.33	50.00
Totals	166	15.66	59.64	23.49

TABLE 3

Kinds of Marking in Key Statements: ITA Planned

	Total	% Speaker intent	% Explicit	% Implicit
Definitions	47	34.04	59.57	6.38
Illust/examples	60	21.67	73.33	5.00
Restatements	55	16.36	78.18	5.45
Identifications	41	2.44	75.61	21.95
Introductions	16	75.00	25.00	0.00
Summaries	14	50.00	42.86	7.14
Totals	233	24.89	66.95	8.15

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TABLE 4
Kinds of Marking in Key Statements: NSTA Unplanned

	Total	% Speaker intent	% Explicit	% Implicit
Definitions	4	0.00	50.00	50.00
Illust/examples	12	33.33	50.00	16.67
Restatements	11	18.18	63.64	18.18
Identifications	5	0.00	40.00	60.00
Introductions	0	0.00	0.00	0.00
Summaries	2	0.00	100.00	0.00
Totals	34	17.65	55.88	26.47

TABLE 5
Kinds of Marking in Key Statements: NSTA Planned

	Total	% Speaker intent	% Explicit	% Implicit
Definitions	14	35.71	57.14	7.14
Illust/examples	23	21.74	65.22	13.04
Restatements	25	16.00	68.00	16.00
Identifications	13	0.00	76.92	23.08
Introductions	14	71.43	28.57	0.00
Summaries	9	55.56	33.33	11.11
Totals	98	29.59	58.16	12.24

comprehensibility and discourse planning. By establishing a link between planning and marking, on the one hand, and explicit marking and comprehensibility, on the other, it is possible to establish an indirect connection between planning and comprehensibility. Table 6 displays combined scores of how the undergraduates and ESL specialists rated

TABLE 6
Combined Ratings Given to NSTAs and ITAs

	Undergraduates		ESL specialists		
	M	SD	M	SD	t
ITA unplanned	9.56	.75	10.63	.70	8.89*
ITA planned	10.81	.86	12.23	.78	8.11*
t	4.95*		7.70*		
NS	17.73	.25	17.78	.18	

*$p < .01$.

the 3 sets of data. The NSTAs are not divided into planned and unplanned because both were part of a single presentation.

The NSs are indisputably rated by both groups as the more comprehensible and the more skilled at providing explanations. There is a less drastic but still noticeable difference between the evaluation of the ITA planned and unplanned presentations. Matched t tests show that this difference is significant for both rater groups: undergraduates, $t(24)$ = 4.95; ESL instructors, $t(9) = 7.7, p < .01$. It is also interesting to note that the scores of the 2 rater groups for the ITAs are somewhat different, indicating that the ESL professionals, who are usually in charge of ITA programs, may not always adequately reflect the views of undergraduates. The ESL professionals consistently rate the ITAs higher than the undergraduates for both planned and unplanned presentations, as demonstrated again by matched t tests: planned, $t(34)$ = 8.11; unplanned, $t(34) = 8.89, p < .01$.

In the post-rating interviews, raters generally judged the planned production higher than the unplanned. In each batch of 8, raters were asked to pick the 2 speakers whom they thought were the most effective. Planned presentations were chosen by 78%, 83%, and 67% of the raters for the 3 batches. The fact that the percentages are even as low as this is probably accounted for by the fact that 2 of the ITAs had higher language proficiency, thereby enhancing both of their presentations. The responses to the comprehension questions, with a few exceptions, demonstrate that the raters were at least able to understand the main idea of the presentations, in both conditions. Ninety percent of the ESL specialists and 92% of the undergraduates were able to identify the main idea as stated, or nearly so, by the ITA and NSTA speakers.

Finally, in order to determine the importance of other factors in comprehensibility ratings, the degree of morphological and syntactic accuracy and complexity was examined. These data are reported in Table 7. A 2-min section from each of the ITA tapes was scored for these features, following the method suggested by Bardovi-Harlig and Boffman (1989). The measure of complexity is clauses/T unit. The

TABLE 7

Grammatical Accuracy and Complexity for ITAs

	M clauses/t units	SD	t	M error clause	SD	t
Unplanned	1.20	.20	4.92*	.54	.13	ns
Planned	1.44	.14		.62	.12	

*$p < .01$.

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measure of accuracy is errors/clause. The 3 error types described by Bardovi-Harlig and Boffman—syntactic, lexical-idiomatic, and morphological—were combined for a general error count. Differences in complexity were found to be significant, $t(23) = 4.92$, $p < .01$, in contrast to differences in accuracy, which were not.

DISCUSSION

For the ITAs, the planned explanations were found to contain more explicit marking and more of it than the unplanned explanations. They also contained fewer unmarked key statements. Thus, Hypotheses 1a and 1b were supported. The same difference was not found in the planned and unplanned production of the NSTAs. There seems to be minimal difference between the planned and unplanned conditions for the NSTAs, at least insofar as the absolute use of marking is concerned. There is a greater degree of explicitness used by the NSTAs in the planned versus the unplanned condition, although it is not clear how strong this trend is, given the small quantity of data, especially in the unplanned condition. Unsupported was the idea, contained in Hypotheses 2a and 2b, that NSTAs do considerably more marking than ITAs, at least in the planned condition. This is contrary to earlier findings by Williams et al. (1987) and Rounds (1987). Again, because of the small amount of unplanned NSTA data, it is difficult to compare, but it appears that the kind of marking which NSTAs and ITAs do in the unplanned condition is also similar. In addition, Table 1 shows that in the planned condition, the degree to which NSTAs mark their discourse moves at all is very similar to that of the ITAs. However, ITAs tend to be somewhat more explicit, as shown in Tables 3 and 5.

The biggest difference remains between the ITA planned and unplanned conditions. Yet, in spite of the sometimes minimal difference in marking and explicitness between the ITA planned and the NSTA data and, in some cases, even the more explicit marking by ITAs, undergraduate and ESL specialist raters understood the NSTAs far more easily. This would indicate that the NSTAs do not need to mark as much or as explicitly as the ITAs in order to be understood; the NSTA presentations are easily understood without their doing so. For the NSTAs, the lack of planning time seemed to make much less difference in whether and how much they marked their key statements. As NSs, they have other ways of making their presentations comprehensible. Tyler's research (1988, 1989) certainly indicates that comprehensibility, or lack thereof, has multiple sources. It is likely that NSTAs choose to exploit other means of expressing themselves clearly, rather than make extensive use of macromarkers. For ITAs, on the other

hand, the increased and more explicit use of marking appeared to enhance comprehensibility considerably, judging by the evaluations of both rater groups.

It is, of course, possible that there were other differences between the planned and unplanned conditions which had little to do with marking, namely, grammatical accuracy and complexity. As can be seen from Table 7, it appears that differences in accuracy level cannot explain the differences in ratings, since the 2 presentations do not differ significantly in this respect. This is consistent with Crookes (1989), who used error-free T units as a measure of accuracy and found no significant differences between the 2 conditions. As regards complexity, the planned production is indeed more complex than the unplanned, although how this might affect comprehensibility is unclear (but see Chaudron, 1983). Again, these results are similar to those of Crookes, who found that on several different measures, production in the planned condition was more complex but that the differences did not reach significance.

Differences in phonological accuracy were not specifically measured here and are an obvious area for further investigation. Speaking rate has been shown to be an important factor in comprehensibility (Anderson-Hsieh & Koehler, 1988). The planned speech did appear to be somewhat more rapid; T-unit counts for the 2-min coded segments were slightly, though not significantly, higher. However, since T units are not a measure of amount of speech, these figures only suggest a difference. This again is an area that needs to be explored further. However, even if these areas are shown to be of importance in comprehensibility, we are still left with the question of pedagogical implications. It has already been noted that modifying pronunciation is notoriously difficult, whereas teaching and learning the use of discourse marking may prove far easier (see Mendelsohn, 1991–1992).

These findings suggest that ITAs need to use more explicit discourse markers in order to overcome other comprehensibility difficulties that may be the result of more local problems, such as pronunciation. This also means, insofar as the use of discourse markers is concerned, that ITAs should not necessarily be targeting NS behavior. In this instance, they may need to go beyond it in order to achieve the same result as the NSTAs in terms of comprehensibility. This is an area of strategic competence that can be taught and may have an immediate effect on undergraduates' comprehension. ITAs, and perhaps other NNSs, can compensate for skills that they lack by using strategies which do not precisely mirror the behavior of NSs. This may be particularly important for NNSs who appear to make little progress in areas such as pronunciation, in spite of instruction. In sum, the explicit marking of functions within explanations appears at once to have direct impact on

comprehensibility and to be relatively easy to learn. Incorporating instruction in their use may go some way toward alleviating the "ITA problem," and may be usefully extended to the teaching of oral skills to other NNSs as well.

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APPENDIX

Evaluation of Teaching Assistants

After you watch the video tapes of various teaching assistants, you will be asked to rate them. Some are native speakers; some are nonnative speakers. We want to know whether they were easy or difficult to understand. Pay attention to the way they *explain* as well as the way they actually *speak*. You will be asked to rate their pronunciation, grammar, fluency, vocabulary, and their ability to handle questions and present information clearly. If you think that there are virtually no problems in the speaker's presentation in a given category, you should give him or her a score of 3.

For each speaker, please record your response on the answer sheet provided.

Language Proficiency

1. Pronunciation

0 Speaker makes frequent errors in pronunciation and is virtually unintelligible.
1 Speaker's presentation shows frequent nonnativelike pronunciation which seriously hinders comprehensibility. Key words are often mispronounced.
2 Speaker's nonnativelike pronunciation occasionally hinders comprehensibility, but most of the speaker's utterances are intelligible, making the occasional incomprehensible portions easier to understand from context. Key words are pronounced with reasonable accuracy.
3 Although speaker may not have nativelike pronunciation, his or her speech is completely intelligible.

2. Grammar

0 Speaker shows virtually no control of grammatical structures of English; speech is unintelligible as a result.
1 Speaker shows limited grammatical control, but frequent lapses often make speaker's production unintelligible.
2 Speaker shows good grammatical control although some errors may occasionally require the listener to infer meaning from context. There may be some errors in complex structures.
3 Speaker's grammatical errors are so minor as to cause no difficulties in comprehension, even in complex grammatical structures.

3. Fluency

0 Speech is so halting and filled with nonnativelike pauses as to render most of speaker's utterances unintelligible. Only routine phrases are produced fluently.
1 Speech is halting and contains pauses in nonnativelike places, often making presentation difficult to follow.
2 Although speech may not be completely smooth, speaker's presentation was easy to follow.
3 Speech is produced smoothly without unnatural pauses or hesitations.

4. Word Choice/Vocabulary

0 Vocabulary is so limited and word choice so inappropriate that even the simplest explanations are incomprehensible.
1 Limited vocabulary and inappropriate word choice often renders the speaker unintelligible.
2 Limitations on vocabulary and inappropriate word choice are evident but speaker remains largely intelligible. Gaps in vocabulary may lead to circumlocution.
3 Speaker shows rapid and easy command of general vocabulary and is able to develop explanations without circumlocution.

Interaction Skills

5. Question Handling

0 Speaker is unable to understand or respond to the most routine questions. Answers illogically or not at all.

1 Speaker has difficulty understanding and responding to questions. May respond inappropriately at times.
2 Speaker can respond appropriately to most questions, although there may be some reformulation necessary or hesitation in the response.
3 Can respond to all questions, even those which are random or garbled. Speaker is able to reformulate students' questions clearly.

Presentation of Information

6. Organization/Development of Explanation

0 Presentation shows almost total lack of organization. Explanation can only be followed with extreme difficulty.
1 Presentation is often difficult to follow. Portions of explanation may be disorganized.
2 Explanations are presented clearly and simply, but with little elaboration with examples, illustrations, or supporting details.
3 Explanations are clear and complete, containing ample details and examples.