Subordination and information distribution in oral and written narratives

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The ways in which given and new information are distributed, and the functions associated with the distribution, are examined here in terms of information content of relative and adverbial clauses in oral and written narratives. The conventional view that subordinate clauses tend to code given rather than new information is shown to be inadequate. Moreover, a comparison of oral and written narratives of the same events reveals both extensive differences in the two modalities, and at the same time striking similarities in terms of the information distribution within relative clauses. Relative clauses are found to be far more frequent in oral narratives than in their written analogues. However, when the differences are examined in terms of the relative frequencies of given and new relative clauses, the oral narratives are shown to have far more given relative clauses than the written versions, whereas the frequencies for the new relative clauses is virtually identical in the two modalities. This result is attributed to memory constraints.

1. Introduction[1]

Questions about the nature and distribution of given and new information date back at least to the Prague School concerns with "communicative dynamism" (e.g., Firbas 1965). This topic has assumed considerable importance over the last couple of decades, especially within functionalist views of language. In addition, it has come to play an increasingly important role in psycholinguistics and, more recently, in discourse analysis as well. Some formulations of the given-new distinction have focused on varieties in the distribution of information within a simplex sentence (for example, Chafe 1970; Clark and Clark 1977; Smyth, Prideaux and Hogan 1979) while others have examined the ways in which main

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and subordinate clauses code given and new information (e.g., Bever 1970; Ziv 1975; Givón 1979; Fox and Thompson 1990). In spite of the varied and often contradictory approaches to this issue which can be gleaned from the literature, one conclusion which has emerged with some certainty is that some version of the given-new distinction appears to be operative in extended discourse, functioning at least in part as an instrument of discourse cohesion.

This paper explores two distinct but related aspects of the given-new distinction. First, its operation is examined within one specific type of discourse, that of narrative description, in terms of two types of subordinate structures, relative and adverbial clauses. Second, the question is addressed of what, if any, differences are found between comparable oral and written narratives in the way in which given and new information are distributed. These issues are examined in terms of two experiments undertaken to examine oral and written descriptive narrative data collected under controlled conditions.

After a preliminary examination of the given-new distinction, we turn to a discussion of experimental results dealing with the distribution of given and new information in relative clauses and adverbial clauses. It will be shown that the broad general claim that subordinate clauses tend to code given information is rejected, since real differences appear in the ways the two types of clauses function and code information within narratives. It will also be shown that in spite of superficial differences in oral and written narratives describing the same events, the two modalities exhibit remarkable similarities in terms of the frequencies of relative clauses bearing new information.

2. The given-new constraint

The distinction between given and new information, and their relative distributions, have been formulated in a variety of ways (e.g., Clark and Haviland 1977; Clark and Clark 1977; Halliday 1967, 1985; Prideaux and Baker 1986). Moreover, the question of different types of given information has attracted considerable attention (e.g., Ariel 1985; Brown and Yule 1983; Chafe 1987; Prince 1981b). In spite of obvious differences in approach and formulation, however, there appears to be general agreement in certain central points.

First, all versions agree that information can be partitioned into given information, roughly, that which is shared, which the speaker knows and assumes that the hearer also knows, versus that which is new, which the speaker knows but assumes the hearer does not. Prince (1981b) suggests that three distinct types of given information must be distinguished, that which is predictable or recoverable, that which is shared, and that which is salient, while Brown and Yule (1983)

elaborate these distinctions further. Halliday (1985) speaks of given information as that which is recoverable from whatever sources. Ariel (1985) speaks of three types of given information, that which is known by shared knowledge, that which is known by the physical situation, and that which is known by virtue of mention in the discourse, while Chafe (1987) distinguishes between information which is assumed to be in the hearer's focal consciousness ("given") versus that which the hearer is presumably able to identify by situation, prior knowledge, or prior discourse ("identifiable"). Common to these formulations is the view that given-ness constitutes a graded notion, with a variety of sources and possibly different codings, a view which is adopted here as well.

Second, the various views on the given-new distinction all seem to agree that the speaker/writer systematically separates given information from new, with a variety of coding devices available to signal the distinction. The coding of given and new information is not without exception and it is not uniquely associated with specific types of constituents. Rather, various options are available and the coding seems to be a matter of general tendencies rather than rigid rules.

Third, it is widely assumed that an important function of the given-new distinction is to facilitate cohesion within a discourse, cohesion which will foster and enhance the mental representation being constructed by the hearer. Such cohesion might in some instances be promoted by contextually given information, in other instances by shared knowledge of the physical situation, or in yet others by the overt mention of information within the discourse (Ariel 1985). Alternatively, as Givón (1990: 899) has put it, the function of old (given, redundant, topical), information is "... to *ground* the new information to the already-stored old information." Cognitively, this serves to provide an "...*address* or *label* for the *storage locus* ('file') in the episodic memory."

While there are admittedly problems with this constellation of properties, they nevertheless cohere well enough that they can, for the sake of convenience, be assembled here into a single notion, that of the *given-new constraint*. One challenge facing those who choose to invoke the given-new constraint as a useful working principle is that of determining the different ways information can be coded. Before moving on to the central topic of the present work, that dealing with the distribution of given and new information within selective subordinate clause types in oral narratives, it is useful to situate that which follows in a clearer context by examining the given-new constraint in some further detail and with examples.

One version of the given-new constraint which has achieved some degree of empirical support is that which deals with the relative order of constituents within a simplex sentence. It has been argued (e.g., by Chafe 1970; Clark and Haviland 1977; Givón 1979; Smyth, Prideaux and Hogan 1979; Prideaux 1989) that in the

typical (unmarked) case given information tends to precede new. This formulation, which is also inherent in the Prague School notion of communicative dynamism (see, e.g., Prideaux 1987), seems to derive from the familiar psychological principles of primacy and recency, such that the speaker initiates a sentence with shared information, thereby permitting the hearer to establish a kind of mental address to which the later arriving new information can be directed. This perspective is consistent with the third area of agreement discussed above as well as with the proposal developed by Johnson-Laird (1983) that, in comprehension, the hearer assembles a mental model upon which various operations can be performed. Accordingly, the mental model being assembled by the hearer is augmented by incoming new information, thereby restructuring or enhancing that representation.

English dative constructions provide a useful testing ground for the claim that the functional distinction between two constituent orderings is governed by the distribution of given and new information. The two sentences in (1) both appear to code the same basic proposition, differing only in the order of the direct and indirect objects.

(1) a. Sue sent a card to Sám.
b. Sue sent Sam a cárd.

However, with the normal sentence stress on the final constituent (*Sam* and *card*, respectively), only (1a) can serve as an appropriate answer to (2a) and only (1b) is an appropriate response to (2b).

(2) a. Who did Sue send a card to?
b. What did Sue send Sam?

It can be assumed that in (1a), *card* is given information by virtue of being mentioned in (2a), while in (1b) it is *Sam* that is given. That is, in the unmarked case, given information precedes new. Of course, if the stress in (1) is retracted to the penultimate major constituent (*card* and *Sam*, respectively), marked structures are formed and the appropriateness of the marked forms is just the reverse of that in the unmarked case. The marked version of (1a), with stress on *card*, is an appropriate response to (2b) rather than (2a). Furthermore, there is empirical evidence that naive native speakers of English are highly sensitive to such distinctions (e.g., Smyth, Prideaux and Hogan 1979; Smyth 1988).

This analysis, while widely accepted in much functional and psycholinguistic literature, has not however gone unchallenged. In particular, Givón (1984) has argued, in contradistinction to his earlier views, that the relative word orders of direct and indirect objects are subject to a "discourse-pragmatic" device whereby the more topical constituent (more specifically, the "secondary topic") precedes

the "focus" (new information). According to this perspective, the subject *Sue* in (2) is the primary topic, while the *wh*-form serves as a variable defining the focus (new information). Thus in (2a), *who* defines the focus constituent, while in (2b), *what* serves this role. The secondary topic in (2a) is, by default, *card*, and in (2b) it is *Sam*. The discourse-pragmatic principle championed by Givón (1984: 153-154) is that the secondary topic, as defined by the questions in (2), precedes the focus. Clearly, the word orders for datives predicted by this principle are precisely the same as those predicted by the conventional version of the given-new constraint, since the focus (new information) comes last, following the secondary topic.

The attractiveness of this proposal, however, lies in the broader claim that more topical information precedes less topical, a claim which could in principle generalize to a great many situations and structures. According to the principle, there appears to be a left-to-right gradient of more to less topical information, where the topicality of constituents is determined by discourse considerations. Moreover, the higher a NP is on a topicality scale, the more amenable it is, for example, to pronominalization. However, the conventional treatment of given and new information typically asserts that given information is more readily pronominalized than new, again yielding the same predictions. For this reason, the conventional version of the given-new constraint is retained here, in spite of the interesting possibilities that Givón's proposals suggest.

It appears, then, that the unmarked and canonical position for new information is sentence final, positioned under the normal sentence stress. Once the stress is altered, however, the information distribution can be altered. A similar alteration can be effected by syntactic means, as the variants in (3) demonstrate (see Collins 1991).

(3) a. It was a cárd that Sue sent to Sam. (*card* = new)
b. It was Sám that Sue sent a card to. (*Sam* = new)
c. What Sue sent Sam was a cárd. (*card* = new)
d. Who Sue sent a card to was Sám. (*Sam* = new)

To deal with cases like these, Givón (1988: 275ff) argues that a general pragmatic principle is at work in which "less predictable" and "more important" information is fronted. Again, such a view does not contradict the traditional given-new ordering, but rather enhances it.

English appears to employ a coding system which places the more important information in either initial (or at least early) position or in final position, typically under sentence stress in either case, with the relatively less salient and less important information lying somewhere in between. One possible means to reconcile these overlapping and at times conflicting perspectives can again be

found in the psychological primacy-recency principle according to which the best recalled (and therefore most salient) information in a string is that which is found in either initial or final positions, whereas the less well recalled and less salient elements tend to be found toward the middle. If we think of this principle in terms of attention activation and allocation (in the sense of Givón 1990: Ch. 20), a natural coding strategy presents itself: given information, being already activated, is best placed medially, since this location requires and attracts relatively little additional attention, whereas more important, salient, and newer information should be positioned to attract attention, namely initially or finally. Such a possibility is, of course, only speculation, but the major point to be made is that empirical evidence supports the conventional view that given information is coded differently from new, with different positions typically associated with each type.

Within complex sentences, the distribution of given and new information is somewhat more complex. It has been suggested (by, e.g., Bever 1969, 1970; Givón 1979), that since subordinate clauses are usually presupposed, they should contain given information, while the new information should be expected to reside in main clauses. This matter is not nearly so simple, however, as this quite general hypothesis would suggest, since the various types of subordinate clauses clearly serve radically different functions. In his examination of English restrictive relative clauses attached to indefinite NPs, for example, Ziv (1975) argues that non-extraposed relatives such as those in (4a) provide identifying (background, given) information, while those which are extraposed, as in (4b), may constitute the main assertion in the sentence and be new.

(4) a. A man who was wearing very funny clothes just came in.
b. A man just came in who was wearing very funny clothes.

Ziv points out that these differences follow from the view that given information tends to precede new.

A similar view is taken by Fox and Thompson (1990) who, in their discussion of restrictive relative clauses found in English conversation, note that all NPs containing relative clauses are *grounded* in the sense that "... their referents are made relevant to the ongoing conversation by being explicitly related to Given referents in the discourse" (p. 300). They further observe that many non-human object headed relative clauses such as in (5)

(5) a. I don't like the pants that come down narrow and then bell out.
b. We get reports that go to every department.

tend to exhibit a pattern in which the head NP (*the pants*, *reports*) is grounded by the main clause subject pronoun, while the relative clause serves to characterize

the NP with additional (new) information. This structure, then, follows the given-new principle, although the new information resides in the relative clause, contrary to conventional expectation. (Fox and Thompson 1990: 305).

Adverbial clauses, unlike relative clauses, appear to exhibit different information distributions chiefly, perhaps, as a function of their positions in the main clause. Givón (1987), for example, has observed that preposed adverbial clauses, those exhibiting the "marked" subordinate-main clause (SC+MC) order, tend to occur at major thematic boundaries and depend for their interpretation on the preceding thematic material, whereas postposed adverbial clauses, those exhibiting the unmarked MC+SC order, tend to occur in the midst of a thematic unit. A similar result was reported in Prideaux (1989), where it was found that in some, but by no means all, written versions of oral language taken from three different sources, the marked structures tended to appear at thematic paragraph boundaries, with the adverbial clause also typically carrying given information, while within paragraphs the unmarked order predominated. However, this pattern held only for the most "oral-like" of the texts examined, and it did not obtain in the more formal writing. Of course, those data were taken from written texts, which can clearly only approximate the oral language.

A further factor which might also be at work here is some version of the principle of iconicity (Haiman 1985; Givón 1989), according to which the more central, important, and new information could be placed iconically in the more salient main clause, which of course can stand alone, while the less important given information finds itself relegated to an iconically less salient subordinate clause status. A similar possibility seems to hold for the proposed foreground-background distinction, where foreground information tends to be found in main clauses and background information in subordinate clauses (see, e.g., Tomlin 1985). At the same time, however, it is quite clear that given and background information cannot be equated, nor can new and foreground information (but see Givón 1987 for a challenge to the distinction between foreground and background information).

Much of what has been reported in the literature dealing with the distribution of information in subordinate clauses has focused on written texts (e.g., Givón 1979; Prideaux 1989) or oral conversation (e.g., Fox and Thompson 1990). At this point, we turn our attention to oral and written narratives, in which the subject matter is systematically controlled so that the two modalities of expression can be compared. Within this context, we undertake an examination of the rather bold and general hypothesis that subordinate clauses tend to encode given information.

Within any empirical study attempting to assess the validity of the given-new distinction, it is necessary to develop an operational definition of given

information in order to have a means of identifying the informational status of the constituents under consideration. For this purpose, the proposals discussed above (e.g., Prince 1981b; Brown and Yule 1983; Ariel 1985; Halliday 1985; Chafe 1987) were taken into account in formulating an operational definition of given information in terms of which independent judges could examine transcriptions of oral and written texts and determine the informational status of select constituents. From these insights and observations, information was operationally defined as given if any of the following criteria were satisfied: (a) the information was overtly or anaphorically available from the discourse, (b) it was available by inference from the previous discourse, or (c) it was pragmatically available by either social or world knowledge. All other information was treated as new. This definition of course requires a careful assessment of the specifics of the prior content of each individual narrative examined since it is possible for example that a narrator might introduce information at some point which is neither consistent with its actual location in the film nor with what he or she has already mentioned. Such cases were happily relatively rare in the narratives under analysis.

Illustrations of the application of the operational definition are useful at this point. For example, if *the woman who hated her drink* is mentioned and later referred to either by an appropriate pronoun (*she*, *her*), or even a uniquely identifiable phrase (*that woman*), such instances would be treated as given via (a). If it were mentioned at some point that a woman had remembered to bring a letter to a meeting, then the later relative clause "the letter *that she wanted to bring*" would be treated as given by virtue of (b). Finally, as an example of (c), if it were known that some event took place in a bar, a reference to the consumption of alcohol would be treated as given by virtue of our cultural knowledge of the nature of the activities in bars.

In order to assess the general hypothesis that given information tends to be coded by subordinate clauses, and more importantly, to refine that hypothesis, a series of experiments was carried out in which two typical subordinate structures were examined, namely restrictive relative clauses and adverbial clauses. These clause types were singled out for attention since both are quite common and both have relatively wide possibilities of occurrence. Adverbial clauses can occur initially, internal to a main clause, or finally, while relative clauses can be attached to NPs playing virtually any role in a sentence.

The first study, dealing only with oral narratives, was undertaken to assess directly the given-new hypothesis discussed above. The second, dealing with both oral and written narrative descriptions, focused solely on relative clauses for reasons which will become clear, but it also provided crucial data on the similarities and differences between oral and written narratives describing the same events. It is to a discussion of these experiments that we now turn.

3. The Adam's Rib study

One problem with many studies of narrative descriptions is that of collecting data from multiple subjects on the same topic and with appropriate controls. An important step toward addressing this problem is found in Chafe's (1980) *pear story* methodology, in which participants watched a short film and at varying intervals later provided descriptions of what they had seen. A similar methodology was employed by Prideaux and Baker (1986), while Tomlin (1984) exploited a technique in which participants watched a short cartoon unfold and provided an "on-line" description of what was taking place.

The methodology used in the present study follows these pioneering traditions. In this study, some 24 participants individually watched a short film clip and then provided an oral narrative description of what they had seen. All the narratives were taped and transcribed for later analysis. All volunteer participants were native speakers of English and university students. The stimulus material consisted of a four-minute, self-contained scene from the movie *Adam's Rib*. The scene selected was the famous "massage scene" in which only two persons participate, Spencer Tracy and Katherine Hepburn, who play husband and wife lawyers arguing opposite sides of a court case. In this scene, they are at home in the evening after a day in court, discussing the case and giving each other massages. Although short, the scene is engaging and participants found no difficulty in describing it in considerable detail. Participants were instructed to provide as detailed and extensive a description of what they had seen as they felt necessary in order to provide a hearer with a clear understanding of what had taken place. They were asked not to act as movie critics, but rather to devote their attention to a careful detailing of the events they had seen.

The taped narratives were transcribed in conventional orthography, but with all hesitations, false starts, repetitions, etc. included. No attempt was made to edit the narratives. The narratives were then parsed into clauses, and all subordinate clauses were classified and labelled. While a great deal of information was tabulated for the narratives (including the location of each subordinate clause within its host clause, the morphosyntactic properties for each host NP to which a relative clause was attached, etc.), only that relating to adverbial and restrictive relative clauses will be discussed here. Three independent judges then assessed the informational status for each subordinate clause in all the narratives. The judges were instructed to employ the operational definition of given information discussed above, to evaluate the informational status of each subordinate clause, and their independent judgements were then jointly discussed. While there was remarkable consistency in the scorers' results, when cases of disagreement arose, these were discussed at length among the scorers and a final determination was

made. In those very few cases where agreement was not reached as to the informational status of a clause, it was scored as new, in order to work most conservatively against the hypothesis.

From the pooled data of the 24 narratives, a total of 88 adverbial clauses was found (about 3.7 per narrative), but only 51 restrictive relative clauses occurred (2.1 per subject). The results of the information distribution of these clauses are shown in Table 1, where both the total numbers and relative percentages of given and new tokens of each clause type are specified.

Table 1. *Adam's Rib frequency data*

	Information Status	
Clause Type	*Given*	*New*
Adverbial	26 (30%)	62 (70%)
Relative	15 (29%)	36 (71%)

A cursory inspection of these results reveals that, for both types of clauses, new information dominates given, a conclusion supported by X^2 - tests carried out on the frequency data. There is a significant tendency for relative clauses in these data to encode new information ($X^2 = 8.65$, $p < .001$), as well as a strong tendency for adverbial clauses to represent new information ($X^2 = 14.73$, $p < .003$). It is clear that these data soundly refute the global hypothesis that subordinate clauses typically code given information.

An examination of the contents of the scene being described provides some insight into these results. Since only two individuals are involved, once they are introduced, they can be referenced quite simply by anaphoric devices. Some of the adverbial clauses provide given information as scene-setting devices as in (6) and (9), while others do in fact introduce important new information, as in (7).

(6) they were ... they decided to have some body massages *when they got home from a hard ... a rough day.*

(7) and then he ... *when he slapped her on the rear*, she got really mad at him...

The relative clauses, however, present a different picture. A close examination reveals that those relative clauses coding given information tend to be attached to definite NPs, as in (8), while those representing new information tend to be attached to indefinite NPs, as in (9).

(8) so he gets ... he takes it a bit hard about those comments *that she made about the other guy...*

(9) and while he was on the table, he was complaining about some sort of a court case *that he's involved in...*

In fact, 33 of the 36 new relative clauses were attached to indefinite NPs, while 12 of the 15 given relative clauses were attached to definite NPs. It seems, at least in these data, that definite NPs exhibit the expected tendency to code given information and indefinite NPs new information and, moreover, a kind of "givenness agreement" is at work which attaches relative clauses sharing the same value for given or new to appropriate NP hosts.

Such a communicative strategy makes much sense, of course, since it provides the speaker with a systematic coding device, namely the definiteness of the host NP, for re-introducing, identifying and even emphasizing important but shared information, in contrast with a related coding device, indefiniteness of host NP, for signalling new information. These results can, to some extent, be interpreted as supporting Givón's (e.g., 1988) view that *relative importance* is a crucial factor in understanding how discourse-pragmatic constraints influence the structure of discourse.

The methodological question arises, however, as to whether the particular pattern found in these results is just a product of the specifics of the scene being described or whether it reveals a general discourse cohesion strategy. The scene being described in the present experiment involves only two individuals, and while it is rich in content, it is nevertheless constrained in scope. In other words, it might be the case that the patterning of relative clauses found here is just an artifact of the specifics of the stimulus materials. For this reason, a second experiment was undertaken, but one in which participants watched and then provided either oral or written narrative descriptions of a far more complex set of events. It is to this second study that we now turn.

4. The Bar Scene study

As in the first study, participants in this experiment watched a film clip and then provided a narrative description of what they had seen. However, there were two important differences between this and the earlier study. First, the stimulus material was radically different, and second, both oral and written narrative descriptions were collected.

The stimulus material in this study was a short (eight minute) black and white silent film clip. Unlike the earlier clip, however, this one consisted of ten scenes taking place in a bar in which various people are shown talking and interacting. Each scene is physically separated from the previous one by a change of camera angle or a blank moment on the screen. Several characters appear in

the clip, with some appearing, then being absent for a few scenes, and then reappearing. There is no clear story line as such, but rather several interacting episodes. A silent clip with numerous characters was chosen in order to force narrators to use a variety of descriptive devices to distinguish among the many characters. It was anticipated that relative clauses would figure largely in this task, and they did.

Both oral and written narratives were collected in this study in order to uncover any differences which might exist in the use of relative clauses as a function of the modality difference. Sixteen participants provided oral narratives and 24 different participants provided written descriptions. While different participants were involved in the two distinct conditions, the usual assumption was adopted that they all represented the same population. As in the first study, all volunteers were native speakers of English and were university students. Again, the narrators were instructed to provide descriptions extensive enough that a reader or hearer would have a firm understanding of the events and episodes that had taken place in the clip. Those providing written descriptions watched the film in groups, while those giving oral renditions watched the clip singly and then narrated their descriptions to a tape recorder. All taped narratives were transcribed, and then both the oral and written narratives were analyzed for a variety of grammatical properties. All relative clauses were again coded for type (restrictive or non-restrictive), location (internal or final), informational status (given or new), and definiteness of the host NP. A remarkable consistency was found among the oral narrations in terms of overall length and degree of detail, a consistency which was also found within the written narratives.

Three independent judges scored the data, again using the operational definition discussed above. By far the vast majority of the relative clauses found in both the oral and written narratives were restrictive, and only these are under discussion here[2]. The relative clause frequency data for the oral and written versions[3], along with their respective percentages, are found in Table 2.

Table 2. *Bar Scene relative clause frequency data*

	-Def NP Host		*+Def NP Host*	
Modality	*Given*	*New*	*Given*	*New*
written	9 (10%)	34 (38%)	37 (41%)	10 (11%)
oral	6 (5%)	18 (16%)	80 (70%)	10 (9%)

The 24 participants providing written narratives produced 90 relative clauses, of which almost exactly half, 46, encode given information. However, as in the

first study, there emerged a strong tendency for given relative clauses to attach to definite NPs (37) and for new relative clauses to attach to indefinite NPs (34), a tendency which is statistically significant ($X^2 = 30.02$, $p < .0001$). The written data therefore provide the same pattern of results in "givenness agreement" for relative clauses as did the oral data in the first study, suggesting strongly that the results of the first study were not simply a product of the specific stimulus materials.

The oral data produced a total of 114 relative clauses, of which 88 were given and only 26 were new. This result appears to support the original given-new hypothesis which predicts that subordinate relative clauses should be more often given than new. However, the same tendency was found here as for the written data, namely for given relative clauses to attach to definite NPs (80) and new relative clauses to indefinite NPs ($X^2 = 41.74$, $p < .0001$).

To this point, then, the oral and written data pattern alike and at the same time support the results from the first study, namely that a correlation exits between the definiteness of the host NP and the informational status of the associated relative clause, a result which can be characterized as in Table 3.

Table 3. *Given-new/definiteness correlation*

Information Status	*Definite NP Host*	*Indefinite NP Host*
Given RC	many	very few
New RC	few	many

In (10) we find a typical (oral) example of a given relative clauses attached to a definite NP.

(10) and then it switches back to the ... the couple with the girl *who didn't like her drink*

A couple of scenes before the one being described here, a couple were seen sitting at a table and arguing. The woman became quite angry and sent back her drink, causing the waitress some consternation. When the narrator used the definite NP *the girl*, she was referring to a previously introduced referent, with the relative clause serving to ground the head NP. That is, the relative clause functions to identify which of many women in the scene the narrator was singling out for attention. In both the oral and written narratives, the vast majority of given relative clauses were used to identify a particular referent which had been introduced in an earlier scene, was then absent for some time, and then later reemerged as a major figure.

Within the same scene, however, the common way of tracking a character was by the use of an appropriate pronoun, as in (11), which immediately followed (10) in the same oral narrative.

(11) and she reached into her purse and pulled out a ... an envelope ... ah ... she gave it to a ... a third party *who just joined them.*

In this case, the narrator refers to the woman of (10) with *she*, and at the same time she attaches a new relative clause to an indefinite and new NP, a *third party*, not present in an earlier scene. The major function of new relative clauses in this study, in both oral and written versions, was, upon the introduction of a new character or event by use of an indefinite NP, to elaborate on that reference with additional new information.

In some few cases, however, new relative clauses are found attached to definite NPs, an anomaly which requires explanation. A typical instance of such apparently anomalous structures is found in (12).

(12) and over to her ... their table stumbled ... a ...this guy *who was really drunk.*

In these cases, the (definite) NP is introduced by a proximate demonstrative (*this*, *these*), and the NP in fact does encode salient new information, since the drunk man had not been mentioned before. Virtually all instances of new relative clauses attached to definite NPs are of this sort. This result supports Prince's (1981a: 235) claim that such *this* NPs are in fact best treated as indefinite but specific, and as such they typically serve to introduce something that is going to be talked about. That is, they introduce new information. *This*-NPs serving to introduce new information are commonly observed in casual speech, even though Miss Fiddich would clearly inveigh against such a usage as being quite "incorrect".

5. Discussion and conclusions

At this point, we can conclude that the results of the second study provide strong independent support for those of the first, namely that the given-new hypothesis as initially formulated for subordinate clauses does not, in general, hold. Adverbial clauses can encode either given or new information, while the informational status of relative clauses is typically correlated with the definiteness (and the givenness) of their host NPs.

There remain, however, two results which call out for special attention. In one circumstance the old version of the given-new hypothesis for subordinate

clauses apparently was supported, namely in the case of the oral narratives in the bar scene study. Secondly, there is a striking difference between the written and oral data: the written narratives average 3.75 relative clauses per narrative, while the oral data exhibit almost twice that number, 7.13 per narrative. Such a result is counter-intuitive if one holds the view that oral language should be less syntactically complex, with less instances of subordination, than the written language (e.g., O'Donnell 1974; Chafe 1982).

Both of these results can be resolved if we examine the differences in relative frequencies of relative clauses bearing given and new information in oral and written narratives. While the oral data exhibit almost twice as many total relative clauses per narrative as the written data, the oral data also reveal a larger number of given relative clauses per narrative than do the written data. These results are found in Table 4.

Table 4. *Given-new differences in two modalities*

Modality	*Subjects*	*Given RCs*	*Given RCs/S*	*New RCs*	*New RCs/S*
written	24	46 (51%)	1.92	44 (49%)	1.83
oral	16	86 (75%)	5.38	28 (25%)	1.75

It is clear from Table 4 that there is a marked difference between the oral and written narratives in terms of the amount of given information represented with relative clauses, but a remarkable similarity in the amount of new information coded by such clauses. The oral data employ almost three times the number of given relative clauses as the written data, but the two modalities do no differ significantly in the amount of new information represented by such clauses. That is, in terms of the frequencies of relative clauses, the significant difference between the two modalities resides in the fact that there are far more given relative clauses in the oral than in the written narratives, while the frequencies of new relative clauses is the same in the two modalities.

One reason for such a difference immediately suggests itself: the written narratives, by virtue of the fact that they are written, permit the reader to have sustained access to the information in the text, while the oral narratives do not. That is, because of the limitations imposed by memory constraints, the oral language appears to require more redundancy and cohesion, a need which is reduced in the written versions by virtue of the permanence of the written record. Care must be taken, however, not to invoke memory constraints too freely, since the nature of such constraints is far from clear. In contrast to the more traditional notions of short-term and long-term memory, Chafe (1973) has argued for a three way distinction among surface, shallow, and deep memory, a tripartite distinction

which partially overlaps with Kintsch's (1970) notions of primary (short-term, quick decay) and secondary (long-term, relatively permanent) memory. From the perspective offered by Chafe, it would seem that given information resides in shallow memory, the locus of recently activated information. Moreover, it is plausible to expect that both oral production and aural comprehension would benefit from this mechanism, since the speaker can access shallow memory to keep the characters and events within the narrative on track and activated in immediate consciousness, while the hearer can exploit the same resource when building up the appropriate mental model of the events in the narrative.

It appears, then, that the overall increase in the number of given relative clauses in the oral narrative, and in particular in that set of narratives describing a complex set of episodes in several scenes, is a function of a discourse strategy to impose cohesion and therefore continually organize and clarify the events being described. Nevertheless, there is still a high degree of adherence in all the narratives, both oral and written, to the strategy of attaching relative clauses containing new information to indefinite NPs and those with given information to definite NPs.

One final point needs to be mentioned, and this concerns the difference in the ratio of given to new relative clauses in the two oral narrative studies. In the *Adam's Rib* study, the new relative clauses outnumbered the given (36 to 15), while in the bar scene study, the opposite trend was found, with given relative clauses outnumbering new (86 to 28). This difference appears to be a function of the difference in episodic structure and complexity between the two scenes. As discussed above, in the *Adam's Rib* film clip, only two characters are present, and there was accordingly little need for narrators to reintroduce them by any device other than that of anaphoric pronouns. Thus, by default most of the relative clauses were used here to introduce new information. In the bar scene study, on the other hand, a large number of characters entered the picture, exited, and re-entered, over several scenes. The narrators therefore needed to use a large number of given relative clauses to reintroduce the reappearing characters. The differences in the relative proportions of given to new relative clauses, it appears, is a function of the specifics of the narrative task faced by the narrators. If this interpretation is correct, it would be expected that in oral narratives with large numbers of characters and scenes, and especially those in which individual names are excluded, the proportion of given to new relative clauses would be high, while in those narratives dealing with only a few characters, the ratio would be much lower.

In conclusion, we find that the original version of the given-new hypothesis is not viable. In the one place where it appears to operate, within the oral narratives of the second study, the apparent support for the hypothesis is really

epiphenomenal and a function of a more compelling discourse strategy of bridging across scenes by exploiting relative clauses to reintroduce given referents back onto the main stage of the discourse. Nor is the hypothesis viable for the adverbial clauses, some of which encode given and others new information.

Finally, in spite of considerable superficial differences between the oral and written modalities, it appears that they exploit to much the same extent a strategy of introducing new information via relative clauses. Once the given relative clauses are factored out, the frequency of new relative clauses is remarkably constant across the two modalities. Of course, much more work is needed in this area, and an obvious question at this point is whether or not other subordinate clause types behave similarly to relative clauses in the oral and written modalities. A further issue to be tackled is how factors such as foregrounding and salience interact with the distribution of given information. Methods such as those used here, coupled with a more refined notion of information distribution, suggest that a beginning can be made in answering these and related questions.

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Notes

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2. Non-restrictive relative clauses were also tabulated in this study, but far fewer were found than the more interesting, for our purposes at least, restrictive relatives. However, it should be mentioned that virtually all of the non-restrictives coded new information, supporting the view that non-restrictive relative clauses serve more a parenthetic than a modifying role.

3. It should also be noted that the majority of restrictive relative clauses in both the oral and written versions were attached to final rather than initial or medial NPs, a result supporting the operation of a closure constraint which militates against subordinate clauses interrupting main clauses (see Prideaux 1989).

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