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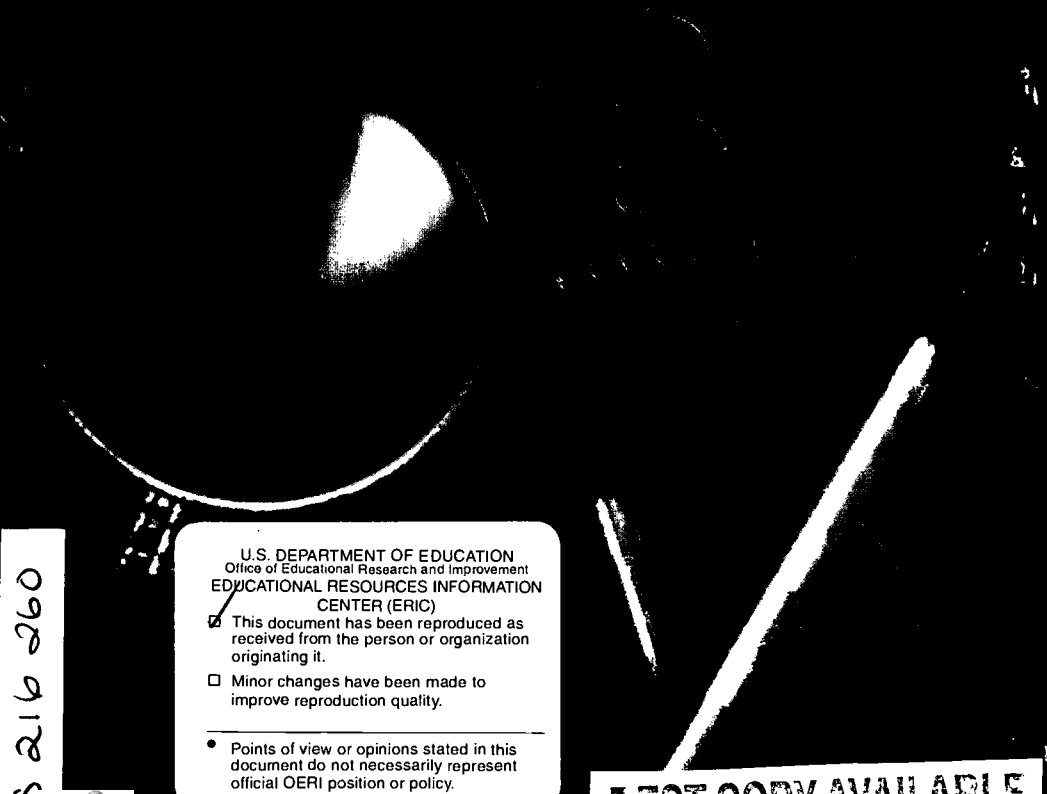
ABSTRACT

Noting that little in language can be understood without taking into consideration the wider picture of communicative purpose, content, context, and audience, this book address practical uses of various approaches to discourse analysis. Several assumptions run through the chapters: knowledge is socially constructed; the manner in which language accomplishes the goals of communication affects the overall text macro-organization to the choice of words; and most texts are so rich and complicated that no single approach can tease out all of the meaning. Chapters in the book are: (1) "Discourse Analysis and Reading Instruction" (William Grabe); (2) "Contrastive Rhetoric" (Robert Kaplan); (3) "Text Analysis and Pedagogical Summaries: Revisiting Johns and Davies" (Ann Johns and Danette Paz); (4) "Rhetorical Models of Understanding" (Claire Kramsch); (5) "From Information Transfer to Data Commentary" (John Swales and Christine Feak); (6) "Critical Discourse Analysis" (Thomas Huckin); (7) "Words and Pictures in a Biology Textbook" (Greg Myers); (8) "I Think That Perhaps You Should: A Study of Hedges in Written Scientific Discourse" (Francoise Salager-Meyer); (9) "The Voices of the Discourse or the Problem of Who Says What in News Reports" (Ana Maria Harvey); (10) "Applied Genre Analysis and ESP" (Vijay K. Bhatia); (11) "Genre Models for the Teaching of Academic Writing to Second Language Speakers: Advantages and Disadvantages" (Tony Dudley-Evans); (12) "Concordancing and Practical Grammar" (Tony Jappy); (13) "Describing and Teaching English Grammar with Reference to Written Discourse" (Marianne Celce-Murcia); (14) "Tense and Aspect in Context" (Kathleen Bardovi-Harlig); (15) "Towards a Psycho-Grammatical Description of the English Language" (Jean-Remi Lapaire and Wilfrid Rotge); (16) Using the Concepts of Given Information and New Information in Classes on the English Language" (William J. Vande Kopple); (17) "Theme and New in Written English" (Peter H. Fries); and (18) "Waves of Abstraction: Organizing Exposition" (J.R. Martin). Contains approximately 300 references. (RS)

FUNCTIONAL APPROACHES TO WRITTEN TEXT: CLASSROOM APPLICATIONS



Edited by Tom Miller

FUNCTIONAL APPROACHES TO WRITTEN TEXT: CLASSROOM APPLICATIONS

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INTRODUCTION

It has become increasingly obvious that little in language can be understood without taking into consideration the wider picture of communicative purpose, content, context speaker/writer, and audience. Sentence-based intuitions and analyses wither in the face of empirical studies made possible by concordances using corpora of millions of words. In fact, as Celce-Murcia states in this volume, only a handful of grammatical features can be understood by looking at the sentence alone. Research in the field of psychology, particularly in the field of reading (see Grabe, chapter 1) provides considerable support for the teaching of textual awareness, particularly for expository prose. Teaching text structural awareness has also had positive effects on students' writing (see Johns and Paz, chapter 3 for a review of some relevant research).

The title of this volume reflects the assumption that form follows function. Several themes run through the chapters. First, texts, and in fact knowledge itself, are socially constructed. In other words, the meaning of texts is co-constructed by the interaction of reader and text and does not reside in the text alone. The approaches described in this volume all advocate a careful analysis of the text to understand this process more fully. Thus, we lose the somewhat artificial distinction between process and product as we study the text to discover the writer's mental models (see Kramsch, Chapter 4) or biases and presuppositions (see Huckin, Chapter 6). A second theme is that genres—the manner in which language accomplishes the goals of communication—affect the overall text from macro-organization to the choice of words. Finally, most chapters assume that texts are so rich and complicated that no single approach can tease out all of the meaning. Learners need to become aware of the richness of interaction among ideology of the writer/reader, genre, overall organization, cohesion, presupposition, and lexical choice to understand not only what is in the text but what has been omitted or presupposed.

The first twelve chapters focus on expository text for two reasons. First, research seems to indicate that students experience more difficulties writing and understanding dense hierarchical expository text than narration and in fact seem to benefit more from the teaching of textual awareness of expository than narrative prose (see Grabe, Chapter 1 for a review of the literature). Secondly, although most students have had considerable exposure to reading and writing narratives, they will ultimately need to master expository prose to succeed in the workplace or in the university, even in English classes.

Each chapter tries to bridge the gaps between a description of an approach, an analysis of at least one text, and pedagogical applications. Sufficient sources have been provided for those who wish to pursue read-

ing in a particular area, while enough examples of approaches are given so that readers can decide for themselves which method warrants further consideration.

Chapter 1 entitled "Discourse Analysis and Reading Instruction" anchors the text in the literature. William Grabe describes many studies which provide empirical support for teaching text structure to students of reading, particularly in expository text. Chapters 2-5 show how an awareness of text structure and strategies is reflected in the quality of student essays. Robert Kaplan's chapter on Contrastive Rhetoric presents a model for the writing process which takes into consideration the impact of author, content, audience, purpose, genre, and context and which shows how students' language and culture shape their writing in English. Claire Kramsch's chapter on Rhetorical Models of Understanding presents student summaries of a narration, while Ann Johns and Danette Paz' chapter on Text Analysis and Pedagogical Summaries deals with summaries of expository texts. Asserting that meaning is a rhetorical and not just a cognitive process, Claire Kramsch presents a model for text analysis and shows how a careful analysis of students' writing can flesh out their respective mental models. Describing Johns and Davies' (1983) topic types, Johns and Paz show what expert and novice summary writers look for when identifying the macro structure of a text. In Chapter 5 John Swales and Christine Feak describe successful and less successful strategies for describing non-verbal information. They recommend going beyond simply transforming information to writing a commentary on non-verbal data.

Chapters 6-9 describe the socio-pragmatic **effects** that certain language, images, orientations, and organization have on the reader. In an introduction to critical discourse analysis, Thomas Huckin provides the reader with a set of strategies to unveil the assumptions and hidden messages in a text. Greg Myers in "Words and Pictures in a Biology Textbook" provides guidelines for reading visuals, showing how the purpose of visuals changes with genre. Following Myers' description of the modality of visuals is Françoise Salager-Meyer's description of hedges in written scientific discourse. Salager-Meyer shows how scientists modulate the strength of their claims and provides suggestions for using hedges to join the discourse community of the scientist. Ana Maria Harvey continues Johns and Paz's and Myer's description of the difference between academic texts and popularizations, showing how science reports are really discourses about discourse. An awareness of the demands of the primary and secondary discourse helps classify texts for pedagogical purposes.

Chapters 10-12 focus on genre analysis and its applications. Vijay Bhatia highlights some of the major features of genre theory and discusses how a genre-based approach can inform language teaching. Tony Dudley-Evans describes some of the insights and dangers of genre analysis in academic papers and provides suggestions for a flexible approach. Finally,

Tony Jappy describes a practical approach for using corpora for both research and pedagogy and shows how various language structures are used in different genres.

Chapters 13-18 show how functional grammar approaches are useful not only in teaching grammar per se but in teaching other skills such as reading and writing. The first four articles deal with constructions which textbooks often ignore and which cause problems for teachers such as demonstratives, tense and aspect, and *there* and *it*-cleft constructions. The last three chapters show how concepts in functional grammar can be used in the reading and writing class.

Several of the chapters cover the same territory with slightly different approaches. Marianne Celce-Murcia, William Rotgé and Roger Lapaire, and William Vande Kopple all deal with existential *there*, while Marianne Celce Murcia and Kathleen Bardovi-Harlig deal with tense and aspect. William Vande Kopple, Peter Fries and James Martin all deal with issues of placement of information within clauses and its effect on the message. Fries shows how an understanding of Theme and N-Rheme can help students read and write, while Martin shows how an effective control over theme and manipulation of grammatical structures is crucial for revising compositions and therefore for mature writing.

In "Describing and Teaching English Grammar with Reference to Written Discourse" Marianne Celce-Murcia focuses on demonstratives, tense and aspect, existential *there* sentences, and *it*-clefts, items which are taken up in later chapters. Celce-Murcia shows that structures are dependent on the context and genre, with some genres allowing more variation with the same grammatical structure than others. Celce-Murcia concludes by advocating more data-based analyses of authentic materials so that reference grammars and teaching materials can begin to supply teachers with guidance as to the use of grammar beyond the sentence level.

In her chapter "Tense and Aspect in Context" Kathleen Bardovi-Harlig advocates using authentic texts to teach tense and aspect, showing how genre is related to the use of tense and aspect. Using a complete radio script, Bardovi-Harlig describes how past tense and aspect relate to point of view and foreground or background. Using a descriptive text, Bardovi-Harlig shows how tense can be used as temporal orientation. In a news report she shows how use of tense and aspect is related to given and new information. Bardovi-Harlig suggests exercises for each genre and structure.

In their chapter "Towards a Psycho-Grammatical Description of the English Language," Jean-Rémi Lapaire and Wilfrid Rotgé describe how mental operations leave traces in the surface grammar. They describe how ***TH***, for example, is used when an item being referred to is online (open file) contrasted to ***WH***, which is used to refresh the reader's memory. Following the French linguist Guillaume, they argue that deep unifying principles, or core values, govern surface realizations of grammatical markers. Rotgé and

Lapaire advocate teaching grammar in context, beginning with more abstract psycho-grammatical explanations of grammatical features.

In his chapter "Using the Concepts of *Given Information* and *New Information* in Classes on the English Language," William Vande Kopple bases his analyses on the Functional Sentence Perspective approach. Vande Kopple shows how dividing the sentence into two parts—one with given information and another with new information can explain the use of many structures. Vande Kopple shows how several grammatical structures such as the passive voice, reversals, and fronts help the writer place given before new and make it easier for the reader to identify which is which. Other patterns such as the expletive *there, what*-clefts and *it*-clefts help call special attention to new information. Vande Kopple suggests exercises for each structure and provides a checklist for students for using given and new strategically.

In his chapter on "Theme and New in Written English", Peter Fries introduces the notion of Theme and N-Rheme using a systemic-functional perspective. Theme is associated with the initial constituent in the clause and functions to orient the reader to the message. N-Rheme is the final constituent of the clause and serves as the focus of attention and therefore the locus of new information. Using an advertisement, Fries shows how the Theme and N-rheme relate to author's purpose and to the textual structure. Fries introduces rhetorical structure theory and demonstrates how a careful analysis of linguistic features can help readers recognize the overall text structure and can help them write more effectively.

In his chapter entitled "Waves of Abstraction: Organizing Exposition" James Martin shows how the notion of Theme can be used to help students revise texts. In order to package information most effectively, students must learn when to change processes, which are normally encoded as verbs, into nouns; or logical relations, which are normally encoded as conjunctions into verbs. This process, called grammatical metaphor, is necessary if the writer is to manipulate the Theme of the clause effectively and write in a mature manner. Martin uses successive re-writes of a student composition to show how effective use of Theme and grammatical metaphor improves a composition.

It is hoped that the chapters in this series provide the reader with a taste of practical uses of various approaches to discourse analysis, and that the works cited can provide a basis for further reading.

This volume is a compilation of two TESOL France Journals. I would like to thank TESOL France for its high standards and for its efforts to reach a wider public. I wish to thank the following for their careful reading of the manuscript: Jacqueline Quéniart, Gloria Kreisher, Frank Smolinski, and Dolores Parker. Finally, I wish to thank the authors for their suggestions and contributions to this volume. Particularly, I would like to thank Ann Johns and William Grabe, whose patient guidance and generous assistance over the years have made this work possible.

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CONTENTS

SECTION ONE

WHAT RESEARCH TELLS US

1

Discourse Analysis and Reading Instruction

Bill Grabe

This paper explores connections between written discourse analysis and reading instruction, with particular emphasis on text organization research and its impact on comprehension instruction. The paper discusses the influence of top-level discourse organization on reading comprehension followed by text structure awareness, genre-based instruction and instructional strategies supported by discourse analysis.

INTRODUCTION

Over the past 15 years, research on discourse analysis and language comprehension has increasingly demonstrated that text structure awareness has a strong impact on efforts to improve reading instruction. In an early review of the impact of text structures on reading, Pearson and Camperell (1981) discussed the potential of story grammars and expository prose structures for reading comprehension. At that time, however, they rightly pointed out that little was known about the use of text structuring for improved instruction. Fifteen years later, it is possible to report that there is now a considerable body of research evidence which supports the use of discourse analysis and text structure instruction as a means for improving reading comprehension. This research has demonstrated that text structure knowledge—particularly with expository texts—is an effective resource for comprehension both directly and indirectly; that is, students' comprehension and recall improve whether students are trained to recognize the organizational features of texts, or whether students are trained through a variety of reading-strategy instructional approaches.

Efforts to improve comprehension instruction for narrative texts has primarily involved instruction in story structure schemas and anticipatory question generating (Fitzgerald, 1989; Pearson and Fielding, 1991). These instruc-

tional treatments have proven to be useful for low-level students in English L1 elementary school contexts:

1. They provide pre-organizers that generate expectancy about characters, plot, and episodes;
2. They relate material to personal experience;
3. They present background knowledge and synopses of events;
4. They support direct instruction on components of a story-setting, problem, goal, action, outcome—and their identification in stories.

While the use of narrative texts is prevalent in early instruction, and while it is possible to argue that narrative texts are crucially linked to a variety of cognitive activities (Britton and Pellegrini, 1990; Bruner, 1990), it does seem that instruction in the structure of narrative texts to improve comprehension is a source of some disagreement (Fitzgerald, 1989; Pressley *et al.*, 1989). Older and more skilled readers do not seem to demonstrate as much improvement in narrative comprehension from training (Pearson and Fielding, 1991). And while there are a number of research studies which support the use of story structure schemas for instruction at lower grades, for populations beyond the elementary school levels, such instruction may not be as helpful. Researchers attribute these results to the idea that older students already have well developed implicit knowledge of general narrative structures. Beck, *et al.* (1982) and Omanson, *et al.* (1984) suggest that a more efficient instructional program for narrative comprehension is to train students to recognize specific important ideas in the text—central and causal ideas in the narrative—rather than recognizing generic narrative-structure components (e.g., setting, characters, episodes).

When considering more advanced L2 students, a much greater emphasis is typically placed on expository prose. These students need to understand the more abstract patterns of text structuring which are possible in expository prose as well as comprehend the denser and more complex information packaging which is typical in academic contexts. For this reason the remainder of the discussion will focus on the text structuring in expository prose and the effect of teaching text structure for improved reading comprehension.

In a recent review of research on English L1 text structure instruction, Pearson and Fielding (1991) gave the following overwhelmingly positive endorsement:

> In general, we have found incredibly positive support for just about any approach to text structure instruction for expository prose. It appears that any sort of systematic attention to clues that reveal how the authors attempt to relate ideas to one another or any sort of systematic attempt to impose structure upon a text, especially in some sort of visual re-representation of the relationship among key ideas, facilitates comprehension as well as both short-term and long-term memory for the text (832).

While this assessment may be a bit too optimistic, it does point out the clear impact of text structure instruction on improving expository prose comprehension when the training is carefully and systematically done, when it is given sufficient time and attention, and when it is grounded in reasonable instructional approaches. This review will focus on a number of these research efforts in order to demonstrate the theoretical support for certain instructional approaches. The review will also highlight more recent research and practices which appear to be promising ways to extend the use of text structuring for reading comprehension.

TOP-LEVEL TEXT STRUCTURES AND READING INSTRUCTION

Early efforts to focus on the usefulness of text structure have sought to demonstrate a number of organizing principles:

1. that texts are hierarchically organized (in terms of important information, less-important information, details),
2. that readers tend to focus on and remember information at higher levels in the text hierarchy,
3. that top-level structural information (or rhetorical macropropositions) seems to influence comprehension and recall (description, comparison, etc.),
4. that better students seem to recognize and use top-level structuring to assist recall and comprehension, and
5. that top-level structuring can be taught so that students will recognize this aspect of texts and use it to assist in their own comprehension.

After a decade of additional research, it is now well accepted that texts have hierarchical structuring, that comprehension and recall from texts is influenced by a levels effect—students comprehend and recall the higher level information better, and that hierarchical text structuring is related to, but not the same as, textual organizing features such as centrality (the central theme), connectedness (number of connections to a given idea in the text), and causality (being part of the cause and effect sequences in the text) (Singer, 1991; Slater and Graves, 1989; Taylor, 1992; Weaver and Kintsch, 1991). Similar results have been found with L2 students in research by Carrell (1984, 1992, Carrell, *et al.*, 1989). Moreover, *students who recognize hierarchical text structure independently (though not necessarily consciously), and make use of it in their comprehension processing, are likely to comprehend better and recall more information* (Armbruster, *et al.*, 1991; Carrell, 1985, 1992; Richgels, *et al.*, 1987; Taylor, 1992). It should be noted, in passing, that the significant results of various top-level text structure instruction argue persuasively for the position that a good part of text coher-

ence indeed resides in the text itself rather than being a result of reader interpretation. The further development of this argument, however, goes beyond the scope of the present paper.

Despite the converging evidence for the supportive effect of text structure, the relative influence of different top-level text structures is not as well- established; that is, it is still not clear that any particular type of text structuring—collection, description, cause-effect, comparison-contrast, problem-solution—is better for the learning of new information (cf. Carrell, 1984, 1992; Meyer, 1987; Richgels, *et al.*, 1987: See also Martin, 1989, 1993; Mohan, 1990; Slater and Graves, 1989 for other top-level expository text structures). In a recent study, Carrell (1992) argued that claims related to specific texts structures—whether, for example, a comparison-contrast structure improves comprehension better than a description structure—are more likely to be related to other variables such as specific student groups, topics, instructional contexts, and training procedures. This inability to specify preferred text structures does not argue against the importance of text structure for reading instruction; rather, it suggests that student awareness of many of these basic structures will need to be reinforced.

A second major issue concerning the influence of text structure is the extent to which such knowledge of top-level discourse organization can be directly taught to students so that it will lead to improved comprehension. There are three major lines of research on the effect of text structure instruction:

1. The first line of research involves the impact of direct instruction which explicitly raises student awareness of specific text structuring; that is, specifically pointing out to students the structure of the description, or the problem-solution organization (Carrell, 1985; Miller and George, 1992).

2. A second line of research develops student awareness of text structure through more general graphic organizers, semantic maps, outline grids, tree diagrams, and hierarchical summaries (Alvermann, 1986; Armbruster, *et al.*, 1991; Guri-Rosenblit, 1989; Slater and Graves 1989).

3. A third line of instructional training follows from instruction in reading strategies more generally. Since a number of reading strategy training approaches include attention to cohesion structure, main idea identification, summarization, and text study skills (e.g., noting main point in the margin, underlining main points), this line of instructional research is also a source of studies supporting text structure instruction.

Thus, strategy training which includes summarizing, semantic mapping, predicting, forming questions from headings and sub-headings, and using adjunct questions all appear to improve awareness of text structure (Carrell, *et al.*, 1989; Flood and Lapp, 1990; Pressley, *et al.*, 1989; Shih, 1992).

All three lines of instructional research argue that teaching which focuses on text structure increases comprehension and learning. One of the most common sets of effective instructional strategies has been the use of various types of graphic displays to raise student awareness of text structure. This general approach also receives support from various efforts to develop content-based instruction, both for language instruction with L2 students and for content-area instruction with L1 students.

TEXT STRUCTURE AWARENESS AND CONTENT-BASED INSTRUCTION

An important approach to the development of text-structure knowledge is Mohan's pedagogical use of "knowledge structures" in content-based instruction. A major theme in this approach has been the use of graphic organizers—both to support content learning and to focus on language learning. The basic idea underlying this approach is that there are a relatively small number of basic knowledge structures which, in combination, underlie all academic texts. When students are made aware that texts are composed of these organizational formats and patterns, they will be able to understand better the coherence and logic of the information being presented, and they will be able to locate the main ideas and distinguish them from less important information. Such knowledge structures also indicate the intent of the author and the purpose of the text.

The notion of knowledge structures, as presented by Mohan, (1986, 1990) is comprised of six basic structure types, three each for "specifically presented" and for "generalizable" information (three knowledge structures being seen as specific and practical, three being seen as general and theoretical). This distinction suggests that there are text structures which organize particular objects, events, and problem situations (text structures for descriptions, sequences, choices). These individualized occurrences have parallel generalized text structure which organize principles and abstract away from the particular (text structures for classifications, principles, evaluations). Below is a schematic representation of this approach to knowledge structures which underlie academic texts (Mohan, 1990: 123-124).

The argument that there are textual structures which underlie the information which students encounter is a fairly common one (e.g., Martin, 1989; Meyer, 1987; Slater and Graves, 1989). Indeed, Mohan (1990) points out similarities between various approaches to text structuring, explicitly-comparing his approach to Martin's (1989) and Meyer's (1985, 1987) models. Perhaps the most distinguishing aspect of Mohan's approach is his

CLASSIFICATION	PRINCIPLES	EVALUATION
classifying categorizing defining	explaining predicting interpreting data and drawing conclusions developing generalizations (cause, effects, rules, means-ends, reasons) reletting causes and effects experimenting	evaluating judging criticing justifying preference and personal opinions forming personal opinions
observing describing naming comparing contrasting	plan procedures carry out procedures arrange events in sequence understand time and chronology note changes over time	recommending making decisions recognize issues, problems identify alternate solutions problem-solving
DESCRIPTION	SEQUENCE	CHOICE

Figure 1
Some core thinking skills across curricula
(Social Studies Grades 1-7, 8-4; Science Grades 1-7, 8-10)
(Early, Thew & Wakefield 1986)

CLASSIFICATION OR CONCEPTS	PRINCIPLES	EVALUATION OR VALUE
tree venn diagram table headings	graph of function/ line graph crossbreak table ordered pair table	rank ordering rating scale value labelling
pictures, slides diagrams maps	action strip time line flowchart	flowchart decision decision tree decision table
DESCRIPTION	TEMPORAL SEQUENCE	CHOICE OR DECISION MAKING

Figure 2
Graphic conventions for representing knowledge structures

strong emphasis on training students to be aware of knowledge structures through graphic representations of the various structures. For example, Mohan (1990) notes that classification texts are most appropriately represented by tree graphs, venn diagrams, and table headings. Descriptions are best explored through pictures, diagrams, maps, and slides. Time sequences can be highlighted by action strips, time lines, and flow charts. Evaluations can be highlighted by rank orderings, rating scales, and value labeling (see also Tang, 1993).

This emphasis on graphic resources allows for a natural integration of content and language instruction as students learn to see the graphic representations in texts and learn to produce their own graphic models of underlying structures. A major problem for students who read difficult texts is that they often do not comprehend well the text as a whole even though they feel that the vocabulary and sentence structure have not been major obstacles to understanding. The attention to graphic representation, and the effort to teach students how to make their own graphic representations, provides a well-supported means for developing comprehension strategies as was noted in section two of this paper. (See also Paris, *et al.*, 1991; Pearson, *et al.*, 1992; Pressley, *et al.*, 1989; Readance, *et al.*, 1992; Tang, 1992, 1993.)

Additional theoretical support for the use of graphic organizers as described by Mohan can also be drawn from the dual coding theory of Paivio (1986, Sadoski, *et al.,* 1991). This theory, typically viewed as an alternative theory to schema theory, stresses the additive interaction of verbal knowledge representations and visual knowledge representations. On a more general level, this image-based theory receives support from two distinct sources. In a recent book, Damasio (1994), a noted neurologist, argues that all prior knowledge is essentially image-based, and Norman (1993), a leading cognitive psychologist, argues that humans are at their best in learning when tasks center on relevant images and pattern recognition.

For instructional purposes, the use of graphic text representations allows for pedagogical flexibility and attention to both content material and language skills. The use of graphics to reveal text structuring provides a natural means to incorporate task-based activities, cooperative-learning activities, comprehension strategy instruction; it also provides for a focus on formal aspects of language and text structure while learning content (O'Malley and Chamot, 1990; Fathman and Kessler, 1993; McGroarty, 1989; Mohan, 1990; Tang, 1993). Graphic organizers can be used as pre- and/or post-reading activities and can lead to a number of possible types of group-work and opportunities for guided assistance. Students *learning to develop their own graphic representations* of texts will encounter many problem situations—the problems encountered will allow for group assistance as well as specific attention to formal features of language which serve the task purpose.

GENRE-BASED INSTRUCTION

An approach to the teaching of text structure which parallels Mohan's approach in many ways is that being developed currently in Australia (Christie, 1992; Cope and Kalantzis, 1993; Hasan and Martin, 1989; Martin, 1993). In this approach, the notion of textual genre is adapted from Halliday's systemic linguistic theory and is elaborated as a set of discourse structures which guide the use (and the shape) of written discourse, and especially academic discourses. In particular, the functions of academic writing are realized, in good part, by their genre structure, yet students are seldom taught this important set of relationships. Educationally, these researchers argue that students must learn to control this linguistic knowledge in their writing and reading and, thereby, gain power over context-reduced academic prose (Martin, 1989).

Studies by genre-based researchers have pointed out many ways in which the language of specific disciplines varies, both in terms of the conceptual demands on the language resources, and in terms of the formal structuring of the discourse. Although a full explanation of this research line is beyond the scope of the present paper, it is a direction of inquiry which supports the relation between discourse analysis and reading comprehension: It explores how discourse is structured in ways that can be analyzed and that can lead to specific instructional practices (Christie, 1992; Martin, 1989, 1993).

This theoretical approach to the discourse of academic texts has led to the development of genre structures that can be discerned in written discourse and that can be used to raise both teacher and student awareness of genre organization in their reading and writing activities. Since students have relatively little practice with a number of these genres, it is important that the genre structures underlying much of academic discourse be made explicitly aware to students, and that they be a focus of direct instruction. Much like Mohan, Martin (1989) suggests that there are a number of basic patterns for text structuring. On a general level, these include recount, procedure, description, report, explanation, and judgement. More specific efforts to define the structure and staging of genres in specific disciplines is an ongoing line of research (Cope and Kalantzis, 1993).

The practical applications of this approach are presented by Christie (1992; Christie, *et al.*, 1990a, 1990b) in a set of instructional texts for elementary school literacy and by Derewianka (1990) and Collerson (1989) in teacher training texts. Much like Mohan, the emphasis is on the combination of language skills and content-based learning. Within units on cooking, paper making, magic, and experiments, all at different student levels, the genre focus is on *procedures*. The materials are content-centered and task-based; at the same time, efforts are made to instruct students explicitly in the language resources which are used to construct the *procedure* genre (Christie, *et al.*, 1990a). A similar framework for materials centers around the *report* genre

(exploring reports about countries, bears, reptiles, and machines; Christie, *et al.*, 1990b). Although at present, there is little independent empirical research which directly supports this discourse-based approach to text structure instruction, there is evidence noted elsewhere in this paper which would lend support to the general direction of genre-based instruction.

INSTRUCTIONAL STRATEGIES SUPPORTED BY DISCOURSE ANALYSIS

The research outlined above offers many implications for reading comprehension instruction. Direct instruction in text awareness is a central idea that emerges from this work in combination with current research on reading strategy instruction. Consistent instruction in, and practice with, summary writing also provides an application of the above research. One consequence of the research on discourse analysis is that students work with coherent texts that cover a range of genres. Thematically related reading materials provide many purposeful opportunities for exploring the structure of texts. The particular emphasis of this section, however, is with the use of graphic representation to support reading comprehension instruction. This instructional approach is a natural consequence of the research discussed above, and it is considered one of the most effective approaches in numerous instructional research studies.

There are, however, two major practical problems with the translation of graphic representations of discourse into instruction. First, the texts used for instruction typically combine various patterns of discourse organization in any longer text. Second, getting students to produce useful visual representations of text structure is not an easy undertaking and requires considerable practice. In fact, many teachers themselves will need extended training in seeing the structure of texts and then translating that structure into effective guides for student learning.

The first problem is best handled by initially examining parts of texts for specific text organization. After practice with "seeing" smaller blocks of text structure, larger representations can be combined to highlight a top-level text structure that guides the text overall. By building up from smaller, more recognizable patterns, students become comfortable with text organization without the practice becoming too complex. The larger text structures, requiring more complex synthesizing, are best done as post-reading activities so that students' comprehension of the entire text is established, and they can devote more time to the text-organization task. Research has also shown that more complex graphic representations are most effective for improving reading comprehension when they are done as post-reading activities.

The second problem has two parts: For the student, training is a matter of planning for the regular inclusion of text analysis in the curriculum and the consistent exploitation of reading texts for these purposes. If the training is consistent, many early exercises can be fairly simple in nature and not tax

either student/teacher resources or available time. For the teacher, assistance in using graphic representations may require illustrative materials and lessons as well as a series of training workshops; the workshops can provide teachers with practice in discerning the important discourse structures in texts, and then exploiting these structures graphically for instruction.

There are a number of practical resources which illustrate how graphic text representations may highlight important information in a given text. These resources, in turn, suggest a number of practical techniques for instruction through graphic representations. The key to such practice is to decide how specific texts can be matched up appropriately with certain types of representations. Teachers and curriculum developers need to fit the best options for text representations with what the text itself offers. For example, a problem-solution table does not fit with a narrative text, and a procedural time line or flow chart may not easily fit with a cause-and-effect text. The ability to fit texts to graphic representations typically takes practice, but over a period of time, teachers become quite skilled at "seeing" text structure and leading students to "see" the text structure as well.

A practical explanation for using graphic procedures for text comprehension is presented in Tang (1993). A particularly useful feature of this article is its discussion of the transition from less specific graphic organizers (e.g., semantic mapping) to more specific knowledge-structure graphics (with more constraining organization) as part of an on-going cycle of instructional activities (cf. Heimlich and Pittelman, 1986). Among the graphic organizers she recommends are hierarchical tree structures, classification tables, time lines, descriptive arrays, and cause and effect tables.

Two other articles present useful graphic representations for instructional purposes. In an article designed for secondary L1 students reading science texts, Armbruster, *et al.* (1991) uses the term "framing" and discusses a number of tables and arrays to represent text structure. In a second article, also for secondary L1 students, Jones, Pierce and Hunter (1988/1989) describe a set of graphic outlines, discuss guidelines for creating them, and offer procedures for training student to make their own representations (see Figure 3). Jones, Pierce, and Hunter offer a useful set of guidelines for training students to create graphic organizers:

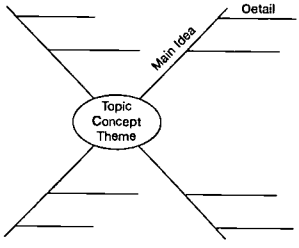
1) Present students with good examples of completed graphic organizers for texts they have read.
2) Model how to construct a graphic organizer with students and use think-aloud techniques so students can hear and see what you are thinking as the teacher.
3) Discuss with students when and how they should use these graphic organizers for their own purposes.
4) Provide a lot of coaching for the students as they create graphic representations for sections of texts and for whole texts.
5) Give students many opportunities for practice and give them appropriate positive feedback.
6) Gradually shift responsibility for constructing graphic representations to the students.

7) Allow for individual differences in students' thinking and their graphic representations.
8) Set clear and manageable goals since the training process takes a sizable amount of time.

There are many other options for graphic representations that indicate discourse structure. A variety of outlines of the text organization itself can be constructed. Parts of the outline may be filled and other parts left blank. Alternatively, major units of the outline may be moved around out of sequence, and students will need to reassemble the outline. A third option is for students

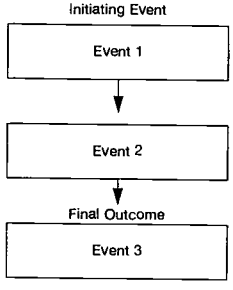
Graphic representations are visual illustrations of verbal statements. Frames are sets of questions or categories that are fundamental to understanding a given topic. Here are shown nine "generic" graphic forms with their corresponding frames. Also given are examples of topics that could be represented by each graphic form. These graphics show at a glance the key parts of the whole and their relations, helping the learner to comprehend text and solve problems.

Spider Map



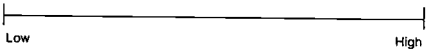
Used to describe a central idea: a thing (a geographic region), process (meiosis), concept (altruism), or proposition with support (experimental drugs should be available to AIDS victims). Key frame questions: What is the central idea? What are its attributes? What are its functions?

Series of Events Chain



Used to describe the stages of something (the life cycle of a primate); the steps in a linear procedure (how to neutralize an acid); a sequence of events (how feudalism led to the formation of nation states); or the goals, actions, and outcomes of a historical figure or character in a novel (the rise and fall of Napoleon). Key frame questions: What is the object, procedure, or initiating event? What are the stages or steps? How do they lead to one another? What is the final outcome?

Continuum/Scale



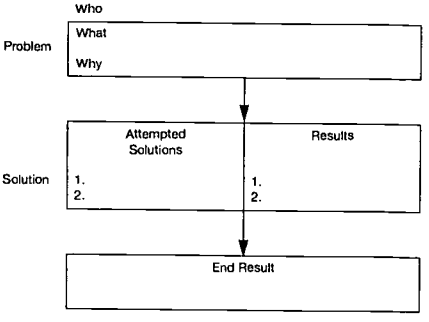
Used for time lines showing historical events or ages (grade levels in school), degrees of something (weight), shades of meaning (Likert scales), or ratings scales (achievement in school). Key frame questions: What is being scaled? What are the end points?

Compare/Contrast Matrix

	Name 1	Name 2
Attribute 1		
Attribute 2		
Attribute 3		

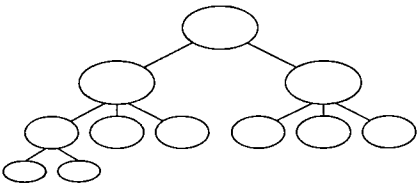
Used to show similarities and differences between two things (people, places, events, ideas, etc.). Key frame questions: What things are being compared? How are they similar? How are they different?

Problem/Solution Outline



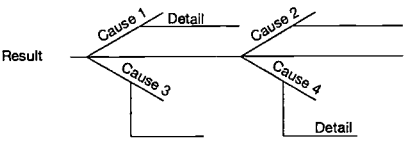
Used to represent a problem, attempted solutions, and results (the national debt). Key frame questions: What was the problem? Who had the problem? Why was it a problem? What attempts were made to solve the problem? Did those attempts succeed?

Network Tree



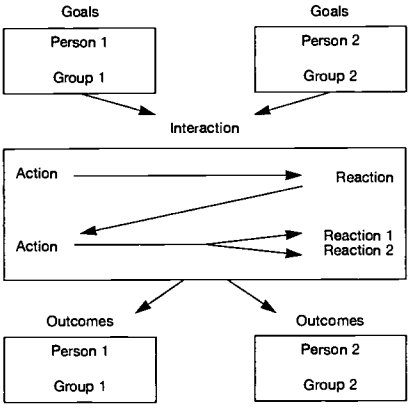
Used to show causal information (causes of poverty), a hierarchy (types of insects), or branching procedures (the circulatory system). Key frame questions: What is the superordinate category? What are the subordinate categories? How are they related? How many levels are there?

Fishbone Map



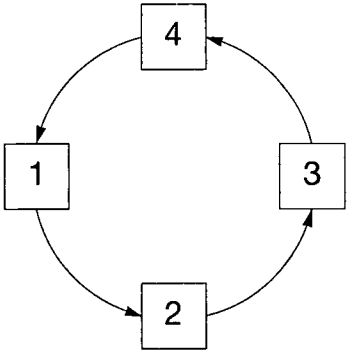
Used to show causal interaction of a complex event (an election, a nuclear explosion) or complex phenomenon (juvenile deliquency, learning disabilities). Key frame questions: What are tha factors that cause X? How do they interrelate? Are the factors that cause X the same as those that cause X to persist?

Human Interaction Outline



Used to show the nature of an interaction between persons or groups (European settlers and American Indians). Key frame questions: Who are the persons or groups? What were their goals? Did they conflict or cooperate? What was the outcome for each person or group?

Cycle



Used to show how a series of events interact to produce a set of results again and again (weather phenomena, cycles of achievement and failure, the life cycle). Key frame questions: What are the critical events int the cycle? How are they related? In what ways are they self-reinforcing?

Figure 3

to take a list of the outline phrases and re-assemble the organization. A fourth option is for students to fill in the signal words that mark the various parts of the outline organization. A fifth option is to provide students with the function of each paragraph in a longer reading (or have students decide on the functions), and then have students combine these paragraphs into larger units that reflect major sections of the reading; then students can explain their decisions by referring back to signals and patterns in the text itself.

Aside from outlines, variations on graphic organization can be constructed for flow charts, evaluative continua, procedural sequences, maps, matrices, tree diagrams, and visual figures that describe a process or an object. The formats noted in Figure 3 as well as formats discussed above are open to many variations.

CONCLUSION

The overall perspective gained from reviewing the various applications of discourse analysis to reading instruction is that there is considerable evidence to support text structure instruction as a way to improve reading comprehension. The various applications which lead to improved text structure awareness receive considerable theoretical and empirical support. It is worth noting, also, that instruction in text structure overlaps with reading strategy instruction. Indeed, text structure instruction is typically listed as one of a small number of important comprehension strategies with consistent results (Pearson, *et al.*, 1992; Pressley, *et al.*, 1989; Readance, *et al.*, 1992; Slater and Graves, 1989). This overlap points again to the influence of text structure awareness on comprehension processes in reading; that is, awareness of text structuring 1) improves higher-level comprehension processes, 2) provides the frame for both bridging and elaborative inferencing in the comprehension and interpretation of text material (Oakhill and Garnham, 1988; Singer, 1991), and 3) allows students to recognize differences between prior knowledge that may be inaccurate and textual knowledge that calls for students to restructure their prior knowledge.

In short, there is considerable support for the direct instruction of textual organization as a way to improve reading comprehension. As a set of reading and study strategies, text structure instruction has also been shown to improve students' content learning in many academic subjects. Thus, it serves both language skills and academic content learning. It is evident that, with reasonable care and attention, text structure awareness can be taught effectively and lead to improved reading comprehension.

In addition to the research and applications discussed in this chapter, there are yet other applications from discourse analysis research which can be applied to reading comprehension instruction. These include the role of cohesive referencing in texts, the importance of lexical relations in texts, the use of summarizing, outlining, and other comprehension strategies, and the highlighting of coherence signals in texts (e.g., given-new relations, transition marking, coherence relations between sentences and paragraphs). Treating all of these aspects of discourse analysis and their relations to reading comprehension is not possible in a chapter, but they should be noted here for their roles in developing reading comprehension and other language abilities.

To close, it is safe to say that one major applied accomplishment of written discourse analysis has been its impact on reading comprehension instruction. Needless to say, further research with many different L2 student groups and instructional contexts should be carried out to establish better the various ways in which research in written discourse analysis supports L2 instructional practices.

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SECTION TWO

READING INTO WRITING

2

Contrastive Rhetoric

Robert B. Kaplan

This chapter begins by discussing the concept and origins of the term "contrastive rhetoric." In a brief description of the writing process, the questions of appropriate topics, acceptable evidence, and effective organization are discussed, and culturally and linguistically specific ways of describing the world are described. A model for the writing process is presented, focussing on the impact of author, content, audience, purpose, time, place, and genre of the writing situation. Finally, effective and ineffective examples of written English are presented and analyzed.

INTRODUCTION

What is contrastive rhetoric? Partly based on Whorfian ideas of the relationship between language and thought, it is an hypothesis claiming that (while mathematical logic may be universal) the logic expressed through the organization of written text is culture-specific; that is, it posits that speakers of two different languages will organize the same reality in different ways (Kaplan, 1988; 1987). That they should do so seems self-evident, because different languages provide different resources for organizing text. However, this filtering of text logic through language is largely unconscious; that is, learners of an L2:

- are not aware of the way in which their L1 influences the way they organize text logic,
- are not aware of the way in which an L2 organizes text logic, and
- are not aware that there is a difference.

As Kellerman notes, "Coping with new ways of 'thinking for speaking [or writing an L2]...' means attending to features of context that are either not relevant or are defined differently in the native language..." (1995: 141). Initially, the idea underlying contrastive rhetoric arose from practical daily

experiences of L2 writing teachers, who can, with astonishing accuracy, identify the first language of students writing in the L2 on the basis of the way in which they structure their texts. Christensen (1967) devised an outline-like methodology for examining the way in which propositions were related to each other in text. Kaplan (1966) applied that analytic mechanism to texts written in English by speakers of other languages to show that such writers organized their texts differently; he extended the analytic technique to a pedagogical method to help students become conscious of these differences. He believed that, if students could see differences between the way they organized text in their L1 and the way "typical" English texts were organized, they could more closely approximate the text logic—the propositional relationships—characteristic of English.

Admittedly, the earliest work in contrastive rhetoric was significantly flawed, attempting to compare student writing in L2 with professional writing in L1, ignoring differences in genre, and assuming that there was a single "general" text-logical structure for English. Subsequent research has demonstrated these flaws (Leki, 1991). Much recent work has concentrated on contrastive studies between two specific languages in which the constant was English text-logic and the variable was the text-logic of another language; there has now been fairly extensive study of English and some other languages (for which, see e. g., Kaplan, *et al.*, 1983; Connor and Kaplan, 1987; Purves, 1988). More recent work, rather than attempting to generalize across genres, has focused on particular text genres (e. g., Cantor, 1994; Kaplan, *et al.*, 1994; Lux, 1991; Mauranen, 1993; Swales, 1990a, 1990b; Touchstone, 1995; Touchstone, Kaplan and Hagstrom, 1995).

THE ACT OF WRITING

There are four questions, entirely culturally based, that a writer must face at the start of any cross-linguistic exercise in writing:

What can be discussed?
What is evidence?
How can that evidence most effectively be organized?
To whom may a text be addressed?

What can be Discussed?

A native speaker of American English, may, for example, be willing to discuss intimate aspects of his/her sex life, but may be unwilling to discuss bathroom functions, labeling any attempt to do so as "scatological." English contains euphemisms for bathroom functions and facilities *(pee pee, number one, men's room, lavatory, bathroom).* Similarly, native speakers of American English may be reluctant to discuss death, using euphemisms in this register as well *(the deceased, the dearly beloved, crematorium, mortuary park).* Speakers of other languages may be reluctant to discuss their intimate rela-

tionships, but may find a discussion of bathroom functions or of death quite natural. What is "natural" in any given cultural context constitutes the key.

What is Evidence?

Confucianists are likely to regard the sayings of Confucius as evidence; devout Moslems may regard the precepts articulated in *The Koran* as evidence, and devout Christians are apt to quote *The Bible* as evidence. Inexperienced students may be unable to differentiate between an article in TIME or *Newsweek* and an article in a scholarly journal with respect to the validity of evidence, or they may be willing to accept as evidence something said by Donahue, or Oprah Winfrey (or one of their guests) during their respective television programs. Indeed, it is this area of evidentiality that gets many students into trouble in the context of plagiarism. In many cultures, if someone has already said something well, there is no need for a student to revise it, and if the source is widely known *(e. g., Confucius, The Koran, The Bible)*, there is no need to attribute it. It is perceived wisdom that imitation is the sincerest form of flattery. In the academic world, the criteria for evidentiality are rather more complex, and the English-speaking world is marked by the capitalistic notion that not only ideas but the actual words in which they are couched are the property of the writer. Evidentiality is defined discipline by discipline, and students must learn what counts as evidence in English academic writing and recognize that the standards in other languages might be different.

How can Evidence Most Effectively be Organized?

Here is the crux of the matter. Writers arrange evidence in terms of their "...abilities to convey just those analyses of the event that are most compatible with the linguistic means provided by their languages..." (Berman and Slobin, 1994: 12). Kellerman (1995: 138-139), citing Berman and Slobin's evidence, presents four versions of the same phenomenological event interpreted in four different languages to illustrate the point that the resources available to speakers of different languages prompt somewhat different presentations of the event.

> Below is a (slightly abbreviated) cross-language example showing how different languages "filter" the way in which events are related. It comes from transcripts of children with different native languages relating the "Frog Story" from a set of pictures without words (Berman and Slobin, 1994: 11). All of the children in these examples are native speakers:
>
> **English**
>
> And he starts running. And he tips him off over a cliff into the water. And he lands (9; 11)
>
> **German**
>
> Der Hirsch nahm den Jungen auf sein Geweih und schmiβ ihm den Abhang hinunter genau ins Wasser.
>
> [The deer took the boy on his antlers and hurled him down from the cliff right into the water.] (9; 11)

Spanish
El ciervo le llevó hasta un sitio, donde debajo había un rio.
Entonces el ciervo tiró al perro y al niño al rio. Y después, cayeron.
[The deer took him until a place, where below there was a river.
Then the deer threw the dog and the boy to the river. And then they fell.]
Hebrew
Ve ha'ayil nivhal, ve hu hitxil laruts. Ve hakelets rats axarav, ve hu higia lemacok she mitaxat haya bitsa, ve hu atsar, ve hayeled ve hakelev naflu labitsa beyaxad.
[And the deer was startled, and he began to run. And the dog ran after him, and he reached the cliff that had a swamp underneath, and he stopped, and the boy and the dog fell into the swamp together.] (9; 7)

Berman and Slobin claim that the difference between these excerpts is to some extent determined by the linguistic possibilities inherent in each of the languages. The first two, in English and German, describe the complexity of the fall via a series of adverbial particles and prepositional phrases *(tips off, over a cliff, into the water; schmiβ, den Abhang hinunter, ins Wasser).* The verbs *tip* and *schmeiβen* [hurl] signify the manner in which the deer causes the fall. The Spanish and Hebrew versions resemble each other but differ from the English and German versions. In the former pair, the event is recounted as a series of episodes. First there is a description of location (cliff with river below, place with swamp underneath); then the deer acts and, as a result, the boy and the dog fall. Berman and Slobin point out that the verbs chosen *(throw, fall, stop)* are "bare descriptions of change of state, with no elaboration of manner" (Berman and Slobin, 1994:12). Furthermore:

> These are not random differences between the narrative styles of these...children, but rather show their abilities to convey just those analyses of the event that are most compatible with the linguistic means provided by their languages. English and German provide large sets of locative particles that can be combined with verbs of manner, thereby predisposing speakers toward a dense style of encoding motion events....A different style arises in the other...languages, which rely more on simple change-of-state and change-of-location verbs,...predisposing speakers towards more extended analyses of motion events (Berman and Slobin, 1994: 12).

The order of presentation appears to be very culture specific, conditioned by the linguistic resources available in the L1 but also by customary modes of perception.

To Whom may a Text be Addressed?
All cultures define who may speak and to whom. Academic writing assumes an equality of addresser and addressee; that is, academic writing presumes a context in which peers discuss mutually held ideas. This notion implies that addresser and

addressee are defined discipline by discipline; a professional chemist may address another professional chemist, etc. The undergraduate world is, however, differently structured, with an uneven distribution of power; the teacher is more powerful than the student. Students learning to write must learn to cope with this essentially schizoid environment in which they recognize that there is an unequal relationship but must pretend that the relationship is in fact an equal one.

Aside from the classroom artificiality, different cultures also have internally consistent hierarchies, and some languages (e.g., Chinese, Japanese) are syntactically marked with elaborate politeness structures designed to deal with that complex hierarchy, differentiating between males and females, elders and juniors, and so on. English to a large extent lacks the syntactic marking (though the hierarchy of English-speaking society is certainly preserved in semantics—see, e. g., the difference between *sweat* and *perspire*). Scollon (1991) takes up the matter in the context of English and Chinese, and there are other studies of specific language pairs (e.g., Yoshikawa, 1978).

Towards a Model

Thus, text occurs within the phenomenological perception of the community of speakers; it is also constrained historically by the way text has been used in that community and by the kinds of genres available to that community. A speaker of English knows what a sonnet, for example, is, and what it may be used for; a speaker of English is unlikely to use a sonnet to transmit a culinary recipe; a speaker of Japanese is unlikely to use a haiku to transmit a business contract. Speakers of a language recognize certain genres and their uses, and therefore their text production is constrained within that knowledge. A speaker of English is unlikely to write an "eight-legged essay," while a speaker of Chinese may, even given that the form is obsolete, produce such a form if it is within the speaker's inventory of available genre.

Additionally, there are four kinds of difficulty which may affect a text:

Contingent difficulty—use of arcane or technical reference *(jargon)* familiar only within certain sub-communities;

Tactical difficulty—willingness of a writer to be understood only up to a point (perhaps because being fully explicit may be impolite, or politically awkward, or simply dangerous);

Modal difficulty —presentation of a view of the human condition which is unfamiliar or inaccessible; e. g., the notion that a White person cannot understand the Black experience;

Ontological difficulty —constraints created by the limits of the language itself, best illustrated by nonsense verse (e. g., in *Alice in Wonderland* or the poetry of e e cummings [sic.]). [See Steiner, 1978.]

MODEL OF TEXT GENERATION AND RECEPTION

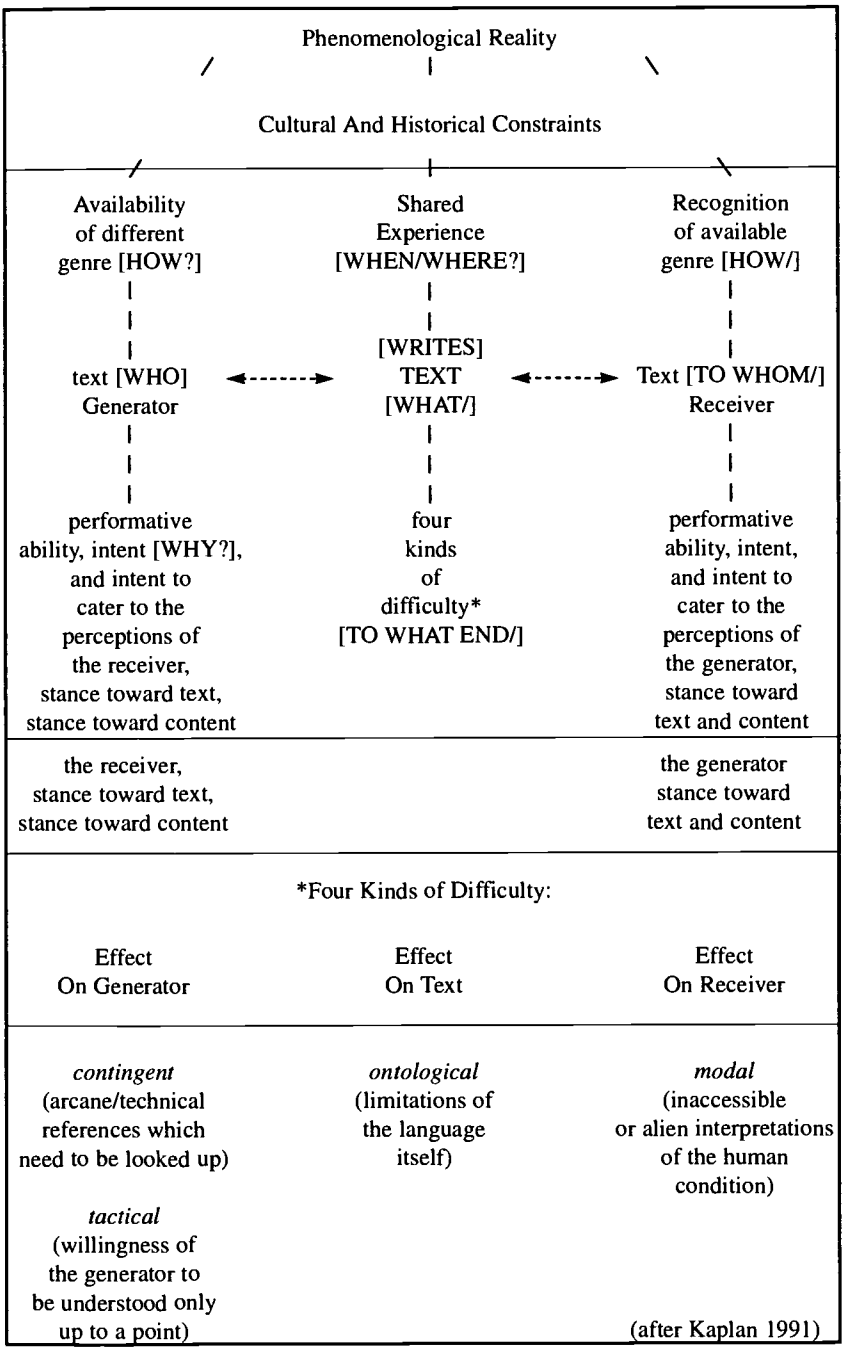

Table I

Given these various considerations, one may construct a rough model of what is involved in the generation of text in any language (see Table I). Text may, of course, be either written or spoken—the focus here is on written text. (It is not clear to what extent the model for the generation of spoken text is identical to that for written text.) The text generator, text, and text receiver are connected by arrows pointing in both directions, because, obviously, the text generator is also invariably one of the text receivers; text generators normally read what they have written as part of the writing process. When text generator and text receiver are the same person, the shared world knowledge is perfectly matched; this is never the case with any other text receiver.

This model addresses the question:

Who writes what to whom, to what end, why, when, where, and how?

When the model is different across two languages, the task of text creation is difficult, because the information contained at some or all of the nodes of the model will be different; that is, the persona of the writer, the available genres, and the persona of the audience will be different in each language.

A COVEY OF EXAMPLES

Students may be introduced to some taxonomy of genres like the following:

Audience	Writing without Composing	Writing through composing	
		Knowledge Telling	Knowledge Transforming
self	shopping list	diary	
one known other	greeting card	personal letter	
one unknown other	check	business letter	
small group known		sermon	
small group unknown			
large group	application form		play, poem, novel, story

Table 2

A few example genres are provided to suggest what is being sought. Learners can fill in the rest of the taxonomy based on their own writing experience. Once various genres have been inserted into the taxonomy, attention may be given to identifying the features of each cell; e.g., a shopping list is a selected set of items, normally arranged in columnar order, and stated as nouns or brief noun phrases. Not much composing is required to prepare a *shopping list.* A *diary*, on the other hand, consists of brief complete sentences; it is narrative in form, recounting selected activities over some stipulated time period (e. g., daily, weekly). Because its purpose is to record

events, it is often chronologically organized. The intent is not to comment to any significant degree on the meaning of events; rather, it is to enumerate events, so while composing is involved, it is only a matter of *telling* what happened, not a matter of *transforming* events into a story or some other more complex text form. Because a diary deals with past events, the tense is likely to be dominantly past. A personal letter may be seen as a sort of "diary made public"; one tells a friend or relative about what one has been doing. Questions may occur in a letter, but would be unlikely in either a shopping list or a diary. Furthermore, while a diary may be non-selective—it can list everything the writer remembers—a letter is more selective, since one may choose not to share everything that has occurred since the last letter. These explications of a few of the types are intended to serve as examples of the sort of analysis students may be asked to undertake.

The taxonomy also permits the introduction of a discussion of audience. When one writes a *shopping list*, the audience is quite probably one's self. (If it is some other person, the list will require annotation.) In such a case, the world knowledge of writer and reader are absolutely co-terminus; the writer and the reader have the same knowledge, and there is no need to worry about presuppositions concerning shared information. Once one moves to a form in which even one other reader is involved (e. g., *a personal letter*), a different set of considerations must come into play; the writer is obliged to be concerned about the extent to which knowledge is shared between reader and writer and is obliged to explain some events in greater detail so that the reader has a context within which the event can be understood. In each case, students can be asked to define the audience in some detail. For example, in a sermon, the audience and the writer know each other quite well, since they are likely to be together on a weekly basis, but they know each other only in one very specific content—that in which a minister and his/her congregation interact. Some things can be considered shared, while others may not be shared to any significant degree. A minister may choose to deliver a sermon based on the story of the "Widow's mite"; in doing so, s/he may assume that his/her parishioners know the story and are prepared to grasp what the minister wishes to communicate. On the other hand, if the minister wishes to deal with a complex or controversial topic—for example, abortion—s/he must construct an argument rather than tell a story, with information supplied to establish a common base of understanding, and probably s/he needs to avoid some of the more abstruse points of theology.

A simple form may be chosen—for example, a process—and students may be asked to compose the process in different ways based on different audience assumptions; e.g., "How to Start a Car" assuming cultural and individual familiarity with cars, keys, and locks on the one hand, and on the other hand assuming little experience with this technology. The learners may not initially be asked to *write* such a text; it is enough for purposes of audience awareness to be able at first to construct an oral text.

Up to this point, learners have been asked to manipulate events and impressions; it is time for learners to begin to manipulate ideas. The compositional skills required for texts of narration, description, process, classification, and definition are different from the compositional skills required for texts of analysis and synthesis. (See the important distinction between "knowledge telling" and "knowledge transforming" in Bereiter and Scardamalia, 1987.) In the earlier stages of composition instruction, the objectives are to establish a comfort level with the writing activity, to provide practice in the manipulation of grammatical structures, and to increase vocabulary knowledge. All of these objectives can be met through the kinds of writing undertaken at the lower levels—narrative, descriptive, etc. These minimal skills are likely to carry over, to some extent (depending on how well they have been learned), to the essayist writing involved in argumentative, analytic, and synthetic writing. The compositional skills involved in these cognitively more complex activities are significantly different.

Contrastive rhetoric analysis is based on an attempt to visualize the relative levels of subordination among the propositions that constitute a text. A proposition is not necessarily a sentence; it may be a phrase, a clause, a sentence, or a cluster of several sentences. In contrastive rhetoric analysis, a proposition is called a discourse unit, and a cluster of closely related discourse units is called a discourse bloc. A discourse bloc analysis looks something like an outline. The similarity in appearance is misleading. First, an outline is a planning document; under ideal circumstances, an outline can be recovered from a text, but in most circumstances it is difficult or impossible to recover an outline (though it is certainly possible to create an outline which reflects the structure of the text). Although a discourse bloc analysis looks like an outline, it has a rather different purpose. The further to the left a unit is placed, the higher it is in dominance of the text. The further to the right a discourse unit is placed, the less dominant it is in the text. Those discourse units occurring furthest to the right often consist of examples and illustrations supporting the text argument. Such discourse units are subordinate to ones placed further to the left. Some discourse units are, of course, parallel to each other—or coordinate. Let us look at an analysis of a shorter text in which it is possible to get down to the level of individual discourse units. (The sentences are numbered for ease of reference.)

On the trail of the first Americans

(1) It has been believed for a long time that the first inhabitants of America were people from northeast Asia. (2) Anthropologists believe that small bands of nomadic hunters followed herds of animals across the Bering Straits land bridge and into what is now Alaska, later spreading throughout North and South America.

(3) There is now some evidence to support this belief. (4) Examination of 20 teeth and 64 tooth sockets of paleo-Indians (the first Americans) which were discovered in Chile in 1936 shows a number of common characteristics which are also found in Asiatic teeth. (5) These characteristics include a shovel-like slope on the

front and back of the incisors, an L-shaped ridge on the chewing surface of the lower molars, small bumps on the chewing surface of the lower molars and three-rooted front molars. (6) Since dental features are genetically determined and do not change over long periods of time, it is significant that these teeth are similar to the teeth of northeast Asians (as well as the teeth of present-day North and South American Indians). (7) For example, 353 teeth of paleo-Indians, present-day Indians, and northeastern Asiatics were examined, and all had the shoveling on the incisors. (8) Of 8,000 white American and European teeth, less than one-third had this feature.

(9) These findings, then, corroborate the theory that the first Americans came from northern China, Mongolia, Japan, and Asiatic Siberia (Chedd, 1954).

In this text, evidence is systematically introduced to support the initial contention. A detailed analysis might look like the following table. (The major semantic link [having to do with teeth] is printed in bold italics; there are also other sets of semantic links through the text.) On the basis of this information it is possible to define the intended audience (See Table III).

Certain generalizations can be drawn from this analysis. Before any generalizations are attempted, it is important to reiterate that no single pattern can represent the complexity of genres available in English or in any other language. While the potential number of available genres in English (or in any language) is very large, academic essayist English does demonstrate certain regularities. Such texts often display complex patterns of semantic collocations which signal the relative relationship of propositions to each other. Further, academic essayist texts often display relatively complex patterns of subordination; there are often many levels of subordination in a text. (At the same time, both relatively simple and excessively complex patterns of subordination tend to mark the text as non-standard; thus, there seems to be a parabolic curve of complexity, with English academic essayist text falling roughly at the apogee of the parabola.) There is nothing in this text type that does not directly contribute to the flow of the argument; tangential information is not comfortably accommodated in such texts. Finally, it appears that the text progresses in a linear fashion from statement of aboutness to termination.

This latter phenomenon belies the possibility of the template three- and five-paragraph essay and the notion that the three-paragraph essay has the obligatory features *introduction, body*, and *conclusion*. The presence or absence of *introduction* and *conclusion* depends on the nature of the text. The illustrative text above does not contain a formal *conclusion* (although it does contain a summary/recapitulation of the thesis). It might be argued that the first sentence of this text constitutes an *introduction*, though, more realistically, the first sentence seems to state the thesis of the text. The propositions of this text are not necessarily equated with grammatical sentences.

Table III

1.	I.	**Topic statement**: "...the first inhabitants of America were *people from northeast Asia* ...." [Note relationship to title.]	
2.		1. **Support**: "...Anthropologists believe that small bands of nomadic hunters followed herds of animals across the Bering Straits land bridge and into what is now Alaska..."	
		a. **Support:** "...later spreading throughout North and South America..."	
3.	A.	**Claim of Evidence:** "...There is now some *evidence to support this belief*..."	
4.		1. **Evidence:** "...Examination of 20 ***teeth*** and 64 ***tooth sockets*** of *paleo-Indians* ... which were discovered... shows a number of common characteristics which are also found in **Asiatic teeth....**"	
		a. **Definition:** "...(the *first Americans*)..."	
		b. **Location:** "...in Chile..."	
		c. **Dating:** "...in 1936..."	
5.		d. **Detailed support:** "...These characteristics include:..."	
		(I.) **List:** "...a shovel-like slope on the front and back of the ***incisors***,..."	
		(II.) **List:** "...an L-shaped ridge on the chewing surface of the lower ***molars***,	
		(III.) **List:** "...small bumps on the chewing surface of the lower ***molars*** and..."	
		(IV.) **List:** "...three-rooted front ***molars***...."	
6.		e. **Argument:** "...***dental features*** are genetically determined	
		(I.) **Support:** and do not change over long periods of time,	
		f. **Argument:** "...it is significant that these ***teeth*** are similar to the teeth of *northeast Asians* ..."	
		(I.) **Sub-Argument:** "...(as well as the teeth of present-day *North and South American Indians*)...."	
7.		2. **Evidence:** "...For example, 353 teeth of *paleo-Indians, present-day Indians*, and *northeastern Asiatics* were examined, and all had the shoveling on the ***incisors.***	
8.		3. **Evidence:** "...Of 8,000 white American and European ***teeth,*** less than one-third had this feature..."	
9.	B.	**Summary and Recapitulation:** "...*These findings,* then, corroborate the theory that the first Americans came from *northern China, Mongolia, Japan, and Asiatic Siberia* ...."	

It may be useful to look at a non-standard text. The following text was written by a native speaker of Tsez who speaks Russian as a second language and is learning English.

Language Policy in the Former USSR

(1) Soviet period is the most intensive for language planning activities and therefore the understanding not only mechanisms of Soviet language policy, but also the political, historical and demographic context in which all these decisions were taken are of crucial significance to understanding the present day language situation in [name of geographic area] as well as any other regions.

(2) In general two factors determined the character of L[anguage] Pol[icy] in Soviet Union, which are: demographic on the one hand, and political on the other. (3) The significance both of them difficult to overestimate.

Political factors:

(4) When the soviet power had been established the administration was faced with two pressing requirements: mass communication and mass education. (5) The majority of the indigenous population remained to be uneducated, the majority of the former languages remained to be unwritten.

(6) Within this particular situation a certain Language policy become necessary. (7) However its realization was mostly determined by Central Policy, which took into consideration one or another ideological concepts. (8) At the same time those ideological concepts could be realized within certain political and psychological context.

(9) The following factor also played significant role in L[anguage] Pol[icy] in Soviet union: it was believed that the contact of different cultures and languages is at least potentially beneficial. (10) Based on this assumption many liders of national minorities work toward the realization of this goal. (11) The first effort of the government toward the promotion of Russian naxodil vseobshuju podderzhku i ponimanije v nacional'nyx regionax....

This text can profitably be compared with the one entitled "On the trail of the first Americans," which is roughly similar in length. Both are English academic essayist texts. (The latter text is, obviously, marked by some surface-level non-native speaker characteristics which will be ignored in this analysis.)

Much of the development in this text occurs largely at the same level; that is, there isn't much subordination. Further, it will be noted that the argument does not flow smoothly; there is the substantial parenthetical section—a digression—which interrupts the text flow, and there is a good deal of jumping around from topic to topic without developing any topic adequately. The logical structure of the text is not marked by the presence of "advance organizers."

Table IV

1. I. **Topic Statement:**"...Soviet period is the most intensive for language planning activities and
   A. **Explanation:** "...*therefore* the understanding not only mechanisms of Soviet language policy, but..."
   B. **Explanation:** "...*also* the political, historical and demographic context in which all these decisions were taken are of crucial significance to understanding the present day language situation in [name of geographic area] as well as any other regions...."

[NB: *The thesis statement invokes Soviet language policy, but the argument moves quickly to the language policy situation in a particular former Soviet territory.*]

2. C. **Explanation:** "...In general two factors determined the character of L[anguage] Pol[icy] in Soviet Union, which are:..."
   1. **Specification:** "...demographic *on the one hand* ..."
   2. **Specification:** "...and political *on the other*...."
3. D. **Explanation:**"...The significance *both of them* difficult to overestimate...."
4. E. **Explanation:**"...*When* the soviet power had been established the administration was faced with *two* pressing requirements:
   1. **Specification:** "...*mass communication and mass education*...."
5. F. **Parenthetical material:** "...The majority of the indigenous population remained to be uneducated, the majority of the former languages remained to be unwritten...."
6. G. **Parenthetical Material:** "...Within this particular situation a certain Language policy become necessary...."

[NB: *One must assume that the particular situation is the absence of literacy described in I. F, but this argument does not follow from I. A-E. Thus, this is a topic shift.*]

7. H. **Contrast**: "...However its realization was mostly determined by Central Policy,..."
   1. **Specification:** "...which took into consideration one or another ideological concepts...."
8. 2. **Explanation:** "...*At the same time* those ideological concepts could be realized within certain political and psychological context..."
9. I. **Explanation**:"...The *following factor* also played significant role in L[anguage] Pol[icy] in Soviet union:..."
   1. **Explanation:** "...it was believed that the contact of different cultures and languages is at least potentially beneficial...."
10. 2. **Explanation:** "...*Based on this assumption* many liders of national minorities work toward the realization of this goal
11. J. **Explanation:** "...The first effort of the government toward the promotion of Russian naxodil vseobshuju podderzhku i ponimanije v nacional´nyx regionax....

Clyne (1994) presents a number of contrastive analyses of various languages (see, esp., Ch. 5, section 5.2 - 5.8, pp. 168-175). Clyne's analysis is derived from a set of five cultural parameters he proposes:

> ***Form vs. Content*** — English cultures more strongly foreground form while other cultures are more content oriented (186);
>
> ***Verbal vs. Literate*** — English cultures stress the written language as the main medium of effective communication while other cultures stress oral language (189);
>
> ***Rhythm of Discourse*** — English cultures tend to stress symmetry and do not stress positive politeness while other cultures function differently in both contexts (190);
>
> ***Directionality*** — English cultures tend to be unique in their emphasis on linearity (190);
>
> ***Abstractness vs. Concreteness*** — English cultures tend to stress concreteness and reasoning (191).

These parameters are not to be interpreted as polar oppositions; rather, certain culturally-defined writing practices tend to move in one or the other direction along the posited continua.

It seems to me that this sort of analysis of student texts can help students to understand how to organize a text and how to avoid some of the more egregious faults that occur in student text organization—some deriving from first language interference, but some deriving as well from inexperience with text organization. A purpose of such analysis is to bring to consciousness what is typically not perceived. The issue is summarized by Mauranen in a contrastive text linguistic study of Finnish and English:

> ...[writers] differ in some of their culturally determined rhetorical practices, and these differences manifest themselves in typical textual features. **The writers seem not to be aware of these textual features, or the underlying rhetorical practices.** This lack of awareness is in part due to the fact that textlinguistic features have not been the concern of traditional language teaching in schools....Such phenomena have therefore not been brought to the attention of [writers] struggling with writing....Nevertheless, these sometimes subtle differences between writing cultures, often precisely because they are subtle and not commonly observable to the non-linguist, tend to put...[L2 writers] at a rhetorical disadvantage in the eyes of [L1] readers....This disadvantage is more than a difference in cultural tastes, since it may not only strike readers as lack of rhetorical elegance, but as lack of coherent writing or even thinking, which can seriously affect the credibility of non-native writers (1993: 1-2; emphasis added).

The technique can be used as well in helping students to understand summarization, and more generally in helping students to abstract meaning from reading texts. In the classroom, students can be asked to analyze texts they have read; ideally, small groups can work together, and several small

groups working on the same text can subsequently compare their analyses and discuss discrepancies. It is perhaps too painful for students to analyze their own texts initially. Teachers may wish to submit for analysis texts written in a prior term. Teachers need to model the approach several times before students are asked to undertake their own analyses. A problem is that texts of reasonable length are required to facilitate the process, and longer texts take more time to analyze. The technique produces results, and students' sense of text organization improves as a result of contrastive rhetoric analyses.

Thus, contrastive rhetoric posits that speakers of two different languages will organize the same reality in different ways. That they should do so seems self-evident, because different languages will provide different resources for organizing text. The techniques discussed here are intended to bring these differences to awareness and to help students perceive how text in an L2 (English, in this case) is organized and how that organization may differ from the learner's L1.

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3

Text Analysis and Pedagogical Summaries: Revisiting Johns and Davies

Ann Johns and **Danette Paz**

Although students are often required to write summaries, they often either lack appropriate strategies for writing effective summaries or are taught relatively inflexible strategies inappropriate to the genre they are reading. This chapter argues that Johns and Davies' (1983) topic types demonstrate how form and content interact and provide useful scaffolding for identifying the macrostructure of a text. Applications for research and pedagogy are described.

Summarizing is a common strategy in reading, writing and talking, both within our second/foreign language classrooms and without. Yet few, if any, course books or manuals give practitioners adequate assistance for teaching academic summarizing to ESL/EFL students or for analyzing and evaluating student summaries from different content areas once they have been written. This example of a set of summary instructions, taken from a popular ESL textbook written in the 1980s, *Approaches to Academic Reading and Writing,* is still quite typical. The authors tell students to:

1. Read the original text carefully.
2. Identify the controlling idea and the relationships among the supporting ideas.
3. Decide which examples are necessary for a clear understanding of the text.
4. Write a first sentence which includes the source of the summary and the controlling idea.
5. Indicate whether the author is uncertain of the facts or expressing personal opinions.
6. Avoid making comments about or adding information to text.
7. Make the summary one-fourth or one-third the length of the original. (1984: 145)

All of these instructions are challenging for second/foreign language students; however, #2 is particularly difficult, we have discovered. Many students find it impossible to identify the controlling idea, or thesis, since in some texts this "idea" is implicit, or in the cases of the scientific texts that we will be discussing, it may not be relevant. For students to be able to discover "the relationships among the supporting ideas," they must understand the macrostructure of the text, the organizational scaffolding upon which the text content is constructed. Few published curricula provide useful assistance in solving the problems that #2 poses for students or in figuring out the other summarizing problems that students face in their academic classes.

SOME PREVIOUS RESEARCH

We have been analyzing summaries written by college and university students for the past decade or so (Johns, 1985; Johns & Mayes, 1990). In these efforts, we have attempted to understand the "theoretical formulations of the [text] comprehenders' goals" (Kintsch & van Dijk, 1975: 363) through examining how student summary writers reduce, replicate and distort the original texts. In our studies, the students were given an hour to "summarize in about 100 words" a 500-word passage from their assigned textbooks. Results from our studies (Johns, 1985; Johns & Mayes, 1990) indicated that the student subjects, at both high and low English proficiency levels, did not utilize text organization to assist them in planning and writing their summaries. They appeared to have little understanding of the text macrostructure that would aid them to replicate the organization of the original. The students also seemed to have no pre-conceived plan for integrating text structure and content, for discovering where in the text important ideas are found. Most student summaries concentrated upon information from the first paragraphs of the original text; the others focused almost exclusively upon interesting details. In addition, the students inserted what Kintsch and van Dijk call "distortions" (1975), personal comments about how they liked the reading or what they thought about the topic.

Because our students appeared to make little or no use of original text macrostructures to complete their summaries, they seemed to be unaware of how form and content interact for the purposes of comprehension and replication of text. Instead, students picked up bits and pieces of content to make up the required number of words in their assigned summary, with little or no regard for importance or the structural scaffolding. For these reasons, we turned to Johns and Davies (1983), "Text as a vehicle for information: The classroom use of written text in teaching reading in a foreign language" (1983), in our most recent research project (Paz, 1995a). Their study is an extremely useful illustration of the interaction of form and content, which has been of considerable assistance to us in developing our own pedagogies. In this publication, Tim Johns and Florence Davies discuss their extensive research into the interrelationships between text macrostructure, function, and content in secondary-school science course books. By examining a large number of course

books, these authors were able to identify several repeated text structures, twelve "topic types" in which "categories of information co-occur" (p. 5):

Figure 1

FUNCTION TYPE	INFORMATION STRUCTURE CONSTITUENTS
Physical structure	Part -> location + Property + Function
Process	State or Form of Object/Material - > Location + Time or Stage + Instrument or Agent + Property or Structure + Action
Characteristics	Defining Features or Attributes -> Tests Measures of Data + Exemplar or Group
Mechanism	Physical Structure -> Action + Object/Material
Theory	Hypothesis -> Context + Text of Results + Interpretation
Principle	Law or Principle -> Conditions + Instances + Tests/Measures + Application of Principle
Force	Source or Composition -> Conditions + Instances + Tests + Effects
Instruction	Step or Procedure -> Materials + Apparatus or Measure + Caution or Condition + Result + Interpretation
Social Structure	Member or Group - > Location + Conditions + Role or Responsibility + Assets or Outcomes
State/Situation	Participants -> Conditions + Location (Time & Place) + Effects + Event or Innovation
Adaptation	Species/Exemplar - > Environmental Conditions/Effects + Adaptive Feature/Mechanism + Function
System/Production	Producer or Production System -> Product + Location + Requirement + Distribution

NOTES: Constituents immediately to the LEFT of the arrow are OBLIGATORY and can be regarded as constants. Constituents to the RIGHT of the arrow are optional. They can be regarded as the variables which define the obligatory constituents. Conditions for optionality are assumed, but no predictions are made about what these are. + indicates *"and"* not order. The list given here is not assumed to be either exhaustive or definitive.

From *Toward a classroom based methodology for identifying information structures in text*, J. Davies (1983).

Johns and Davies' text "topic types" relate specifically to the functions that texts serve within scientific cultures. The titles given to these categories refer to such functions as the (description of) **a physical structure**, the (narration of) **a natural process**, the (explanation of) **a scientific principle** and so on. For the purpose of this paper, then, we will rename Johns and Davies' "topic types" as "function types," because, in fact, these categories refer to the purposes that these text categories serve within scientific discourses.

Noting the interrelationship between text macrostructure and function represents the first part of these authors' theory of discourses within scientific course books. The twelve repeated function types in science (Figure 1) provide for practitioners a taxonomy of text elements that is very useful for both research and pedagogy. The second element in Johns and Davies' theory extends to the interrelationships among function, structure, and co-occuring topics. For each function type, the authors have identified certain "information structure constituents" that repeatedly co-appear within that category of text. As can be seen in Figure 1, the text organization of each function type elicits co-occuring "obligatory" and "optional" topic categories which provide the skeleton, or template, for the text macrostructure. The authors argue that within each of these function types *(physical structure, process characteristics, mechanism* and so on*)*, the topic categories may be repeated several times, not necessarily in consecutive order. Optional topics may or may not be included, depending upon a number of factors such as importance to the text, the use of accompanying visual elements, or the readers' needs and backgrounds.

Like Johns and Davies, we must recognize that in science and related fields, the exploitation of non-linear features such as visual representations, charts, and graphs, is fully as important to the reader as the text itself. Thus, when we are considering the analysis of a written text in the sciences, we must also consider the visual representations that accompany it. Johns and Davies argue for the importance of these visual elements, and a number of their suggested ESL/EFL classroom exercises deal with the interaction of written text and visuals. For example, they ask students to label a physical structure diagram with the aid of the text before students are asked to complete other text-bound exercises.

Thus, in the exercises presented in their 1983 article, Johns and Davies tell students first to use this physical structure text to complete the labeling of an illustrations of a tooth:

> A tooth has three regions: the crown is the part projecting above the gum, the neck is embedded in the soft gum and the root is out of sight, anchoring the tooth in its bony socket. Inside the tooth is fairly hard material which contains some living tissues, This is the dentine. The dentine cannot withstand wear, so in the crown and neck it is covered with a substance called cement, which helps to fix the tooth

> in its socket. Inside the dentine, in the centre of the tooth is a hollow pulp cavity containing nerves, a small artery and a small vein. [1]

Students work in groups to complete the labeling of a diagram of the tooth structure, thus enabling them to have a visual representation of a tooth before completing additional reading and summarizing exercise. In the next exercise, the student groups analyze the text macrostructure, the interrelationship of form, of co-occuring topics and of language. Rather than asking them to "summarize" or to "identify the controlling ideas and relationships among supporting ideas," Johns and Davies give students a chart to complete in which co-occurring topics are listed. The chart looks like this:

Figure 2

Part(s)	Location(s)	Properties	Functions

Under each category, students list their findings from the text. When they are finished, they have an organizational scaffolding of the text. In this particular tooth structure text, Johns and Davies' students found about thirty mentions of "parts," the obligatory element in the *physical structure* text. The non-obligatory elements, location, property and function, sometimes co-occur with the obligatory "part" and sometimes they do not. After students complete the diagram of the tooth and the text chart (Figure 2), the original reading is taken from them. They then jointly construct a summary based solely upon the diagram and chart.

This succession of exercises suggested by Johns and Davies provides for students the kind of summarizing support that will help them to approach different types of texts in the sciences. It assists them in understanding the relationships between visual and textual elements and the important interactions of function, structure, and content. It ensures that they will be precise in finding the correct terms and the appropriate co-occuring relationships among the topics in the text. The Johns and Davies' exercises also assist students in text differentiation, in realizing that all texts cannot be read or summarized in the same way because, in fact, they serve different functions and are therefore variously organized.

What students and teachers who use the Johns and Davies model have found is that many of the general principles for text summary, cited in the first part of this paper, do not apply for science course books. Students do not have to read the whole text before they begin to analyze it. (#1 in the list of general instructions.) Instead, students can begin to complete the diagram

and the text analysis chart while they read. This keeps them occupied, interested, and involved in understanding the priorities in the text. For many science texts, there are no "controlling ideas" (#2) as there might be in an argumentative essay. Thus, the concept of controlling idea can be ignored, at least for texts within certain scientific categories. "Examples" (#3) is not an appropriate term for what students record from the text. Instead, they are finding co-occuring topics, those content items that are essential to text understanding. Writing a first sentence "which includes the source of the summary and the controlling idea" (#4) may also be irrelevant here. In the tooth structure text, students can begin with the first "part"; they do not need to write a sentence such as "The tooth has many parts." In fact, such a sentence might sound unscientific. Personal opinions (#5) do not play an explicit role in descriptions of physical structures in course books. Authors of these texts do not say, "I think that the tooth has this type of structure." By the time this information appears in course books, the authors are quite sure about the facts they are presenting (see, e.g., Myers, 1992). Thus, we should teach students to vary summarizing strategies depending upon text function and content.

In short, our previous research has found that students have considerable difficulties with general summary instructions. Like other researchers (Nelson, *et. al,* 1992; Perez, 1990), we discovered that students bring to their summarizing tasks few, if any, strategies for understanding the relationships between function, structure, and content. The work of Johns and Davies (1983), which assists students in analyzing and summarizing texts, particulary in the sciences, helps overcome many of the problems mentioned above.

AN EXAMPLE OF APPLICATIONS OF FUNCTIONAL TYPES

An example from some of our recent work illustrates how *functional types* can inform both teaching and research. In our most recent research in this area, thirteen-year-old secondary school students, all of whom are English/Spanish bilinguals studying in the same English and science classes (discussed in Paz, 1995a) were divided into two groups of 10 ("high" and "low" English proficient), based upon both their standardized test scores and the grades that they had attained in their English classes. The two reading texts[2] chosen for summary were taken from their science course book, Jantzen & Michel's *Life Science* (1986). One reading narrated a natural process, and the other was a description of a *physical structure.* The students were given one hour to read each original course book text and write and revise a summary of between 95 and 105 words. To provide a basis for comparison, we also asked a group of English and science teachers within the students' school to summarize the same course book readings.[3]

We then analyzed the original reading texts from the science course books into Idea Units [IUs] (Kroll, 1977), a taxonomy based primarily upon main clauses. (See Appendix I for the IU taxonomy; See Appendices II

through VII for analyses of physical structure texts.) Then the IUs from each of the texts were separated according to "information structure constituents," or topics, characteristic of the function type represented. Thus, the IUs in the *process* reading were analyzed into "state or form of object/material," "location," "time or state," "instrument or agent," "property of structure" and "action".[4] The IUs from the *physical structure* text were classified according to "structure," "location," "property/attribute," and "function," as shown in Appendix III. As is the case in many course books written for students, the discourse in the chosen readings was not pure; there are other functions being carried out in the same block of discourse for a number of rhetorical reasons.[5] In the physical structure text, for example, the discourse relating to the physical structure function type begins with IU #11. Other, introductory information is included in the first 10 sentences of the reading. (See Appendix II.) Appendix III is dedicated solely to this functional analysis. It shows which of the major constituents for physical structure were represented in each of the IUs from #11-#36 in the text taken from the students' course book.

When the IU functional analysis of the original readings from the course book was completed, two researchers then analyzed each of the student and expert (teacher) summaries, first dividing them into IUs, and then dividing the IUs into the constituent structures or topics as had been done with the original readings. What was discovered, not surprisingly, is that the expert summaries completed by the teachers contained the essential "information structure constituents" for each functional text. The "experts" used the text macrostructure, realized in the information structure constituents, to construct their summaries, ignoring much of the introductory, non-scientific material in the first part of the readings. The teachers mentioned (repeatedly) those co-occurring elements that Johns and Davies argue are essential to the relationship between content and organization in science course book discourses. Appendix IV shows one of the teacher summaries. This expert writer devotes only one sentence to a "controlling idea" that summarizes the first part of the reading. Then she devotes the remainder of the summary to the major constituent elements of the physical structure text. Appendix V shows the analysis of IUs from the expert's summary and the breakdown of these IUs into constituent elements. Appendix VII breaks a poor student's text into IUs, and it shows that the text not only includes fewer of the constituent elements than did the expert text, it also includes inventions and distortions.

As in our previous studies, we found that unlike the teacher/experts, students had few, if any strategies for summarizing texts. This was particularly evident in their summaries of the physical structure texts. (See Appendix VI.) Our statistical test showed that both low- and high-English proficient students' physical structure summaries contained less than 50% of the information structure constituents found in the teacher summaries. Students at both proficiency levels seemed to lack the schemata necessary to identify the

text macrostructure and to produce summaries based upon the predictable information structure constituents as identified by Johns and Davies. Instead, they produced a significant number of IUs from topics and functions that were not found in the Johns and Davies' taxonomy, that were not essential to the gist of the text. In analyzing the expert summary protocols, on the other hand, we found that the vast majority of the IUs replicated from the readings were parallel to the information structure constituents predicted to be characteristic of that function type.

A further discussion of our findings may explain some of the difficulties that the students faced. As was mentioned earlier, the *physical structure* text, which students found to be most difficult, began with information that was written to interest the readers but was not essential to the description of the structure represented. The student summaries for this text often included Idea Units #5, and #6, which read "Cells contain many small parts. Each part seems to help a cell do a certain job." This is an interesting finding because students may believe that it is necessary in all summaries to have a thesis or controlling idea, and the only controlling idea that they could find was contained in these two sentences. In both of the texts, the *physical structure* and *process*, the 13-year-old bilingual students seemed to be attracted to interesting ideas rather than to the core "sciences." They included in their summaries the information that the text writers had written to involve them in the reading. They also tended to include those ordinary, non-scientific words and phrases with which they felt comfortable. A third student characteristic, also found in our earlier studies, is that they tended to replicate IUs from the first part of the reading, ignoring much of the final portions which often included the essential constituents. The students completed their 100-word summary requirement and stopped, ignoring the text structure and other clues for effective text summarizing.

The differences between the expert (teacher) and the student summaries were clear: The teachers disregarded the familiar words and background information that were inserted into the first sections of the reading text to make it attractive to young readers. The students, with few strategies for completing scientific texts, tended to take their IUs from the initial, non-essential material or to draw from what interested them in the reading. The teachers appeared to have a schema for the function type and a strategy for completing their summaries; they concentrated upon the essential elements of the function type, as outlined by Johns and Davies. The students, on the other hand, appeared to do the assignment without schemata for the function type or for what is important in science texts. These findings parallel our earlier studies (Johns, 1985; Johns & Mayes, 1990) of older students and underscore the importance of the interaction of theory and practice and the careful teaching of reading and summarizing.

IMPLICATIONS FOR DISCOURSE ANALYSIS AND PEDAGOGY

How do we improve student summarizing? How do we assist students in understanding text function and the information structure constituents that co-occur in identified function types? These are important questions in the teaching of reading, of summarizing, and of writing and are essential to our students' attainment of academic literacy. We provide here a few suggestions, based upon our research and reading.

First of all, we believe that it is important to teach the interaction of language, text structure, and function in all of our reading and writing classes. In this effort, we can consult the work being done in Australian genre-based pedagogies. In Australia,[7] the teaching of "genres" is directly related to the "jobs" that texts are said to do (Richardson, 1994). For example, Derewianka (1990) encourages children to recognize the genre called "A Recount" as having orientations and a series of events, an approach which provides a structure or a scaffolding upon which they can develop a summary. If students are to think about "recounts" as having orientations and series of events, they are already on their way to doing some effective "tree-trimming" (Rumelhart, 1977) for summarization, since they will look for the orientation and the specific events when organizing their summaries.[8]

However, in our view, the Australian pedagogies outlined in Derewianka and elsewhere might be enhanced by the work of Johns and Davies. Our students at every proficiency level are fairly good at reproducing narratives (and thus, recounts) in summary (Paz, 1995b); however, when texts become more complex, students need additional assistance learning what is important to text structure and content.

The Johns and Davies theories about science course books can assist us in curriculum development and teaching at a number of levels. First, they can help us to select and analyze texts for student reading and summarization as found in the appendices of this paper. Completing our own analyses enables us to understand more fully the relationships between text function, content, and macrostructure and to select appropriate texts for summarizing. With the text function-type list, we can recognize blocks of discourse, in course books and elsewhere, that serve an identified purpose. Once we have decided upon a function type, such as *instruction* or *description of a physical structure*, we can give students repeated reading and discussion practice to assist them in transferring their strategies for reading one text to other texts of the same function type.

Johns and Davies suggest that we begin our lessons by dividing the students into groups, providing each group with the same text from a function type, with a diagram or illustration to complete, and with a chart listing the information structure constituents of that function. We have found that students at all levels become very involved in completing the diagrams. They are often much better at relating words to visual elements than they are at paraphrasing or summarizing. When our students are given the constituent

chart [See Figure 2], they begin arguing about the words or phrases that fit into the information structure "slots" (e.g., Part, Location, Property, Function for a *Physical Structure* Text) and using the grammar of the passage to make their arguments. They find, for example, that the "parts" in a *physical structure* text are nouns and are generally preceded by definite or indefinite articles. Location topics are often found in prepositional phrases, and properties are often found in adjectives. Thus, as the students work on their analyses, they also become increasingly comfortable with the syntax and morphology of the sentences they are reading. When the analyses are completed, one group puts its findings from their completed chart on the board and the class negotiates any differences between each group's charts. We have been using these group activities in our classes since we first discovered Johns and Davies' approach,[9] and we have found them to be excellent, for directed reading, for summarizing—and for writing.

As we noted earlier, when we ask students to summarize, we take the original text from them, and they use their diagrams and constituent charts to create their summaries, an exercise that requires them to restore and paraphrase in complete, grammatical sentences. Because the text they recreate is often too long for a summary of the original, they are asked to "tree trim," to make decisions about what particular co-occurring groups of "slots" are most important for the gist of the text. Sometimes they choose not to trim the text substantially (as is often the case when we use "tooth structure"), but there are other times when such trimming is both possible and useful.

Although Johns and Davis' work has been tremendously useful in our research and our approaches to teaching text summarizing, we are indebted to others, as well. David Rumelhart (1977, 1980), Patricia Carrell (1983) and others who work in artificial intelligence and reading argue that we store in our schemata, or prior knowledge, particular text macrostructures which we "instantiate" when we confront a new text which appears to be organized in the same way. Carrell has been particularly influential in arguing that we must prepare students for both the content and the form in text readings. Another important influence upon our work has been Michael Hoey (1981, 1986) and his work on *problem/solution* (PS) texts. Like Johns and Davies, Hoey argues that these texts have certain co-occurring content slots, or "constituent structures," particular topics that readers expect to be discussed in a problem solution discourse. These co-occurring elements are "the problem" itself, "the causes" for the problem, suggested "solutions" and an "evaluation" of the various solution possibilities. All constituents but the final one, "evaluation," appear to be obligatory but, like the Johns and Davies' constituents, they do not necessarily appear in a particular order. The advantage of the Hoey text theory is that problem/solution can be applied across content areas or disciplines, within academic contexts and elsewhere.

One of the authors of this chapter, Ann Johns, has been using the Hoey

functional taxonomy for many years: to analyze texts for their structure, to teach summarizing (1988), and to assist students in revising their own problem-solution texts to meet reader expectations (1986). In preparing to summarize, students are asked to read a problem-solution text and to copy, or paraphrase, each of the "slots" that Hoey identifies. What they discover, of course, is that the particular topics that the slots represent do not necessarily come in order. The "problem" can be mentioned at the end, for example, and the causes at the beginning (Johns, 1988). They also discover that one topic may be mentioned more than once; for example, several problems can be identified that stem from one cause (e.g. *cause* = water pollution; *problems:* deaths of fish and fowl; lack of potable water for humans; uninhabitable living areas for fauna and humans). However, if they organize their text analysis by "slots," students will be able to trim the original text successfully and write a summary. By the same token, if students diagram the problem-solution texts they plan to write using the Hoey schema, they will be more successful in keeping track of text organization and content.

CONCLUSIONS

In our studies carried out over the past ten years, we have consistently found that students have little knowledge of text functions or macrostructures to guide them in text reading or summary, and that they have few, if any, strategies for summarizing texts. We have found the Johns and Davies'(1983) work to be the best guide for analysis and assignment of science readings, and we advocate the teaching of this taxonomy of function types to science students. We have also found the more general function type, problem-solution, discussed by Hoey (1986), to be useful in many contexts, both for reading and for writing. Both analyses show explicitly the relationships among form, content, and function within texts.

We are surprised that although the theories and approaches discussed here appeared in the 1980s, they have not made significant inroads into curricula or course books in ESL/EFL classes. Students are still being given too many narratives to read and summarize, and when they are asked to write a summary of other function types, they are not adequately instructed. As we noted, the typical instructions that appear at the beginning of this chapter are inappropriate for reading and summarization in many contexts.

We hope that this discussion of summarizing, drawing from the work of Johns and Davies, and Hoey, will lead to a broader use of theoretically-grounded research and pedagogical approaches.

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Notes:

1. Taken from Evington, E.J. & O.F. Moore. (1971) *Human Biology and Hygiene.* London: Routledge and Kegan Paul.
2. 301 and 307 words, respectively
3. We had used the same methodology in our earlier work (Johns, 1986; Johns & Mayes, 1990).
4. The process text included IUs not related to the function type such as definitions and partial descriptions of other processes. These were not analyzed for the study.
5. One reason is to interest students in the material. Often textbooks begin with stories that will entice students rather than with the "hard" scientific information.
6. Fisher's Exact Two-tailed Test
7. Specifically in New South Wales.
8. Rumelhart argues that summarizing is a "tree-trimming" process in which the non-essential elements are cut off.
9. For Ann Johns, this was in China in 1981, when Tim Johns and Florence Davies presented this paper to her teacher trainees.

APPENDIX I
KROLL'S IDEA UNITS

1. A main clause is counted as one idea unit including (when present) a direct object, an adverbial element and a mark of subordination.
2. Full relative and adverbial clauses are counted as one idea unit.
3. Phrases which occur in sentence initial position followed by a comma or phrases which are set off from the sentence with commas are counted as separate idea units.
4. Reduced clauses in which a subordinator is followed by a non-finite verb are one idea unit.
5. Post-nominal-ing phrases used as modifiers are counted as one idea unit.
6. Other types of elements counted as individual idea units are :
   a. Absolutes: e.g., microscopes having improved, it became easier to look inside a cell.
   b. Appositives: A saclike lining, called the cell membrane, surrounds the cell. Adapted from Kroll (1977: 90)

APPENDIX II
IDEA UNITS OF PHYSICAL STRUCTURE TEXT

Animal Cells

(1 - Early microscopes showed the outer edge of a cell clearly.) (2 - As microscopes improved) (3 - it became easier to look inside a cell.) (4 - Microscopes today show) (5 - that cells contain many small parts.) (6 - Each part seems to help a cell do a certain job.) (7 - You have seen) (8 - that animal cells and plant cells seem very different.) (9 - Yet most cells of animals and plants have many similar parts.)

Look carefully at Figure 2-4. (10 - It shows some of the parts that are found in

the cells of animals.) (11 - A saclike lining) (12 - called the cell membrane) (13 - surrounds the cell.) (14 - The cell membrane holds the insides of a cell together.) (15 - Certain substances enter and leave a cell) (16 - by passing through the cell membrane.) (17 - The cell membrane controls the in-and-out flow of these substances.)

Look (18 - inside the cell membrane) in Figure 2-4. (19 - Most of the cell is filled with a jellylike fluid called cytoplasm.) (20 - Scattered through the cytoplasm are many parts of different sizes and shapes.)

(21 - Most likely the part you will notice first is the large, round nucleus.) (22 - The nucleus (pl. nuclei) is the control center for the cell's activities.) (23 - It directs everything the cell does.) (24 - Structures inside the nucleus called chromosomes) (25 - store the directions for all cell activities.)

(26 - The nucleus is surrounded by its own membrane.) (27 - This membrane separates the nucleus from the cytoplasm.) (28 - It seems to control the flow of substances in and out of the nucleus.)

(29 - Outside the nucleus, there is a capsule-shaped body, a mitochondrion.) (30 - A mitochondrion helps to supply energy for the cell.) (31 - Mitochondria release energy from substances that enter the cell.)

(32 - Look outside the nucleus) (33 - for winding channels called the endoplasmic reticulum.) (34 - Some scientists believe) (35 - these channels help transport materials throughout a cell.) (36 - Some channels are dotted with tiny cell parts called ribosomes.) (37 - Ribosomes produce substances needed for growth and other activities.)

NOTE : The number preceding text represents the idea unit number assigned to that text.

APPENDIX III
MATRIX FOR PHYSICAL STRUCTURE TEXT

Part	Location	Property/Attribute	Function
(11) A saclike lining- (12) cell membrane-* (11) the cell-*	(11) saclike-* (12) called the cell membrane-		
(14) the cell membrane	(11) surrounds the cell-		(14) holds the insides of a cell together-
(15) Certain substances- (16) cell membrane-*			(15) enter and leave the cell-
(17) The cell membrane (17) these substances-*	(16) through the cell membrane*		(16) by passing through the cell membrane- (17) controls the in-and-out flow of these substances

Part	Location	Property/Attribute	Function
(19) Most of the cell	(19) most of the cell is filled	(19) is filled with a jellylike fluid called cytoplasm-	
(19) cytoplasm*		(19) jellylike fluid*	
(20) many parts	(20) Scattered through cytoplasm are	(20) of many different sizes and shapes.	
(21) nucleus		(21) ...a large, round	
(22) The nucleus			(22) is the center for the cell's activities-
(23) It			(23) directs everything the cell does-
(24) Structures	(24) inside the nucleus	(24) called chromosomes-	
(24) chromosomes*			
(26) The nucleus	(26) nucleus is surrounded by*	(26) is surrounded by its own membrane-	
(27) This membrane			(27) separates the nucleus from the cytoplasm-
(27) the nucleus*			
(27) the cytoplasm*			
(28) It			
(28) the nucleus-*	(28) in and out of the nucleus-*		(28) seems to control the flow of substances in and out of the nucleus*
(29) a capsule-shaped body, a mitochondrion-	(29) Outside the nucleus there is	(29) capsule-shaped-*	
(30) A mitochondrion			
(30) the cell-*			(30) helps to supply energy for the cell-
(31) Mitochondria			(31) release energy from substances that enter the cell-
(31) substances-*		(31) that enter the cell-*	
(31) the cell-*			
(32) the nucleus-*	(32) (Look) outside the nucleus	(33) winding-*	
(33) (for) winding channels		(33) called the endoplasmic reticulum-	
(35) these channels			(35) help transport materials throughout a cell-
(35) materials-*	(35) throughout a cell-*		
(35) a cell-*			
(36) Some channels		(36) are dotted with tiny cell parts called ribosomes	
(36) parts-*		(36) tiny-*	
(36) ribosomes-*			
(37) Ribosomes		(37) needed for growth and other activities*	(37) produce substances needed for growth and other activities*
(37) substances-*			

NOTES:

1 -indicates end of surface structure string.

2 *marks items which occur in more than one slot.

3 Idea units 1-10, 17 and 33 were not included in the matrix because they did not fit any of the major constituents slots.

4 Numbers in the parenthesis preceding text, represent the idea unit number assigned to the text. (See Appendix III).

APPENDIX IV
EXPERT SUMMARY: "Animal Cells"

Cells of animals and plants are similar in many ways. Cells have linings called membranes, which control substances entering and leaving the cell. Cells are filled with a jellylike fluid called cytoplasm. The nucleus, with its own membrane to separate it from the cytoplasm, is a large round control center for the cell. Inside the nucleus are chromosomes, which contain directions for all the activities of the cell.

Outside the nucleus are the mitochondria, capsule-shaped energy suppliers for the cell. Endoplasmic reticulum are channels that aid transportation materials within the cell. Some contain tiny ribosomes that produce substances needed for activities, including growth. (105 words).

APPENDIX V
IDEA UNIT

I.U.#9 - Cells of animals are similar in two ways.

I.U.#12 - Cells have linings called membranes,

I.U.#17 - which control substances entering and leaving the cell.

I.U.#19 - Cells are filled with a jellylike fluid called cytoplasm.

I.U.#26 - The nucleus, with its own membrane

I.U.#27 - to separate it from the cytoplasm,

I.U.#21 - is a large round

I.U.#22 - control center for the cell.

I.U.#24 - Inside the nucleus are chromosomes,

I.U.#25 - which contain directions for all the activities of the cell.

I.U.#29 - Outside the nucleus are the mitochondria, capsule-shaped

I.U.#30 - energy suppliers for the cell.

I.U.#33 - Endoplasmic reticulum are channels

I.U.#35 - that aid transportation of materials within the cell.

I.U.#36 - Some contain tiny ribosomes

I.U.#37 - that produce substances needed for activities, including growth...

Parts	Location	Property	Function
(12) Cells (12) membranes*		(12) have linings called membranes-	
			(17) which control substances entering the cell-
(17) substances		(17) entering and leaving the cell-*	
(17) the cell-*			
(19) Cells (19) cytoplasm*		(19) are filled with jellylike fluid called cytoplasm*	
(26) The nucleus		(26) with its own membrane	
(27) cytoplasm		(21) is a large round	(27) to separate it from the cytoplasm
(22) control center*			22) control center for the cell
(22) the cell*	(24) Inside the nucleus are		
(24) the nucleus*			(25) which contain directions for all the activities of the cell
(24) chromosomes	(29) Outside the nucleus are		
(29) the nucleus*			(25) which contain
(29) mitochondria		(29) capsule-shaped	(30) energy suppliers for the cell-
(30) the cell*			
(33) Endoplasmic reticulum		(33) are channels	
(35) materials*	(35) within the cell-*		(35) that aid transportation of materials within the cell-
(36) some			(36) contain tiny ribosomes
(36) ribosomes*		(36) tiny*	(37) that produce substances for activities, including growth-
(37) substances*			

APPENDIX VI
LOW PROFICIENCY STUDENT TEXT

A cell is a little thin that helps the body to move it can see from a microscope. A cell have many parts it helps the cell work. The cell of an animal have a cell membrane that surrounds the cell. The membrane cell holds the inside of the cell....Some cells are filled with jellylike is a fluid called cytoplasm. Cytoplasm are different sizes and shaped. Nucleus is a large part of a cell it have a black round thin. The nucleus in the control center control the cell. The nucleus is surrounded by his own membrane.

APPENDIX VII
IDEA UNITS OF LOW PROFICIENCY STUDENT

INVENTION	-	A cell is a little thin that helps the body to move
I.U.#1	-	it can see from a microscope.
I.U.#5	-	A cell have many parts
I.U.#6	-	it helps the cell work.
I.U.#7	-	The cell of an animal have
I.U.#12	-	a cell membrane
I.U.#13	-	that surrounds the cell
I.U.#14	-	The membrane cell holds the inside of the cell.
I.U.#19	-	Some cells are filled with jellylike is a fluid called cytoplasm.
DISTORTION (D1)	-	Cytoplasm are different sizes and shapes.
I.U.#21	-	Nucleus is a large part of a cell.
DISTORTION (D2)	-	it have black round thin.
I.U.#22	-	The nucleus in the control center the control the cell.
I.U.#26	-	The nucleus is surrounded by his own membrane.

PART	LOCATION	STRUCTURE	FUNCTION
(12) a cell membrane (11) the cell (14) The membrane cell (19) Some cell (19) fluid* (19) cytoplasm* (D1) Cytoplasm (21) Nucleus (21) a cell* (D2) it	(13) that surrounds the cell-	(19) are filled with jellylike is a fluid called cytoplasm (D1) are different sizes and shapes- (21) is a large part of a cell- (D2) have a black round thin-	(14) holds the inside of the cell-
(22) The nucleus (26) The nucleus (26) membrane-*	(22) in the control center	(26) is surrounded by his own membrane-	(22) the control the cell-

(The invention [I] and idea units 1, 5, 6, and 7 were not included in the matrix since they do not fit one of the above major constituent function slots).

4

Rhetorical Models of Understanding

Claire Kramsch

Making sense of written texts is embedded in the myriad of activities, other texts, and experiences which readers bring to the the task. Meaning is a rhetorical and not just a cognitive task. Meaning is a rhetorical approach to text interpretation, focussing on macro- and micro-level analysis. Student summaries of a work of fiction are examined and compared, and implications for a pedagogy of interpretive practice in the teaching of English as a Second Language are described.

INTRODUCTION

There was a time when teachers and learners believed that the meaning of texts was in the texts themselves, to be decoded together with the lexical and grammatical structures on the page. Thanks to reader-response and reception theories, and to psycholinguistic theories of reading, this myth has long since been replaced by the idea that meaning is constructed by the interaction of the reader and the text. Based on the signs on the page, readers construct a mental model or knowledge representation of the text, also called schema, that they then try to match with the ongoing text. Schemata are adjusted, revised, or rejected and replaced, as further reading confirms or invalidates readers' hypotheses (for a review of schema theory, see Cook, 1994).

It is often believed, however, that these schemata, or cognitive structures, emerge directly in the mind from reading the written text and that they are in turn simply put into words, when the teacher, for example, asks learners to display their comprehension of the text. This neo-platonic fallacy has been dispelled by researchers in such fields as ethnomethodology, discourse analysis and stylistics, who explore the constitution and interpretation of socially situated knowledge. They show that mental models of

reality are not only the result of social interaction, but that they are rhetorically constructed as well. In the classroom, making sense of written texts is embedded in a flow of discursive activities, both oral and written, that construct and shape students' mental representations of these texts. The model of reality that emerges from these interactions is inseparable from the rhetorical procedures that accompany it. As the philosopher Paul Ricoeur writes:

> Understanding has nothing to do with an **immediate** grasping of a foreign psychic life or with an **emotional** identification with a mental intention. Understanding is entirely **mediated by** the whole of explanatory procedures which precede it and accompany it. (Ricoeur, 1981:164)

This paper deals specifically with the mediation of learners' emergent models of understanding through spoken and written language. The way teacher and students talk to one another about the text, and about each others' interpretations of the text, what each one chooses to say and to leave unsaid, are among the many interpretive procedures that help co-construct learners' representations of the world disclosed by the text. Even in the individual silent reading outside the classroom, the readers' ability to imagine the worlds evoked by the text is mediated by their interactions with prior texts, prior conversations on texts, and by the schooled and unschooled ways in which they have learned to take knowledge from written texts and to make sense of that knowledge.

In order to make these processes of mediation visible, I will briefly propose seven principles of a rhetorical approach to text interpretation based on work done in discourse analysis (Brown and Yule, 1983; Kress, 1988; Fairclough, 1989; Hatch, 1992); and the general field of stylistics (Widdowson, 1984; Fowler, 1986; Carter and Simpson, 1989; Kramsch, 1993; Simpson, 1993; Short, 1994). I will illustrate these principles on a concrete example taken from two ESL writing classes in California and will then reflect on the implications for a pedagogy of interpretive practice in the teaching of English as a Second Language.

PRINCIPLES OF A RHETORICAL APPROACH TO TEXT INTERPRETATION

Seeing the construction of meaning as a rhetorical and not just as a cognitive process requires some clarification that discourse analysis can provide. It can be summarized under the following seven postulates:

1. The language of a "text"–be it spoken, visual or written–both **refers** to a reality beyond the text and **represents** a certain relationship of the text to its context, e.g., how the text positions itself vis-a-vis its readers, vis-a-vis established genres, what it considers important to say and not to say. (Widdowson, 1984:150).

2. The meaning of texts is inseparable from surrounding texts, be they illustrations, footnotes, conversations or teacher or student talk. The resonances that texts have to one another, both those that are close and those that are distant in time and space, have generated what the French philosopher Kristeva calls "intertextuality." We are often not aware of the extent to which our discourse is filled with the words and voices of others and how texts echo other texts.

3. Texts attempt to position their readers in quite specific ways by evoking worlds, mental representations, or schemata that they assume are shared between them and their readers (Kress, 1988:107). They do this through a range of textual and discursive devices that have been analyzed by discourse analysts such as Halliday and Hasan (1985), Fowler (1986), Fairclough (1989), Simpson (1993), Short (1994), and others.

4. Schemata are relational. They are created by relating one text, one event, one fact to another through such semiotic links as contiguity, similarity or metaphor, and through such logical links as causality, concession, comparison, and contrast.

5. Schemata are culturally sensitive. Because they are, by nature, highly selective, they reflect the ways of thinking and judging of the discourse communities to which readers and writers belong (Steffensen, 1986).

6. Schemata are co-constructed. We know from Soviet psychology and from child language studies that mental models are interactionally constructed in dialogue with others. The concept of co-construction, which refers to the way social interaction creates reality through language, draws on a number of disciplinary perspectives, including applied linguistics, conversational analysis and linguistic anthropology (Jacoby and Ochs, forthcoming). The identities and subjective states of learners in a classroom are jointly constructed through the talk that surrounds the interpretation of texts.

7. Schemata are rhetorical constructions. The rhetorical procedures used by teachers and learners to make meaning out of texts help constitute the meaning of these texts. They represent the choices made by speakers and writers from among the many potential meanings that could be actualized through language, both on the macrolevel of text structure, and on the microlevel of the word and the clause.

The following section shows how these postulates can inform our understanding of what goes on in classrooms when teacher and students try to make sense of texts.

MENTAL MODELS OF "CRICKETS" BY ROBERT O. BUTLER

The text

Twenty-six students in two intermediate-level ESL writing classes at

UC Berkeley read the short story "Crickets" by Robert O. Butler (1992). The narrator is a Vietnamese man, called Thieu in Vietnam and Ted in the US, who came to Louisiana 10 years ago with his newly married wife. They have a son whom they gave the American name Bill. Seeing that his son is often bored, Ted tries to interest him in a game he used to play with his friends when he was a boy in Vietnam. They would search for crickets, the big and slow charcoal crickets and the small and smart fire crickets, and they would have them fight each other in teams. At first the son is interested and father and son go searching for crickets. Unfortunately they can find only one kind, the charcoal crickets. The father thinks his son shares in his disappointment only to realize the boy is only furious at having stained his brand-new Reeboks. The story ends with the father calling after his son, "See you later, Bill."

The assignment

The 13 students in each class came from a variety of East-Asian and Latin-American countries. In class A, all but one were foreign born, most having emigrated to the U.S. 3 to 5 years ago. In class B, by contrast, all but three were American-born from parents who had themselves emigrated to the U.S., mostly from Asian or Latin-American countries.

The students were asked to summarize the story in their own words in 4-5 sentences. Six or seven students rewrote their summaries on the blackboard for general comparison and discussion. Student narrators in turn read their summaries aloud, explaining any changes they might have made in the second writing, and each was to say what they thought were common and divergent features between their own and others' summaries. The purpose was to jointly construct a meaning for the story, based on the individual versions of the original, and to make sense of the conscious or unconscious "choices" made by the students.

The analysis

An analysis of the students' summaries was guided by the textual features of narratives identified by Fowler (1986), Simpson (1993), and Short (1994) on the macro- and the microlevels of analysis.

Macrolevel	Microlevel
1. Genre	7. Point of departure
2. Theme	8. Sequencing: tenses
3. General organization	9. Spatiotemporal markers
4. Text time vs. story time	10. Syntactic choices
5. Evaluation vs. description	11. Lexical choices
6. Silences	12. Cohesive devices

These features in themselves do not explain student comprehension of the story, but because they represent choices which writers have to make, they can be meaningful for readers, especially when compared with those made by other writers along these same dimensions. The following discusses what some of these choices were and how they were discussed in class.

MACROLEVEL

Genre

We can begin by considering the following three summaries:

> 1. This is a story about the transitional phase that a typical immigrant goes through. It talks about how a Vietnamese man adapts to the new environment; his observations and comments. It deals with the gap in his relation with his son; how his son has grown to have very different interests. (Jeong Mi, born in Korea, 9 years in U.S.)
>
> 2. When Ted first immigrated to the States, his American name, Ted, was the only disturbation of his life. As time moves on, he found Louisiana is very much like Vietnamn. However because of the incident he shared with his America-born son, he realized the difference between United States & Vietnamn. He said there are only "charcoal crikets" here in the States. (Sung, born in Korea, 3 years in U.S.)
>
> 3. Ted, Vietnese, had a son name Bill with his wife when he fled to the states. Bill, growing up in Louisiana, adapted to the American culture. Ted, fearful that his son would lose touch with their original culture, wanted to show what their culture was like. Therefore, Ted attempted to show his son a game that he used to play with crickets. However, Bill showed no interest and Ted realized that like the land, the two cultures are different and require a different lifestyle. (Jose, U.S.-born of Latin-American parents)

These three students seem to be operating according to three different conceptions of what a "summary" is. For Jeong Mi a summary should render the main idea. She says, "Names are of no interest. The main thing is the larger issue. I tried to capture the essential of what the story means." For Sung, a summary should recapitulate the main facts and events in the order in which they occur in the story; a summary should not contain any explicit opinion or interpretation. Sung put the word "charcoal crickets" in quotation marks, because, he said, "They are only a symbol for the things and the people that you find in the United States," but he avoided saying that explicitly in his summary. Jose's summary is both factual and interpretive, and he keeps to the original order of events. Although each has its own idiosyncratic twist, all three narrations seem to follow a text type the students have learned in school. However, the schooled genre "summary" does have different rules in different educational cultures (Kramsch, forthcoming). These summaries show evidence of these differences.

Theme

Even though students have read the same original text, their summaries pick up on different potential themes enclosed in the text. Compare the following two summaries:

> 4. This story is about an immigrant from Vietnam. He struggled in his native country and now he struggles in the U.S. However these struggles are very much different. In Vietnam he struggled for his life, for his freedom. Now in the U.S. he struggles to try to find a balance between cultural values. Perhaps his resentment to the VN gov't causes him to stop practicing his culture (VN) and hesitate to pass it along to his children. He's confused and continues to struggle (Tuyen, U.S.-born of Vietnamese parents).

> 5. The short story, Cricket, by Robert Butler examines the clash of cultures experienced by immigrants. The main character, whom is Vietnamese, feels out of place in America. His son, Bill, has adopted a completely American ideology and has lost touch with his Vietnamese culture. In the story the father tries to introduce his son to an old pastime; however, the son's American attitudes take over and he ends up caring more about his shoes then the culture. (Laurent, US-born of French parents).

Summary 4 clearly focusses on the notion of **personal struggle**, experienced by the father in Vietnam and in the U.S., a theme illustrated in the story by the metaphor of the fighting crickets. Summary 5, by contrast, picks up on the theme of **ideological clash** between American attitudes and Vietnamese culture, a theme illustrated in the story by the metaphor of the spoiled Reeboks and the Vietnamese crickets.

General organization

The students had to choose how they were going to organize the information contained in the original text. They would first state the theme as in summaries 1 and 5 or state it in the conclusion as in summary 3. From the 4-5 sentences allotted, the middle sentence often seemed to play a central role for the meaning of their summary. In summary 4, for example, the sentence "He struggles to find a balance between cultural values," not only expresses the central theme of the summary, but is also placed in a central position in the text.

Text time vs. story time

To appreciate how the students reworked the meaning of the original text in their summaries, one has to look at the amount of text the narrator devotes to which part of the story. In the original story, for example, roughly 1/6 is devoted to Ted's life in Vietnam, his fight against the North Vietnamese and his emigration to the US. And yet only one of the 26 summaries (summary 4 by Tuyen, of Vietnamese parents) makes any mention of Ted's life prior to immigration. There may be several reasons for this, of course, including the constraints of the assignment. Nevertheless, this one summary can be used

to discuss various impressions each version makes and consider reasons for the location of the majority of summaries exclusively in America.

Evaluation vs. description/narration

A narrative summary, as we have seen, cannot but contain some authorial evaluation, even when it contains no explicit interpretation. This evaluation can be expressed either indirectly from within the story as in summary 4 ("he's **confused**") or in 12 (below): "after leading a **tough** childhood....Bill was very **proud** of his American identity." Alternatively, evaluation can be expressed directly from outside the story as in the following two summaries:

> 6...It turned out that the two never played the game because there was only one kind of crickets, the big, slow, charcoal crickets **which symbolize the American people.** The smaller, but smarter "fire" cricket, were nowhere to be found **which symbolized a detachment from Ted's country and people.** (Tim, born in Australia of American parents, 16 years in U.S.)

> 7...it was hard for Bill to attain the values and attitude from his father's culture. **I was glad that Ted realized it, because I've seen a lot of foreigner parents who don't.** (Naveed, U.S.-born of Pakistani parents)

The relative distribution of evaluative vs. descriptive-durative propositions in summaries (Polanyi, 1989) can signify the stance the narrator takes vis-a-vis the story. It may also simply indicate a desire to complete the assignment, indicate a reluctance to "take sides," or as in 7, it may reflect personal experiences that affect a student's reading of the story.

Silences

Given the constraints of the assignment, the students had to exercise a great deal of judgment as to what to say and leave out. We have already seen how most of the summaries did not include Ted's life before he came to the US. It may also be significant that none of the summaries mention the future possibilities alluded to in the last sentence of the story, "See you later, Bill." This statement, in its double meaning of "good-bye" and "you might come back to your Vietnamese roots later," finishes the story on an open-ended note that none of the students reported.

Students in class A, who were almost all new immigrants themselves, felt the story fizzled off, that the author should have made a much stronger case for the trauma of immigration. In fact, they said, "You cannot understand this story if you are not an immigrant yourself." This statement was violently contested by U.S.-born Jose, "Wait a minute, I was born in this country and I understand this story perfectly well!" Students in class B, who were almost all U.S.-born of foreign parents, understood the statement as meaning that Ted was at last acting as an American by saying good-bye "the American way"–a sentiment that was reflected in many of their summaries (see e.g., summary 7).

In both cases the silence of the summaries regarding the possibilities for the future might be indicative of the present situation of these foreign- and U.S.-born students currently studying at UC Berkeley (see Appendix).

MICROLEVEL

Point of departure

The first sentence in such short summaries can be of paramount importance to set the scene and establish a shared universe of discourse with the reader. Compare, for example:

8. Ted, who has a strong Vietnam background and history, has a child, Bill, born in the U.S.

9. Mr. Thieu was an immigrant who escaped from Vietnam.

10. Ted is a Vietnamese refugee from the Vietnam war, who had immigrated to Louisiana.

Each of these beginnings prepares the reader for a different perspective on the story, in particular through the use of names and the choice of verbs (see below).

Sequencing: Use of tenses

Besides the general organization of the information, students have to choose the sequence they are going to give the events. As we have seen, this decision is linked to issues of genre. First, students have to decide on the tense. Some of the summaries are written exclusively in the present tense, giving the summary a descriptive-static flavor, e.g.:

11. This story tells us that once a person has been in a place for too long she gets used to the customs and forgets about the old customs from her motherland. In this case ted's son bill can not even distinguish himself as a Vietnamese because he is totally Americanized. There are only one kind of crickets in Louisiana although the weather condition and rice paddies look pretty much the same but things are different. (Pamela, born in Taiwan 4 1/2 years in U.S.)

Most summaries are, however, written in the past tense. But some make use of flashbacks, with a gerund as in 12 or a pluperfect and a dependent clause as in 13, either because some events are deemed less important, or because the narrator wants to anchor the perspective of the reader in the main event. The following example describes the move to the United States:

12. A man neme Ted (Thieu) moved to United States as a chemical Engineer **after leading a tough childhood in Vietname.** (Ming born in China, 3 years in U.S.)

13. Ted is a Vietnamese refugee from the Vietnam war, **who had immigrated to Louisiana** (Allan, born in Taiwan, 3 years in U.S.)

Deixis

In addition to the use of tenses, one may want to look at how a summary anchors the reader in the perspective of its narrator through markers of time, place, and personal stance, called "deictics." This is done first through the presence or absence of temporal or spatial markers. A summary can attempt to render a universally valid story of immigration, in which case one will find no particular temporal or spatial sequencing. An example would be summary 1, where the sequencing is purely argumentative. This style of summary is generally accompanied by a number of nominalizations. For example, in 1, nominal phrases like *transitional phase, observations and comment, gap in his relation* serve to make the text abstract, i.e., typical and therefore generalizable to other immigration situations.

A summary can also describe the specific events in their chronological order, as do summaries 2, 3 and 7. In such summaries, the temporal markers (e.g., *one day, as time moves on, in the end, finally*) and spatial markers (e.g., *the States, America, Louisiana*) punctuate the telling, establishing the same sequence of events as the original story.

Deictic devices can also indicate the personal stance or point of view of the narrator. For example, the phrases *In Vietnam he struggled.... Now in the U.S. he struggles...* situate the narrator in the American here-and-now. Similarly, calling Ted an *immigrant* (rather than an *emigrant*) who comes or *immigrates* (rather than *goes* or *flees* or *emigrates*) to America, are all indications of a deictic perspective of a narrator living in the United States. (Note that the perspective in the original text shifts from Vietnam to the United States when Thieu and his wife decide to leave Saigon.)

Syntactic choices

The meanings developed through the use of tenses and deictics are reinforced on the level of the syntax. In summary 3, for example, the use of conjunctions *therefore, however*, and of appositional phrases to express causality gives this text a tightly argued flavor of cause-and-effect relationships and of inevitable logic. The summary first takes the Vietnamese perspective (*he fled to the states*) then the American one (*their original culture*). Contrast it with the beginning of summary 13 below, where the logical link between sentences is mostly left up to the reader.

Lexical choices

Meanings are also apparent in the choice of vocabulary, most interestingly in this case in the naming of the character. Note in the opening sentences 8, 9, and 12 the name given to the main character: Ted, Thieu, Ted (Thieu), Mr. Thieu. Naming practices can signify the narrator's perspective

on the story. Also relevant can be the choice of verb used to depict the main character's coming to America. There is a difference whether he is said to have a *strong Vietnam background*, or to have escaped or fled from Vietnam, to be a refugee from Vietnam, or whether he is said to have *moved* or *immigrated* to the United States. Again, the question is not what the student **intended** to mean by choosing any of these terms, but what effect these terms now have on the reader as compared to other choices that could have been made.

For example, the class was asked what significance might be attributed to Allan's opening sentence:

> 13. Ted is a Vietnamese refugee from the Vietnam war, who had immigrated to Louisiana. He is the most intelligent of his whole company. He has a son called Bill. Ted tried to share his childhood experience with Bill... (Allan born in Taiwan, 3 years in U.S.)

The following dialogue ensued:

> Suman (from Korea): *It shows that he didn't come here for economic reasons and that he was a highly qualified immigrant.*
> Freddy (from Guatemala): *He is a fighter.*
> Ming (referring to his summary 12): *He is not just any immigrant with a menial job; he is a successful chemical engineer!*
> Freddy: *Yeah, but it's more significant that he is intelligent than what job he has!*
> Ss: (in violent disagreement with one another)

Cohesive devices

Even such short texts as summaries are held together through rhetorical devices like repetitions and parallelisms (e.g., repetition of the word *struggle* in 4), conjunctions (e.g., *however* in 3), pronouns, and adverbs that establish textual cohesion and thus make the meaning clearer. The sudden lack of cohesive tie from one sentence to the next can have a dramatic effect, such as in the following:

> 14. ...However he realized that the game is not just boring for the son but also that he lost a lot more than just his Vietnamese name. His cultural identity. (Barbara, born in Taiwan, 5 years in U.S.).

TOWARD A PEDAGOGY OF INTERPRETIVE PRACTICE

The processes observed here can form the basis for a pedagogy of interpretive practice that engages teacher and students in the rhetorical co-construction of meaning. The authorial dynamics triggered by the process of re-casting a common text into multiple summaries have the advantage of making

students personally interested in the relationship of words to meaning because they produced these words themselves. At the same time, it serves to shed multiple perspectives on the original text. In this process, it becomes clear that authorial intention is not the primary source of meaning, and that what is at stake is not whether students' summaries are good or bad, but how rich an interpretation the readers are able to construct. The following gives a flavor of this joint rhetorical construction of understanding.

> Jeff (born in Burma, 2 years in U.S.) reads his summary on the board:
> *Mr. Thieu was an immigrant who escaped from Vietnam. He and his wife and American-born child, Bill lived in La., where Mr. Thieu was called Ted as he worked in a refinery. When Ted saw that his son was bored, he tried to introduce the idea of fighting crickets but as he and his son searched for crickets, they only found one type which made the whole game uninteresting and Ted was sorry that he had introduced the idea to his son.*
> Teacher: *How does your summary compare to the others?*
> Jeff: *Mine doesn't include attitudes...mine is pretty shallow...I think...You asked us to summarize, so I just summarized, I really didn't think about it.*
> Teacher: *anyone else wants to comment on Jeff's summary?*
> Edmond (reading Jeff's summary): *He ends with Ted being, "sorry that he had introduced the idea to his son" even though he wanted it...I see there the idea of pain. I was just wondering...Although he claimed he didn't intend to put any attitudes in there he did end his summary in a pretty sad way... sort of open-ended, like the story itself.*

(Note that it takes a while for students to break away from the usual normative attitudes towards their work. But when they do, it is fascinating to see how they create the meaning of their texts **as they talk.**)

> Teacher (to Jeff): *Your summary says he worked in a refinery. The others didn't mention where he worked. Is that important?*
> *Jeff: The people at work respect him.*
> *Teacher: Is it significant that he works* ***in a refinery?***
> *Jeff: Hm...yeah...because he is smarter, like the crickets.*

> Tim (reads his summary): *The short story, "Crickets," is about a man's transformation into the United States. Ted, (Mr.Thieu) is from Vietnam and fleed to America because of all the problems in his country....*
> Teacher (to Tim): *What distinguishes your summary from that of others?*
> Tim: *I'm interested in the transformation of an immigrant to another country=*
> Teacher: = *that you represent in your text by keeping the two names, Ted and Thieu, transformed one into the other?*
> Tim (smiles): *Yeah, it's the transformation that you see playing a symbolic role.*
> Teacher: *Why did you feel it was important to tell in detail the story of the crickets?*

Tim: *Well... I noticed that he was really disappointed that his son couldn't understand, just because his son is an American. I thought his disappointment was the very thing... not just the fact that they couldn't play the game...it was deeper than that...this was a very important part of the story, because the fire crickets were the ones that were better armed, and the fact that he was smarter and smaller, ahead of his people, like the fire crickets...*

The teacher's role in this approach is not to correct or praise, but simply to probe, draw possible analogies and contrasts, suggest possible interpretations, reflect on choice of words. To activate the process, the teacher may ask the students to give titles to each other's summaries, or to rewrite a given summary from another character's perspective. But the purpose is always to relate the text to the meaning proposed, not to elicit random creativity.

Teachers and students can derive great benefit from becoming conscious of the way they co-construct models of understanding through talk. Not only can it demystify the interpretive process and make visible its interactive and rhetorical nature; but it can model for the students a process of mediation that is the source of both power and pleasure.

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Notes:
* I wish to thank Maggi Sokolik, Melinda Erickson and their students for inviting me to their classes and graciously participating in this activity.

APPENDIX

The following are sample summaries by students from class A (foreign-born students, recent immigrants to the U.S.) and class B (U.S.-born students of foreign parents).

Class A

1. The story dealt with different cultures and centered on an American. It used nature to help relay symbolism and this was done by the use of crickets. Ted wants to show his son his roots in the Vietnamese culture because of American assimilation who is indifferent.

2. Ted is a Vietnamese refugee, who had immigrated to Louisiana. He has a son called Bill. Ted tried to share his childhood experience, (i.e., cricket fighting) with

Bill, when he was bored during the holiday. However, Bill does not realize the importance of Cricket fighting to his father and cares more about material goods.

3. Ted tried to give his son, Bill, information about their traditional culture back in Vietnam. Since Bill was born in America and became a typical American, he didn't seem to interest in the cricket fight which was popular back in Vietnam. Although Bill was interested for a while, the enthusiasm about learning cultures didn't interest him long enough due to the distractions of other things. Todays people are busily looking forward for new things and pay more attention to the real world instead of learning the traditional culture.

4. The story, Cricket is about the generation gap between the first generation of immigrants and the second generation, their children. The story explains why the first generation, that is represented by the father, Ted, cannot share its identities as Vietnamese with the second generation. The story ends as the father gives up trying to communicate with his son after he realizes that the difference between them is so great that it cannot be overcome.

Class B

5. The story was about a man named Thieu who had come to the U.S. from Vietnam. In the story Thieu tries to make a connection with his "American" son Bill by telling him what he used to do as a child – fight with crickets. Much to Thieu's disappointment though, Bill does not get too involved with the fighting crickets and he becomes more concerned with his stained Reeboks. In the end Thieu finally realizes the generation gap and admits to the fact that his son is truly American.

6. Ted of the former nation of South Vietnam reflects on his time and experiences in America. He begins by describing his participation in the resistance movement. The second half of the story was to teach that even if geographics change, some things will not be the same. In Ted's and his son's pursuit of the crickets, he discovers the differences in his son but little change in himself.

7. The short story "Cricket" is about an immigrant from Vietnam called Ted who finds America to be different from his homeland. Although he lives in a place that is very similar in environment to his homeland, he finds the two places to be very dissimilar in many ways. Even his son Bill, who is born in Louisiana, is different from him when he was a child.

8. An excerpt about a man from a different culture and a son from a constrasting culture. It talks about the difficulties in communication between the two because of the generation gap and the cultural gap that lies between them. It is also about the father's concern for his son's lack of knowledge of his own cultural ancestry. However, the father comes to the realization that this is a different place (U.S.) and a different experience for his son.

A discussion of the striking differences between the immigrants' and the non-immigrants' texts is beyond the scope of this paper. However, note the themes of cultural loss and father's disappointment that give a sense of tragic to class A summaries vs. that of necessary change and inevitable generation gap featured in class B summaries. The closing sentence in each of these student texts nicely sums up the narrator's point of view and his/her social and cultural stance.

5

From Information Transfer to Data Commentary

John M. Swales and **Christine B. Feak**

Information Transfer (IT) uses non-verbal material (graphs, charts, etc.) as either prompts for writing or as tasks for students to complete by gleaning information from written text. Despite the apparent methodological effectiveness of an IT task, in reality people do not simply transfer information from one format into another. In particular, a piece of writing accompanying non-verbal material typically takes the form of a selective and interpretive commentary. The purpose of this paper is to discuss how we can use the results of discourse analysis to guide our students beyond the simple transformation of information towards the more pragmatic and challenging task of writing a commentary on the non-verbal data. The writer must decide what if any parts of the non-verbal data should be repeated (information transfer) and how the data should be interpreted.

INTRODUCTION

A brief history of Information Transfer

Right from the early days of English for Specific Purposes (ESP), the use and value of incorporating technical non-verbal material in teaching texts and tasks was widely recognized (e.g., Herbert, 1965). By the middle 1970s the exploitation of formulas, diagrams, graphs, and tables had become a major feature of materials, especially in English for Science and Technology (EST), and at about this same time this interplay between verbal and nonverbal material became conceptualized within the field under the banner of "Information Transfer." As far as we are aware, "Information Transfer" (henceforth IT) was first introduced by Henry Widdowson in a paper presented at a 1973 seminar of the British Association of Applied Linguistics. The concept then found its first articulation in textbooks, appearing in Allen

and Widdowson's opening volume to the Focus series in 1974. Widdowson himself was very much the leader in this development, and he incorporated discussion of IT in several influential EST papers that he wrote about this same time (collected in Widdowson, 1979).

Widdowson argued that non-verbal information was part of the universal language of science which non-native speakers (NNS) had access to in their native language. Hence, students in the physical sciences would likely understand a simple formula like:

$$S + O_2 \longrightarrow SO_2$$

even if they might not be able to articulate their understanding in an appropriate English utterance such as:

Sulfur combines with oxygen to produce sulfur dioxide.

In his pioneering 1973 paper, Widdowson defines IT as transferring information from one mode to another, and then provides the following explanation:

> Transferring information from a verbal to a non-verbal mode is an exercise in comprehension. Transferring from a non-verbal to a verbal is an exercise in composition. This suggests that information transfer can serve as a transition between receptive and productive abilities in handling written language. Once the learner is practiced in the completing and drawing of diagrams, tables, graphs, and so on based on verbally expressed information, these non-verbal devices may be used as prompts for verbal accounts. Thus, for example, one might present a verbal description of a chemical experiment and require the learner to label a diagram or draw a diagram of his [sic] own which expressed the same information. A diagram showing a similar experiment might then be presented and the learner required to produce a verbal description, which would to some degree match that of the original descriptive passage. (reprinted 1979:73)

Expressed in this way, the *methodological* power and appeal of IT is undeniable, and it is not surprising that it rapidly became part of the mainstream ESP/EST pedagogical activity. For example, IT is a core element in both the *Nucleus* (c.f. Bates, 1976) and the *Focus* series; it also continued to be discussed and refined in the professional literature. For instance, Bartolić (1981) takes the reader from a diagram of a heating plant, through a step-by-step verbalization, to the production of a final summary. Johns and Davies (1983), add "jigsaw" type elements to IT, whereby students need to extract information from two texts to complete a diagram. The advantages of "mode-transfer" were also apparent to those in test development for English for Academic Purposes (EAP) and ESP, as witnessed by the use of non-verbal material on earlier forms of TOEFL's Test of Written English.

However, despite its methodological attractiveness, the concept of IT has limitations, even if it seems that the ESP community has tended to underplay them. Thus, the purpose of this paper is to both discuss those limitations as well as to suggest an alternative approach to exploiting non-verbal material in ESP classes. But first, we need to comment briefly on some changes in the recent ESP landscape.

CHANGING CONCEPTS OF TECHNICAL CULTURES

The last decade in EAP has been an exciting one as practitioners have become more connected to the work of other scholars. These connections have had a number of consequences for the way we think about academic and scientific language. First, the revival of interest in contrastive rhetoric, particularly as it pertained to studies of professional genres such as the research article, shows more cross-cultural variation in practice than might have been supposed. Scholars such as Hinds (1987) have shown that certain Asian cultures may withhold "obvious" information from readers as a sign of respect for them. As we and our institute colleagues have seen in their oral presentations, Asian students often refrain from commenting on their visual aids, assuming that the audience can see for itself what the visual implies. This suggests that straightforward verbalization of non-verbal material may be more acceptable in some academic cultures than in others. Hence, a simple notion of "a universal language of science" is probably not entirely appropriate. Moreover, the reasons for this variation appear to be quite diverse, involving social, institutional, as well as rhetorical factors.

A second development has been the "social constructionist" movement and its belief that scientific facts are not "out there" to be collected, but are constructed via the consensus of particular communities. And here the work of Greg Myers (1990a) on biology and Charles Bazerman (1988) on physics has been particularly influential. Thus, we now see that scientific and academic rhetoric is determined by disciplinary traditions and conventions. More recently, studies by Barton and Barton (1993) and others have argued that the non-verbal materials themselves can incorporate assumptions, conventions, and goals of the individual, group, or society that have created them; thus, they may not necessarily be a simple reflection of reality—and perhaps deliberately so. A case in point is the famous and highly successful map of the London Underground, where they show that its ease of use is precisely due to the fact that is *not* a realistic map of where the subway lines actually go.

A third development has been a move to cater to the ESP needs of more advanced students (such as graduate students) and professionals, such as NNSs wanting to publish in English. This trend has a number of causes that we need not investigate here, but is clearly manifest in the kinds of articles published in the *English for Specific Purposes Journal* over the last decade.

If we add to these three factors the fact that writing about non-verbal material in the *real world,* even in textbooks, typically involves something *more* or something *other* than straight information transfer, then we can see that the methodological advantage of IT is likely offset by its apparent rhetorical simplicity and inappropriateness of its typical products in terms of "real world" writing. Why, after all, say the same thing twice—once in words and once in non-verbal form?

As a response to these factors, we argue that a piece of writing designed to accompany non-verbal material typically takes the form of a selective and interpretive commentary (Swales and Feak, 1994). Thus, the writer is faced with a range of rhetorical and strategic decisions that involve such questions as:

- What is my target audience, and how does this audience influence my decisions?
- Where, if at all, do I need to refer the reader to the location of the non-verbal content?
- Which results should be highlighted, and for what reasons?
- What conclusions or implications can be drawn from the data—and how should they be qualified (or hedged)?
- Do I need to bring in a broader context, critique the methodology, and/or compare the results with others?

The move from IT to interpretation accords well with what scholars have discovered about more mature and successful writers. For Flower, writing about data would involve "going beyond reception and understanding...." The successful writer is able to "... turn facts into concepts, turn concepts into policy or a plan, and see the issue and define the problem within a problematic situation" (1990:5). In short, writing a data commentary requires critical literacy skills.

Critical and selective commentary can also be seen as a reinforcement of *knowledge-transforming* as opposed to *knowledge-telling* (Bereiter and Scardamalia, 1987). According to Cumming (1995), knowledge transformation in writing,

> develops relatively independently of people's proficiency in a second language, but nonetheless exerts a crucial influence on how well they are able to write in a second language ... An important implication for ESL [or even EFL] instruction in academic [writing] is that students who have not yet developed a knowledge transforming approach to composing may have to be prompted to do so through instructional approaches aimed specifically at this goal. (p. 378-379)

Overall, then, we believe that beyond the elementary levels, the traditional concept of IT should be embraced within a wider concept of data commentary, in which a proactive and critical approach to "reading" the data is

encouraged, and in which the written output provides an opportunity to demonstrate intelligence, analysis, and that elusive characteristic of "interestingness." But before we discuss our detailed proposals for how this might be achieved, we would like to demonstrate the need for this kind of EAP work by examining data commentaries produced by four NNS students on entry to graduate programs at a large U.S. university.

FOUR DATA COMMENTARIES

The University of Michigan, like many Anglophone universities around the world, re-evaluates the English ability of most new international graduate students. For the writing part of the re-evaluation, two tasks are required: one, a 30-minute composition based on source material and the other, a data commentary. For the 1993-94 commentary, the students were instructed to imagine themselves as part of a research team investigating aggression in 8-year old children. The students were presented with a set of data that they had "collected" (see table 1) and the hypothesis that 8-year old boys are more aggressive than 8-year old girls. They were then given 15 minutes to write a commentary, for which the first sentence was provided:

> In order to investigate the hypothesis that 8-year old boys are more aggressive than 8-year old girls, 8-year old children were observed playing in schoolyards and incidents of certain aggressive behaviors were recorded.

Commentaries are scored holistically and assigned a rating ranging from a low of 63 to a high of 97.[1]

Aggressive behavior	Girls	Boys
Pushing	21%	35%
Kicking/Hitting	15%	61%
Cursing	9%	30%
Chasing	78%	1%

We have selected the work of four new graduate students, Tetsu, Juan, Alex, and Marc[2] to represent the range of approaches to the task. The texts appear in their original form, including grammatical and lexical errors; however, since these are minor, they do not detract from the types of statements made. Sentence numbers have been added for ease of discussion. The rating for each of the commentaries follows in parenthesis.

THE COMMENTARIES

We first present the commentary of Tetsu, who plans to obtain a Master's degree in public policy studies.

Tetsu

> [1]In order to investigate the hypothesis that 8-year old boys are more aggressive than 8-year old girls, 8-year old children were observed playing in schoolyards and incidents of certain aggressive behaviors were recorded. [2]Table 1 shows that boys are more aggressive than girls. [3]The percentage of pushing is 21% of girl; on the other hand that of boys is 35%. [4]Except for chasing, the percentage of aggressive behavior is higher in boys. [5]From this data you can agree that boys are more aggressive than girls. (Rating: 73)

Tetsu expanded on the sentence prompt, adding four sentences totaling 51 words. In sentence 2, he appropriately locates the source of the data; however in the potential discussion of the data in sentences three and four, he simply repeats the contents of the table. Tetsu has highlighted only two aspects of the table: pushing (the first behavior) and chasing (the last behavior). Since the purpose of the research is to determine whether 8-year old boys are more aggressive, it is questionable whether he has chosen the best information to highlight. It would seem that kicking and hitting are of greater significance. This suggests that Tetsu, at least for this task, has difficulty distinguishing the more important facts from the less important ones. Moreover, although Tetsu notes that the chasing percentages are inconsistent with the rest of the data, he does not attempt to explain that this behavior is different in terms of level of aggressiveness. He compares, but does not evaluate. In his concluding sentence, Tetsu seems satisfied that he has discussed the data sufficiently to enable the reader to agree with the hypothesis. As is the case with many of our Asian students, he has refrained from much discussion or explanation, assuming that the readers themselves would, of course, reach the same conclusion. In short, we can see from this discussion that Tetsu's approach to the task is one of simple information transfer.

Juan

Juan is beginning his studies in Industrial and Operations Engineering. Although his commentary is slightly more successful than Tetsu's, his approach is also essentially one of IT.

> [1]In order to investigate the hypothesis that 8-year old boys are more aggressive than 8-year old girls, 8-year old children were observed playing in schoolyards and incidents of certain aggressive behaviors were recorded. [2]As you can see in table 1 we only considered four human aggressive behaviors in our study. [3]The most common children aggressive conduct are pushing, kicking/hitting, cursing, and chasing. [4]After several weeks of observa-

> tion in different schools playground we found the percentage that appeared on table 1. [5](See attachment 1) [6]Sixty percent (61%) of the boys like to kick and hit compared to fifteen percent (15%) of the girls. [7]This is more aggressive than chasing. [8]The chasing behavior was the only one girls were more aggressive than boys. (Rating: 77)

Juan produced a longer response: 90 words—seven sentences of original commentary. He includes in sentence two a location element in the form of a linking as-clause and defines what the research considers aggressive behavior to be. In sentence four we see that he has added a time element (after several weeks), and has highlighted two behaviors—kicking/hitting and chasing, both of which seem reasonable. However, as is the case with Tetsu's commentary, his highlighting statements simply repeat the percentages in the table. He notes the exception (chasing), compares it to the other data, but does not suggest how this should be viewed with respect to the given hypothesis. The response seems to "die" at the end as Juan simply mentions the chasing anomaly. However, what has weakened his commentary most, is the lack of explicit connections among his statements. His account lacks textuality.

Alex

Alex, an entering student in Mechanical Engineering and Applied Mechanics, on the other hand, has taken the task much farther than Juan and Tetsu. In fact, his commentary is typical of many good commentaries that we read.

> [1]In order to investigate the hypothesis that 8-year old boys are more aggressive than 8-year old girls, 8-year old children were observed playing in schoolyards and incidents of certain aggressive behaviors were recorded. [2]It was assumed that aggressive behavior consisted of the following: i) pushing, ii) kicking and hitting, iii) cursing, and iv) chasing. [3]As can be seen from the table above, the average 8-year old boy was more aggressive than the 8-year old girls. [4]Chasing was the one behavior that was more pronounced for the girls. [5]This result, however, does not disprove the theory since chasing seems to be a less aggressive behavior than the other behaviors that were tested. [6]The 8-year old boys got more involved with the more aggressive behavior, which is kicking/hitting, much more than the 8-year old girls. (Rating: 93)

Alex's commentary consists of 105 original words—five sentences. As with Juan's commentary, Alex's commentary refers to the table (sentence three) and identifies the behaviors that the study focused on. However, Alex has taken a more thoughtful approach. He qualifies (actually distances himself from) his statement when he says in sentence two, "*It was assumed* that aggressive behavior consisted of the following . . ." The text contains another instance of qualification in sentence five: ". . . *chasing* seems to be a less aggressive behavior." Thus, Alex reveals his awareness that discussion of data may sometimes need to be hedged or qualified. There is no repetition of

data from the table in the commentary. Alex seems to let the main data speak for itself, but interprets the one piece of information that does not seem to fit (chasing). In other words, unlike Tetsu and Juan, he notes the exception and links his discussion of it to the hypothesis. Alex goes beyond a simple comparison of the two groups, acknowledging in sentences five and six the fact that the behaviors differ in their level of aggressiveness. In these two sentences Alex demonstrates not only his awareness that he should somehow transform the knowledge, but also his ability to do so. He has constructed something new—something that cannot be readily seen from the table. Alex's discussion is an expression of his view of the data, not of attributes intrinsic to the data itself. Although, Alex does not seem to be linguistically more capable than Tetsu and Juan, his strategy and skill in tackling the task has resulted in a more successful commentary. No wonder that he obtained a high score, excluding him from any writing requirement.

Marc

Finally, Marc, a new graduate student in biology, has approached the task in a manner very different from the others and produced a rather exceptional commentary. We actually see very few commentaries such as this and would not expect students to react in this way, especially given the rubric that they should assume the findings are their own data! We offer Marc's commentary to demonstrate another approach to the task.

> [1]In order to investigate the hypothesis that 8-year old boys are more aggressive than 8-year old girls, 8-year old children were observed playing in schoolyards and incidents of certain aggressive behaviors were recorded. [2]At first glance it appears that 8-year old boys exhibit more aggressive behavior than 8-year old girls if all four recorded behaviors are equally weighed. [3]But, this last assertion is false. [4]Since the ability to record will vary with playground size and the number of observers (not to mention the skills of the observers or accounting for children entering or leaving the playground), and that it takes a certain amount of an observer's time to note the behavior, short-lived behaviors such as cursing or pushing could be under-represented. [5]Simply because more can occur during the time an observer notes another behavior. [6]Conversely, long-lived behaviors such as chasing could be over-represented because they occur over a longer period of time and thus allow more latitude for the observer marking the behavior. (Rating: 93)

Marc wrote the most of the three, adding 136 words—six sentences to the given sentence. Marc differs from the other three in that he analyzes and challenges the data from the start as he says in sentence two, "*At first glance it appears* ...." We can say that he challenges the task as well. Marc's purpose was apparently not to actually discuss the findings. He neither cites percentages in the table, nor comments on the actual behaviors. Rather his strategy was to expose the limitations in the methodology. From this discussion, it

would appear that Marc has had experience working with and writing about data; on the other hand, his high score seems somewhat generous in light of the actual task design. Marc's response actually illustrates a high-risk strategy of critique which has paid off in this case.

We would all likely agree that Marc and Alex have produced more interesting commentaries than Tetsu and Juan. What distinguishes Marc and Alex from the other two is the extent to which they articulate their "attack" on the data. Tetsu and Juan viewed the task as simple information transfer from one medium to another—we cannot tell what they make or think of the data. Alex went beyond mere repetition, analyzing the data and offering an interpretation. Marc, on the other hand, used the information, synthesized it with his knowledge about how good research is conducted, presented a critique of the methodology, and logically supported his claim that the data does not support the hypothesis.

We can also see how differently the writers packaged their claims. Both Marc and Alex reveal their awareness that claims must be carefully, yet confidently stated. For instance, Marc states, "*At first glance it appears* that 8-year old boys exhibit more aggressive behavior than 8-year old girls . . ." And "behaviors such as cursing or pushing could be *under-represented.*" Juan and Tetsu, in contrast, make no attempt at interpretation or transformation. The closest Juan comes to doing so is when he says, "This is more aggressive than chasing."

ADOPTING A CRITICAL APPROACH TO DATA COMMENTARY

If their commentaries are a reasonable reflection of their critical literacy skills, Alex and Marc will probably fare rather well as they write in their chosen fields. However, we cannot be so optimistic about Tetsu and Juan. Their simple IT strategy, if extrapolated to other contexts, will result in rather flat and unimaginative writing. However, simply telling them to be more analytical may be insufficient. It would seem that the EAP writing instructor must go beyond helping students with syntax, morphology, vocabulary, and typical genre conventions and attempt to reach out to their critical intelligence.

One possibility is to help students see the discourse strategies that other more successful writers have employed in their texts, and to help them discover the thinking processes that preceded the actual writing; in short, we should try to help them understand the cognitive aspects (Cumming, 1995) of successful data commentaries written by others. Alex's commentary provides a successfully safe strategy and Marc a riskily successful strategy.

We can illustrate changes in attitudes to non-verbal data more clearly by comparing Swales (1971) with Swales and Feak (1994). Unit Eleven of the 1971 *Writing Scientific English (WSE)* is entitled "Tables and Graphs." Its main components are making comparisons (X melts at a higher temperature than Y), constructing generalizations (Two elements—oxygen and silicon—provide nearly 75 percent of the weight of the earth's crust), and using link-

ing as-*clauses* (As can be seen in the table...) *WSE's* focus is on *statements,* not on text. Here is a typical exercise.

Exercise 14(a) Complete these statements of contrast, using Table 13.

1. Rain falls every month in London, whereas in Alexandria...

2. London has six months in a year with an average rainfall of more than 55mm; on the other hand, Alexandria...

3. Alexandria usually has three months without rain, while...

4. Both cities have approximately the same amount of rainfall in January; in March, however,...

5. London rainfall tends to remain fairly constant throughout the year, whereas...

Table 13 Average monthly rainfall in millimeters

	Alexandria	London
January	48mm	47mm
February	24	39
March	11	47
April	3	38
May	2	41
June	0	52
July	0	63
August	0	61
September	1	45
October	6	68
November	33	60
December	56	61

Exercise 14(b) Write a short passage comparing the rainfall of Alexandria and Tripoli, Libya. The information for Tripoli can be found under City A in Exercise 14 of Unit 3 (page 33).

Notice that in Exercise 14b there is no indication of how the information might be ordered. Note, too, that the actual commentary might vary according to whether the main highlighting statement stresses differences in regularity of rainfall or differences in the annual total. Nor is there any suggestion that the reader might reasonably expect some explanation of the

differences, which could include a discussion of latitude or the effect of the Gulf Stream; thus, this exercise would perpetuate the information transfer approach adopted by Testu and Juan. Today we would want our students to offer us a real commentary rather than a series of contrastive points. By 1994, matters were very different, as revealed by *Academic Writing for Graduate Students (AWG).*

The first noticeable difference between the two chapters is in their titles. Unit Four of *AWG* is called Data Commentary, hinting that the focus here will be on evaluation or analysis, not description. This unit presents the structure of a data commentary, the concepts of hedging and qualification, and strategies for dealing with "problem" data. Throughout, the unit stresses the importance of critical thought in the discussion of data, examining how certain types of statements may help or hinder a discussion. While the unit does contain language focus sections, the overall text is of prime importance. An exercise that reflects the goals of the unit is Task Two.

Task Two (adapted from the original)
Look over the following table, read the data commentary that follows, and then answer the questions.

Table 5. Means of PC Infection in U.S. Businesses

Source	Percentage
Disks from home	43%
Electronic bulletin board	7%
Sales demonstration disk	6%
Repair or service disk	6%
Company, client, or consultant disk	4%
Other	9%
Undetermined	29%

1) A computer virus is a program that is specifically and maliciously designed to attack a computer system, destroying data. 2) As businesses have become increasingly dependent on computer systems, concern over the potential destructiveness of such viruses has also grown. 3) Table 5 shows the most common modes of infection for U.S. businesses. 4) As can

be seen, in the majority of cases, the source of the virus infection can be detected, with disks being brought to the workplace from home being by far the most significant (43%). 5) However, it is alarming to note that the source of nearly 30% of viruses cannot be determined. 6) While it may be possible to eliminate home-to-workplace infection by requiring computer users to run antiviral software on diskettes brought from home, businesses are still vulnerable to major data loss, especially from unidentifiable sources of infection.

1. Where does the data commentary actually start?

2. What are the purposes of sentences 1 and 2?

3. Do you consider this commentary a problem-solution text?

4. What are some of the features of this text that make it an example of formal written English?

5. Which sentence contains the author's key point?

6. After Task One we listed five common purposes for data commentaries. In which category does this one fall?

7. The author has chosen only to comment on percentages greater than 10%. Why? Do you think this is enough? If not, what would be a suitable additional sentence?

8. Undetermined sources constitute 29% of the total. In sentence 5, this is expressed as "nearly 30%." What do you think about this and these alternatives:

a. over one-fourth of viruses
b. 29% of viruses
c. as much as 29% of all viruses

This task looks at the actual discourse and provides students an opportunity to think about data commentary before they do any actual writing. Such a task enables students to realize that writing a commentary entails a number of strategic choices, both in terms of which parts of the data to highlight and how to write about them. A secondary intent of the task was to offer questions that could prompt or guide the students' thinking when they later wrote commentaries of their own. Thinking back on the commentaries of our four students, Alex and Marc already had a critical approach and probably do not need the type of prompting suggested in the task. Tetsu and Juan, on the other hand, could greatly benefit. In addition to this, a discussion of the

components of a data commentary would be useful, such as location elements, highlighting statements, and discussion of implications, problems, or exceptions.

CONCLUSION

For all its methodological attraction and for all its proven capacity to generate comparative statements, Information Transfer is premised upon an *uncritical* and *under-interpretive* verbalization of data presented via some non-verbal means. We have argued that exploiting the methodological advantage may be advantageous for the ESP classroom, but disadvantageous in other venues, and hence not in our students' long-term interests. In effect, we suggest that IT operates against critical thinking, critical reading, and the writing of critiques. Indeed, it looks like a classic instance of the "applied linguist's dilemma" regarding how to marry our profession's capacity to articulate surface features (such as a graded representation of comparative statements) into our perceptions of rhetorical strategy. We have suggested here that a switch from IT to Data Commentary sets up prior interpretive, critical, and textual expectations, within which linguistic realizations (e.g., lexical and grammatical choices) can then form a more appropriate and incorporated place.

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Notes:

1. Actual scores that can be given by raters are: 63, 67, 73, 77, 83, 93, 97.
2. The students' names have been changed for reasons of confidentiality.

SECTION THREE

SOCIAL APPROACHES

6

Critical Discourse Analysis

Thomas N. Huckin

Critical Discourse Analysis (CDA) is a highly context-sensitive, democratic approach which takes an ethical stance on social issues with the aim of improving society. This chapter begins by describing six ways in which CDA differs from other forms of textual analysis. After a description of general strategies, certain tools of CDA such as genre, framing, foregrounding, omission, and presupposition are introduced and implemented to analyze a newspaper article. A sentence-by-sentence approach is then described followed by an analysis at the word/phrase level. After a discussion of the social context of the newspaper article, benefits of CDA for the teacher are described.

Critical discourse analysis (CDA) is a relatively new addition to the varieties of text analysis available to the second-language teacher and researcher. It could best be characterized as an approach or attitude toward textual analysis rather than as a step-by-step method. CDA differs from other forms of textual analysis in six major respects. First, it tries to acknowledge the fact that authentic texts are produced and read (or heard) not in isolation but in some real-world context with all of its complexity. CDA is thus highly context-sensitive: It tries to take into account the most relevant textual and contextual factors, including historical ones, that contribute to the production and interpretation of a given text.

Second, although critical discourse analysis casts a broad net, it is a highly integrated form of discourse analysis in that it tries to unite at least three different levels of analysis: the text; the discursive practices (that is, the processes of writing/speaking and reading/hearing) that create and interpret that text; and the larger social context that bears upon it. In so doing, CDA aims to show how these levels are all interrelated.

Third, critical discourse analysis is very much concerned with important societal issues. This feature derives partly from the first, inasmuch as "context" is meant to include not only the immediate environment in which a text is produced and interpreted but also the larger societal context including its relevant cultural, political, social, and other facets. CDA researchers and theorists feel that since there are no restrictions on the scope of an analysis, we might as well choose texts that potentially have real consequences in the lives of a large number of people.

Fourth, in analyzing such texts, CDA practitioners typically take an ethical stance, one that draws attention to power imbalances, social inequities, non-democratic practices, and other injustices in hopes of spurring readers to corrective action. This is why the term critical is used: CDA not only describes unfair social/political practices but is explicitly critical of them.

Fifth, critical discourse analysis assumes a "social constructionist" view of discourse. Following the poststructuralist philosophies of Michel Foucault, Mikhail Bakhtin, and others, CDA practitioners assume that people's notions of reality are constructed largely through interaction with others, as mediated by the use of language and other semiotic systems. Thus, "reality" is not seen as immutable but as open to change—which raises the possibility of changing it for the better. By focusing on language and other elements of discursive practice, CDA analysts try to illuminate ways in which the dominant forces in a society construct versions of reality that favor the interests of those same forces. By unmasking such practices, CDA scholars aim to support the victims of such oppression and encourage them to resist it.

Finally, in pursuit of these democratic goals, critical discourse analysts try to make their work as clear as possible to a broad, nonspecialist readership. In particular, we try to minimize the use of scholarly jargon and convoluted syntax, even at the risk of losing some precision in the analysis.

In sum, the primary activity of critical discourse analysis is the close analysis of written or oral texts that are deemed to be politically—or culturally influential to a given society. But the text-analytic activity cannot be done in isolation; rather, the analyst must always take into account the larger context in which the text is located. This can be schematized as follows (from Fairclough, 1992):

As suggested by this schematic diagram, a text is assumed to be the product of discursive practices, including production, distribution, and interpretation, which themselves are embedded in a complex mosaic of social practices. To put this another way: The meaning of a text derives

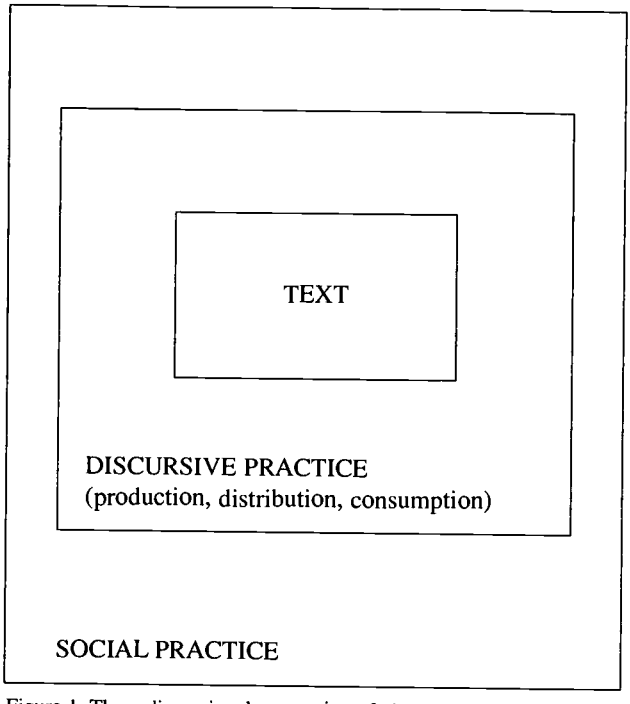

Figure 1. Three-dimensional conception of discourse
(from Fairclough, "Discourse and Social Change," *Polity*, 1992).

not just from the words-on-the-page but also from how those words are used in a particular social context. When more than one user and one social context are involved, a given text will typically have more than one "meaning."

The rest of this chapter is organized as follows: (1) a description of how critical discourse analysis is done, including a description of some of the tools involved; (2) an example of CDA using a newspaper report; and (3) discussion about how CDA can be applied to EFL teaching.

HOW TO DO CRITICAL DISCOURSE ANALYSIS

Since the primary activity of CDA is analyzing texts, it may be useful at this point to take a look at the kinds of tools that can be used. It should be kept in mind that CDA is not a linguistic theory and therefore does not provide a complete grammar of syntactic, phonological, or other linguistic elements for any particular language. Nor does it aim to describe any particular text in exhaustive detail. Instead, it tries to point out those features of a text that are most interesting from a critical perspective, those that appear to be textual manipulations serving non-democratic purposes. Not every concept found in a linguistics textbook (or even in a discourse analysis methods book such as this one) is equally useful when it comes to doing critical discourse analysis, and even CDA analysts differ somewhat among themselves in the kinds of

tools they employ. Even those trained as Systemic Linguists, who represent perhaps the dominant strain of CDA, do not all focus on exactly the same kinds of text features.

It is necessary, however, for any CDA analyst to have a broad inventory of possible text-analytic tools to draw from. Since I believe my approach is fairly typical of CDA methodology, and since in any case there is no "standardized" form of CDA methodology, I will henceforth focus (with apologies to other CDA workers) on those tools that I have found most valuable in my own work. My comments will refer mainly to written texts, as these provide the best opportunities for CDA work in EFL contexts. If your students have access to English-language advertisements, news reports, etc. on local radio or TV, however, you could apply many of the same concepts discussed here as well as some additional ones particular to spoken discourse such as turn-taking, topic management, metamessages, intonation, politeness, etc. (see Tannen, 1990; Levinson, 1983).

General Strategy: I try to approach a text in two stages. First, I play the role of a typical reader who is just trying to comprehend the text in an uncritical manner. In teaching EFL students, much time would normally have to be devoted to this stage, supported by traditional EFL reading materials and instructional methods. Second, I then "step back" from the text and look at it critically. This involves revisiting the text at different levels, raising questions about it, imagining how it could have been constructed differently, mentally comparing it to related texts, etc. Generally, this second stage goes from large (text-level) features to small (word-level) ones, though the exact sequence might differ from case to case. It is important during this second stage not to lose sight of the first stage; that is, one should always keep the ordinary reader in mind while critiquing the text. This allows the analyst to focus on those features that seem to have the potential of misleading the unwary reader.

Details: What follows is a more detailed description of this second (critical) stage.

THE TEXT AS A WHOLE

It makes sense to start by considering the text as a whole, since this is usually where textual manipulations have their most powerful effect. Readers don't just pick up a text and start deciphering it word by word. Rather, they usually begin by recognizing that the text belongs to a certain **genre** (text type) that manifests a characteristic set of formal features serving a characteristic purpose. For example, advertisements as a genre are usually immediately recognizable by their use of attention-getting language and visual aids, by the way they extol the virtues of some product or service, and by their artificially personal tone—all of which are designed to encourage readers to buy that particular product or service. The CDA analyst should therefore begin by deter-

mining the genre of the text under analysis and observing how that text conforms to it. This genre-orientation often allows the analyst to see why certain kinds of statements appear in the text and how they might serve the purposes of the text-producer, as encoded in that genre. It can also help the analyst imagine what has been left out—what could have been said, but was not. If the genre ordinarily includes certain kinds of information, and yet one does not find such information in the text being analyzed, it gives the analyst reason to suspect that the writer has deliberately left it out. (See comments on **omission**, below.) Finally, many clever writers know how to **manipulate** a genre, how to go beyond its normal boundaries to produce special effects. For example, news reports are supposed to use "neutral, objective" language, but some reporters will insert an occasional loaded word to slant the report. Genre knowledge enables the analyst to detect and interpret such deviations critically.

Another major part of text production and text interpretation is **framing.** Framing refers to how the content of a text is presented, what sort of perspective (angle, slant) the writer is taking. To be coherent, a text cannot simply be a collection of details; rather, it must try to pull these details together into some sort of unified whole. There can be frames within frames. For example, a news report might be framed as a narrative, or story; and within that frame it might set up a Good Guys vs. Bad Guys frame with one group of participants being given favorable treatment over the other. One particularly powerful way of framing a text is through the use of **visual aids.** Analysts should be alert to photographs, sketches, diagrams, formatting devices, and other visual embellishments.

Closely related to framing is **foregrounding** (and its opposite, **backgrounding**). These terms refer to the writer's emphasizing certain concepts (by giving them textual prominence) and de-emphasizing others. Textual prominence sometimes derives from the use of genres, as certain genres will sometimes have "slots" that automatically bestow prominence on any information occupying those slots. For example, the top-down orientation of news reports decrees that sentences occurring early in the report will be foregrounded while those occurring later will be backgrounded.

The ultimate form of backgrounding is **omission**—actually leaving certain things completely out of a text. Omission is often the most potent aspect of textualization, because if the writer does not mention something, it often does not even enter the reader's mind and thus is not subjected to his or her scrutiny. It is difficult to raise questions about something that is not even "there."

Writers can also manipulate readers through **presupposition.** Presupposition is the use of language in a way that appears to take certain ideas for granted, as if there were no alternative. A common example of this at the text level would be an advertisement that describes a product in such glowing terms that the product appears to have no rival.

Many texts contain more than one style of discourse (or "register," see below). Writers can exploit these **discursive differences** to manipulate readers in various ways. For example, an advertisement for a medical product might be written partly in the voice of a typical user ("Some seasonal allergy medicines used to make me feel drowsy.... Then I woke up to HISMANAL") and partly in the voice of the medical scientist ("The reported incidence of drowsiness with HISMANAL [7.1%] in clinical studies involving more than 1600 patients did not differ significantly from that reported in patients receiving placebo [6.4%]."). The first "voice" emphasizes the helplessness of the ordinary citizen; the second emphasizes the authority and expertise of the scientific community. [Quotes from *TIME,* 4/24/95, p. 57.]

READING SENTENCE BY SENTENCE

Having noticed the genre and framing of a text, readers next typically proceed through it sentence by sentence. At this level, in addition to constructing the basic meaning of each sentence, they might notice that certain pieces of information appear as grammatical subjects of the sentence and are thereby **topicalized** (which is a type of foregrounding at the sentence level). A sentence topic is "what the sentence is about." Often the topic of one sentence continues as the topic of the next, reinforcing its importance in the text. Topicalization is thus a form of sentence-level **foregrounding:** In choosing what to put in the topic position, writers create a perspective, or "slant," that influences the reader's perception.

Readers might also notice, if only subconsciously, the **agent-patient** relations in sentences. If someone is depicted as an agent, who is it? Who is doing what to whom? Many texts will describe things so that certain persons are consistently depicted as initiating actions (and thus exerting power) while others are depicted as being (often passive) recipients of those actions.

Another common form of manipulation at the sentence level is the **deletion** or **omission** of agents, which escapes the notice of many uncritical readers. Agent-deletion occurs most often through nominalization and the use of passive verbs. For example, a headline like "Massacre of 25 Villagers Reported" does not say who did the killing, thanks to the nominalization *massacre*. The same is true of a headline reading, "25 Villagers Massacred," because of the agentless passive construction. In both of these cases, the spotlight is on the victims, not on those guilty of the crime.

Presupposition can also occur at the sentence level. If a politician says, "We cannot continue imposing high taxes on the American people," he or she is presupposing that the taxes Americans pay are "high" (which makes good political rhetoric but is not true, at least not compared to other industrialized nations). Such presuppositions are quite common in public discourse, especially in political speeches, advertisements, and other forms of persuasive rhetoric. They can also be found in supposedly "objective" discourse such as that found in news reports. Presuppositions are notoriously manipulative

because they are difficult to challenge: Many readers are reluctant to question statements that the author appears to be taking for granted.

Insinuations are comments that are slyly suggestive. Like presuppositions, they are difficult for readers to challenge—but for a different reason. Insinuations typically have double meanings, and if challenged, the writer can claim innocence, pretending to have only one of these two meanings in mind. (This is similar to what Hodge & Kress, 1988 call an "ideological complex.") Because of this deniability, insinuations can be especially powerful elements in any kind of discourse.

WORDS AND PHRASES

At a more detailed level of reading, one can take note of the additional, special meanings (or **connotations**) that certain words and phrases (lexis) carry. Connotations derive from the frequent use of a word or phrase in a particular type of context. The word "grammar," for example, has negative connotations for most Americans, who have unpleasant memories of being drilled in school by a stern grammar teacher. **Labels** often carry unavoidable connotations. For example, with a polarized political issue, such as abortion in the U.S., it is virtually impossible to refer to one side or the other in completely neutral terms. Someone who opposes abortion would likely be labeled "pro-life" by sympathizers but "anti-choice" by opponents. Most educated American readers seeing one or the other term would immediately understand this additional connotation. Sometimes connotations are conveyed through the use of **metaphor** or other figures of speech.

Another aspect of textuality based largely on lexis is the **register** of a text . Register refers to a text's level of formality or informality, its degree of technicality, its subject field, etc. The text you are reading right now, for example, is intended to be in a semi-formal, semi-technical, applied linguistic register. Writers can deceive readers by affecting a phony register, one that induces a certain misplaced trust. Typical examples of this would include advertisements written either in a friendly "conversational" register or in an authoritative "expert" register.

Modality is another feature of discourse worth attending to for critical purposes. Modality refers to the tone of statements as regards their degree of certitude and authority; it is carried mainly by words and phrases like *may, might, could, will, must, it seems to me, without a doubt, it's possible that*, etc. Through their use of such modal verbs and phrases, some texts convey an air of heavy-handed authority while others, at the other extreme, convey a tone of deference.

An Example

We will briefly examine the following text to get a sense of how CDA works.

Nevada Officials Arrest 700 At Test-Site Gulf Protest

MERCURY, Nev. (AP) —More than 700 people were arrested Saturday during an anti-nuclear, anti-Persian Gulf buildup protest at the Nevada Test Site, officials said.

Thousands turned out for the demonstration. Those arrested on misdemeanor trespass charges were taken to holding pens, then transported by bus to Beatty, 54 miles north of the remote nuclear proving ground.

An Energy Department spokesman estimated the crowd at 2,200 to 2,500 people A sponsor of the protest, American Peace Test, said the crowd was 3,000 to 4,000 strong.

The turnout was one of the largest since anti-nuclear demolitions began at the test site nearly a decade ago, but it failed to match a turnout of 5,000 demonstrators in 1987, when 2,000 people were arrested on trespass charges

The DOE spokesman, Darwin Morgan, said more than 700 people were arrested and would be released on their own recognizance.

"Some of the demonstrators were a bit more aggressive, kicking at the guards when they were brought out of the pens," Morgan said.

Demonstrators carried signs reading "Farms Not Arms," "Give Peace A Chance," "Radiation is Poison," and "Stop Destroying Our Planet."

The demonstrators rallied near the entrance to the site, then crossed a cattle guard on a road leading to this tiny community that provides support facilities for testing.

Others crawled across fences and fanned out into the desert, where dozens of security guards and members of the Nye County Sheriff's office waited to arrest them.

Bill Walker, a spokesman for the Las Vegas-based American Peace Test, said the protest was in opposition to "military policies that have brought the U.S. to the brink of war in the Saudi desert" and in support of a proposed United Nations ban on nuclear testing.

British and U.S. nuclear weapons are tested at the Nevada site.

This is a news report published in the January 6, 1991 edition of *The Salt Lake Tribune,* one of the two main daily newspapers in Salt Lake City, Utah, a city of about 1,000,000 people in the western United States. The details of this report were actually gathered and distributed by an international wire service, the Associated Press; the *Tribune* presumably only edited the report and put a headline on it.

It is best to begin an analysis by trying to put oneself in the reader's position, that is, by imagining a typical reader and how he or she might typically deal with this text. (In terms of Fairclough's schematic diagram, this is one aspect of the "Discursive Practices" box.) It is reasonable to suppose that a typical reader of this report would be a regular reader of the *Tribune* and a resident of Salt Lake City. This topic would be of some concern to many such readers, for two reasons: (1) The state of Nevada lies just to the west of Utah

and has long been the site of nuclear testing. During that time cancer rates among Utahns living near the state line have increased disproportionately to those of other Utahns, leading to widespread belief that these "downwinders" are being afflicted by nuclear fallout carried by westerly winds from Nevada. (2) At the time of publication (January 6, 1991), the start of the Persian Gulf War was less than two weeks away. Most Utahns, like most other Americans, were very much tuned in to the impending conflict. In my opinion, a typical reader of this section of the paper, having noticed the headline, would probably have skimmed at least some of the article.

TEXT ANALYSIS

We now take a close look at the text, starting with features associated with the text as a whole (genre, framing, visual aids, etc.) and then gradually narrowing down to sentence-level and word-level features.

Genre. Newspaper reports typically have a top-down or "inverted pyramid" structure with information presented in descending order of importance (Van Dijk, 1988). Thus, whatever the reporter chooses to put first will be interpreted by most readers as most important, and whatever appears last will be interpreted as least important. In this case, the reporter has chosen to foreground the arresting of 700 people, not the reasons for the demonstration. Indeed, the fact that "British and U.S. nuclear weapons are tested at the Nevada site" is mentioned only at the very end. Other reasons for the demonstration are only briefly mentioned, all in the second column.

Framing. The news-report "formula" just described obliges the writer to order his information in a top-down sequence of statements, with the initial ones serving to create a frame for the story. In the case at hand, the writer has clearly chosen to frame the event as a simple confrontation between a crowd of protestors and law-enforcement officials. The entire first column is devoted to numerical details about how many demonstrators there were and how many of them were arrested. The writer has also chosen to depict the officials in favorable terms and the protestors in unfavorable ones. Notice, for example, how Energy Department estimates are given priority over those from the protesting group, and how the DOE (Department of Energy) spokesman's comments are presented before those of the demonstrators. This framing succeeds in drawing attention away from the more substantive aspects of the event, such as American military policies, public health, and environmental protection.

Visual aids. No photos or other visual aids accompanied this article, though one can easily imagine what kinds of photos could have been used (policemen wrestling with protestors, protestors being led away to police vans, etc.). The large, bold typeface used for the headline would certainly draw the reader's attention, and thus immediately set up the frame just discussed.

Foregrounding/backgrounding. As mentioned above, this article foregrounds the protestors-versus-police frame. And in so doing, it backgrounds more important societal issues regarding military policy, public health, etc.

Omission. Determining what has been left out involves first asking the question, What **could** the writer have said here? In other words, what kind of information does the genre allow? Teun Van Dijk's studies of news discourse show plainly that the news-report genre allows for substantial background information and verbal commentary. This text could have included information about the scope of the nuclear testing planned for at the Nevada site, about the longstanding health problems being experienced by downwinders, about American military policies, about environmental effects of nuclear testing, about where the protestors came from (were they locals or did they come from all over the U.S.?), and so on. The fact that it does not include such important information—in a genre supposedly devoted to "informing the public"—gives the critical discourse analyst ample reason to raise suspicions about the real interests of this newspaper and the wire service (Associated Press) which supplied the report. I would argue, with Michael Parenti (1993), that in order to secure a large audience for advertisers, the popular news media as represented by this newspaper and wire service are more interested in entertaining and titillating than in genuinely informing and educating the public.

Presupposition. The way this news story is framed presupposes that the most interesting feature of public protests is the number of protesters arrested, not the issues behind the protest. The story also presupposes that government officials are more correct in their actions than ordinary citizens, and more reliable in their accounts. Another presupposition in this account is that the behavior and movements of the protestors are of more significance than the behavior and movements of the police.

Discursive Differences. For the most part, this text is written in the semi-formal register of reportorial discourse. There is a noticeable intrusion of protest-sign discourse, however, with slogans like "Farms Not Arms," "Give Peace a Chance," "Radiation is Poison," and "Stop Destroying Our Planet." This alternative discourse, though perhaps necessary for signs, seems less dignified in comparison to the discourse of the rest of the article. Instead of quoting the signs directly, the reporter could have interviewed the sign-holders and gotten fuller statements from them similar to that from Bill Walker. In my view, this would have had the effect of treating the protestors' concerns with more respect.

Topicalization. Looking more closely at the individual sentences, one can see a pattern of sentence topics that supports the protestors-versus-officials frame:

"Nevada Officials...."
More than 700 people....

Thousands [of demonstrators]...
Those [demonstrators] arrested on misdemeanor trespass charges...
An Energy Department spokesman...
A sponsor of the protest, American Peace Test...the crowd...
The turnout...
The DOE spokesman, Darwin Morgan,... more than 700 people...
Some of the demonstrators...
Demonstrators...
The demonstrators...
Other [demonstrators]...
Bill Walker, a spokesman for the [protestors]...the protest...
British and U.S. nuclear weapons...

All but the last sentence have topics referring either to the protestors (11 references) or to the officials (3). The text is clearly, therefore, about the protestors and the officials; it is not about the issues that motivated the rally in the first place.

Agency. Although the protestors are heavily topicalized in this text, they are not endowed with much power. If we note how agent-patient relations are depicted, we see that in almost all of the sentences in the first half of the report, the government officials are the ones initiating actions: They arrest, take, transport, estimate, say, and release. It is only in the second half of the report that the protestors are empowered with initiative of their own: They kick, carry, rally, cross, crawl, etc. Interestingly, this sequencing of events is the precise opposite of the actual chronology of events; the actions of the protestors presumably **preceded** those of the government officials, not the other way around.

Deletion/omission. Although the government has the power in this text, it is somewhat concealed from view. For example, the slogans on the signs carried by the demonstrators do not say who should "give peace a chance" or who is "destroying our planet." Presumably it is the government, but we are forced to guess this. In a sentence like "More than 700 people were arrested Saturday . . .," the writer could have added, ". . . by government officials." Instead, the writer probably assumed that readers could easily infer this, and so left it out. Many other sentences and noun phrases in this text also omit specific mention of the government as agent. This has the overall effect, I would argue, of backgrounding the government's responsibility for any of these things.

Presupposition. There are a number of sentence-level presuppositions operating in the verbal comments embedded in this text. For example, when the DOE spokesman says that "Some of the demonstrators were a bit **more** aggressive [emphasis mine], " he implies that all of the demonstrators were aggressive to at least some degree. The demonstrator's sign reading "Give Peace a Chance" presupposes that the government is presently **not** doing so.

Another sign reading "Stop Destroying Our Planet" presupposes that the government is presently destroying our planet. Although there are more presuppositions attached to the protestors' discourse, the one presupposition from the DOE official may actually carry more weight because it is framed differently.

Insinuation. The reporter makes a key insinuation in this text. In the fourth paragraph, he or she notes that "[the turnout] failed to match a turnout of 5,000 demonstrators in 1987, when 2,000 people were arrested on trespass charges." This statement is embedded in a sentence about size comparisons, and so the reporter could argue that it is simply making a statement of fact regarding the size of the demonstration. I would argue, however, that there is also an implied judgment of quality here, too. Most readers of this report, I believe, would be wondering about whether this demonstration was a success or a failure. The report never answers that question directly, but since it describes the event largely in terms of numbers (of protestors and arrests), the reader is likely to interpret the phrase "failed to match" as an insinuation that the demonstration itself was something of a "failure."

Connotations. At the word/phrase level, we can begin our analysis by noting some of the connotations employed by this writer. Although news-reporting discourse is supposed to be "objective," the author of this piece indulges in a number of metaphorical excesses. For example, the actions of the demonstrators are described in distinctly animalistic terms: They "crossed a cattle guard," "crawled across fences," "were taken to holding pens," and "kicked at the guards when they were brought out of the pens"; some were "a bit more aggressive" than others. Verbs like "rallied" and "fanned out" add a faintly militaristic sense: One commonly speaks of **rallying the troops** and having soldiers **fan out in search of the enemy.** Both sets of metaphors serve to trivialize the protestors: The animalistic ones depict the protestors as irrational, while the militaristic ones make them seem violent and thus hypocritical, given their public stance in favor of peace.

Register. Most of this text is written in the standard, semiformal register of news reporting. The only exceptions are the quote from the DOE spokesman and the slogans on the demonstrators' signs, which are somewhat informal. I would argue, however, that these two kinds of exceptions have different effects. The informality of the DOE spokesman's comments serve to put "a human face" on the government officials, making them more sympathetic. The informality of the protestors' slogans, on the other hand, only trivializes their concerns.

Modality. This entire text is written in the indicative mood and past tense, the same modality as that of historical discourse. It reports a series of actions in a highly factual tone, without the slightest trace of uncertainty. There are no instances of conditional, hypothetical, or subjunctive modality in this text. This has the overall effect, I would argue, of making the issues

underlying the protest completely closed to discussion or negotiation. And this makes the events themselves seem more like an ineffectual ritual than a meaningful clash of ideas.

CONTEXTUALIZED INTERPRETATION

As emphasized earlier in this chapter, an essential feature of Critical Discourse Analysis is the full use of context in analyzing texts. In analyzing this particular text, I have already made a number of comments indicating how I think a typical reader might read and interpret it. I have also suggested various tactics used by the writer (whether consciously or not) to put a certain slant on this text. My analysis shows, I think, that the text clearly paints a one-sided picture that favors the government officials and belittles the demonstrators.

But this is not enough. A full discussion of this text should also take into account the larger sociocultural context surrounding it. This could include the place of political demonstrations in American culture, the environmental and health effects of nuclear testing, the proposed United Nations ban on nuclear testing, U.S. military policy in general and the buildup leading to the Gulf War, and so on. It should also include a discussion of the media in influencing American public opinion. A useful reference here is Parenti's *Inventing Reality*. Parenti argues that in a society where the major news media are owned by large corporations and thus expected to turn large profits, reporters are under constant pressure to titillate the public without seriously challenging the power structure. This Gulf Protest report is an excellent example. It entertains the reader by recounting an interesting skirmish in the desert between the government and a large group of citizens, but it does so in an uninformative way that does not challenge the status quo. Several thousand protestors gathered in the desert, they rallied and agitated, and they were either dispersed or arrested—end of story. The serious issues underlying this event are so obscured and trivialized that one has to ask the question: Is this report typical of anti-government protest coverage? If the answer is yes, then one has to ask further questions about the role of the media in informing the public, the role of the media in democracies, the responsibility of the educational system in the face of such ideological manipulation, etc.

Space restrictions prevent my going further into this aspect of CDA, which is unfortunate since this is a crucial part of the whole enterprise, one that distinguishes CDA from other forms of discourse analysis. In any case, contextualized interpretation should be broad enough and deep enough to take into serious account the fundamental premises of a democratic society: equal justice for all, basic fairness, individual freedoms (within reason), guarantees of human rights, government by popular will, etc.

APPLICATIONS TO ENGLISH TEACHING

Critical discourse analysis offers several benefits to the teacher of English. First, it engages students' interest. Many students are interested in current

issues, especially those having cultural or political aspects. CDA deliberately seeks out texts that "matter," the kind that students are confronted with in their daily lives. Even course readings and other educational materials could serve as targets of critical discourse analysis. Second, CDA helps students become better, more discerning readers. It makes broader use of context than other approaches and thus invites students to "look at the big picture." And it encourages students to analyze texts in ways that bring their hidden meanings to the surface. Third, it allows teachers to focus on a variety of textual features and show students how they have real significance for reading comprehension. Concepts like connotation, framing, presupposition, and so on can be taught not just as abstract terms but as important features in the interpretation of real-world texts.

In this chapter, I have tried to give you a fairly detailed idea of how critical discourse analysis is done. Needless to say, such an analysis is far too complicated to assign to students who are just learning the language. Instead, I recommend that teachers acquaint students with CDA in smaller doses. This can be done in either of two ways:

1. Using much shorter texts than the one we just analyzed. Advertisements would be a good possibility, as they are often quite brief; or

2. Taking a longer text (such as our "Gulf Protest" example) but have students focus on only a few kinds of features. To make things easier, teachers could analyze the text beforehand and then direct students' attention to those features that are most salient.

Teachers could start by having students first read the text and then answer questions about it such as "How is this text framed?" or "Point out an example of metaphor in this text." A useful follow-up step would be to ask "Why is it framed in this way?", "What purpose does this metaphor serve?" etc. Once students become familiar with this kind of questioning, teachers could take a different text and just start in with open discussion. Alternatively, teachers could have their students do a written analysis of the text.

In any case, it is important to assign texts that pertain to a subject and culture that students are familiar with. The reader has probably noticed while we were analyzing the "Gulf Protest" text that a good analysis depends heavily on knowledge of the topic and the larger social context. I would therefore recommend that teachers look for English-language texts in local newspapers or magazines, on topics of local interest.

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7

Words and Pictures in a Biology Textbook

Greg Myers

Most genre analysis in ESP has focused on the verbal texts of common genres faced by university students. The assumption seems to be that the pictures, graphs, and tables do not provide such a barrier. But in many fields the visual elements are a crucial part of learning, and they can be just as conventionalized and discipline-specific as the verbal texts. In this paper I draw on current approaches to the relations of words and pictures to consider the range of illustrations in one commonly used molecular genetics textbook.

INTRODUCTION

If you compare any current science textbook to its predecessor from thirty or forty years ago, you are likely to be struck by the vast increase in the number of illustrations. Not only are there more of them, there is a wider range of types, from photographs to diagrams to graphs and tables. This is true even at the university level, where one might expect the students to get along without the pictures, or at least without the colors. We may take the development of pictures in science texts as another example of the growing dominance of the visual over the verbal in our culture as a whole, a vast shift in our systems of representation that applies to ads, product instructions, and journalism as well as to education. Major textbooks may have as much as a fifth of their space taken up by pictures. Clearly these pictures are doing more than just illustrating, supplementing, and breaking up the dense blocks of text and attracting the attention of any reluctant readers. Learning to read them is a part of learning scientific discourse.

One educational danger is that students may think that, however hard they have to work at the written text, what the pictures say is obvious. This

may be a particular problem for the many students for whom English is not their first language, but who must at some stage use textbooks in English. They may turn to the pictures as a shortcut to the meaning of the text, represented in a universal visual language. But this visual set of conventions is no more universal than the English of the written text. It is important that we as teachers stress:

- the complex interrelation of words and pictures in these texts
- the possibility of multiple readings of images
- the different ways the images represent meanings
- the different ways the images signal degrees of reality
- the ways images change over time

Science students need to learn to be as critical in their reading of the pictures as they would be, ideally, in their reading of the words, recognizing the forms of persuasion and the assumptions that support them.

In this paper I will take my examples from Benjamin Lewin's *Genes V,* a major textbook in molecular genetics. Of course I could have chosen physics textbooks with more mathematical formulae, or engineering textbooks with more graphs, or textbooks in zoology or botany that had more photographs and maps to focus on organisms and environments; genetics cannot stand for any of these fields. But molecular genetics is a good field in which to seek examples, because it is rapidly developing new visual conventions, yet the textbooks are still fairly accessible to those of us with no training in the field. The first edition of *Genes* was published in 1983, five years into a huge revolution in the study of genes of higher animals and plants. The version I have, from ten years later, is already the fifth edition, and is enormously changed from the first edition—that is an indication of the pace of change in this field. One reason I chose this book is that the author, Benjamin Lewin, is also the editor of the major journal in the field, and is thus familiar with a wide range of the latest images in research publications.

I have written elsewhere how a discovery in this field was popularized, from the scientific articles, to reviews, to textbooks and to articles for general readers in *Scientific American* and in newspapers. I will focus here on the chapter that deals with that discovery, "that eukaryotic genes may be interrupted." The textbook is a key part of this process of establishing the discovery, conveying some of the basic concepts, language, and imagery of the new research, but eliminating most of the detailed arguments, the evidence, and the names in the original scientific papers. The success of this particular textbook (and others like it) may someday be seen as marking the end of a genet-

ics that focused on whole organisms and their inherited characteristics, and the triumph of a genetics based firmly on the level of molecules.

There have been two main approaches to analysis of pictures in texts; one that treats the pictures as utterances, and the other that treats the utterances as pictures. The approach that treats the pictures as utterances then analyzes them in terms of linguistic pragmatics, such as principles of relevance or cooperation. A picture of a ribosome is the equivalent of "This is a ribosome." In the approach that treats utterances as pictures, both words and pictures are kinds of signs, to be analyzed in terms of the same general semiotic processes. So the letters "r-i-b-o-s-o-m-e" and a picture of a big and a small flattened oval, one on top of the other, can both be conventional representations of an entity in the cell.

I will draw on both pragmatic and semiotic approaches, and give references for those who want to pursue either of them further. From semiotics I borrow some analyses of the relation of words and pictures, and the different ways words and pictures can represent. From pragmatics I borrow the concept of modality, as applied to both utterances and pictures. But rather than give separate reviews of these approaches (which can be found in Hodge and Kress, 1988; Kress and van Leewen, 1988; and Bastide, 1985/1992). I will go over some questions I think teachers and students should ask about the pictures in textbooks.

WHAT IS THE PICTURE DOING HERE?

The first question we need to ask is why the picture is there at all. As anyone who writes textbooks in any field knows, pictures take up space, cost money, and are an incredible hassle at every stage of production. So each picture must be there for a reason. In textbooks, as in articles, there is nearly always an explicit statement of what that reason is, in two places, in the caption above or below the picture, and in the text before a reference to the figure number. These textual references become stereotyped, using just a few verbs for instance, so we need to look more closely at what they direct us to do with the picture. Some examples are in my Table 1.

The verbs in the text and caption suggest several uses for the pictures. The reference, "**Figure 23.1** shows that" [followed by a noun phrase] treats the picture as a specific example of the results. In the third example, "**Figure 23.19** compares," the picture is taken as doing the comparison. In this chapter, the most common verb in the text reference is "summarizes"; the pictures are treated as economical concentrations of large amounts of data, enabling the text to refer to general rules and not to specific species or genes.

text	caption	picture
Recall the terminology for describing the relationship between a gene and its RNA product (see Chapter 6). **Figure 23.1** shows that an interrupted gene consists of an alternating series of **exons** and **introns**:	**Figure 23.1** *Overview*: an interrupted gene consists of alternating exons and introns; the introns are removed by splicing of the RNA transcript, generating an mRNA consisting only of exon sequences. The regulatory region includes the promoter at the 5' end.	diagram: horizontal double helix divided into sectors; then horizontal line; then the horizontal line shortened, with parts looping out to the top; then the line with the two loops removed.
Figure **Figure 23.15** shows a zoo blot using a probe from this region.	**Figure 23.15** A zoo blot with a probe from the human Y chromosomal gene zfy identifies cross-hybridizing fragments on the sex chromosomes of other mammals and birds. There is one reacting fragment on the Y chromosome and another on the X chromosome. Data kindly provided by David Page.	autoradiograph with 20 columns; names of different types of animals along the top; size in kilobases in a scale along the right
Figure 23.19 compares the structure of an immunoglobulin with its gene.	**Figure 23.19** Immunoglobulin light chains and heavy chains are coded by genes whose structures (in their expressed forms) correspond with the distinct domains in the protein. Each protein domain corresponds to an exon; introns are numbered 1-5.	diagram with a yellow horizontal band across the middle that contains a short stylized helix and a longer stylized helix (the two chains); above these the short helix is paralleled by a double helix and another labelled and divided helix; below the yellow band the longer chain is paralleled by another double helix

Table I

Figure 23.15

A zoo blot with a probe from the human Y chromosomal gene *zfy* identifies cross-hybridizing fragments on the sex chromosomes of other mammals and birds. There is one reacting fragment on the Y chromosome and another on the X chromosome. Data kindly provided by David Page.

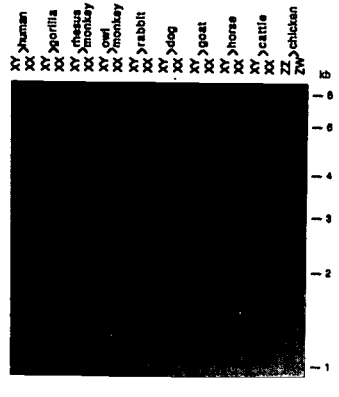

Figure 23.16

The gene involved in Duchenne muscular dystrophy has been tracked down by chromosome mapping and walking to a region in which deletions can be identified with the occurrence of the disease.

Figure 23.17

The Duchene muscular dystrophy gene has been characterized by zoo blotting, cDNA hybridization, genomic hybridization, and identification of the protein.

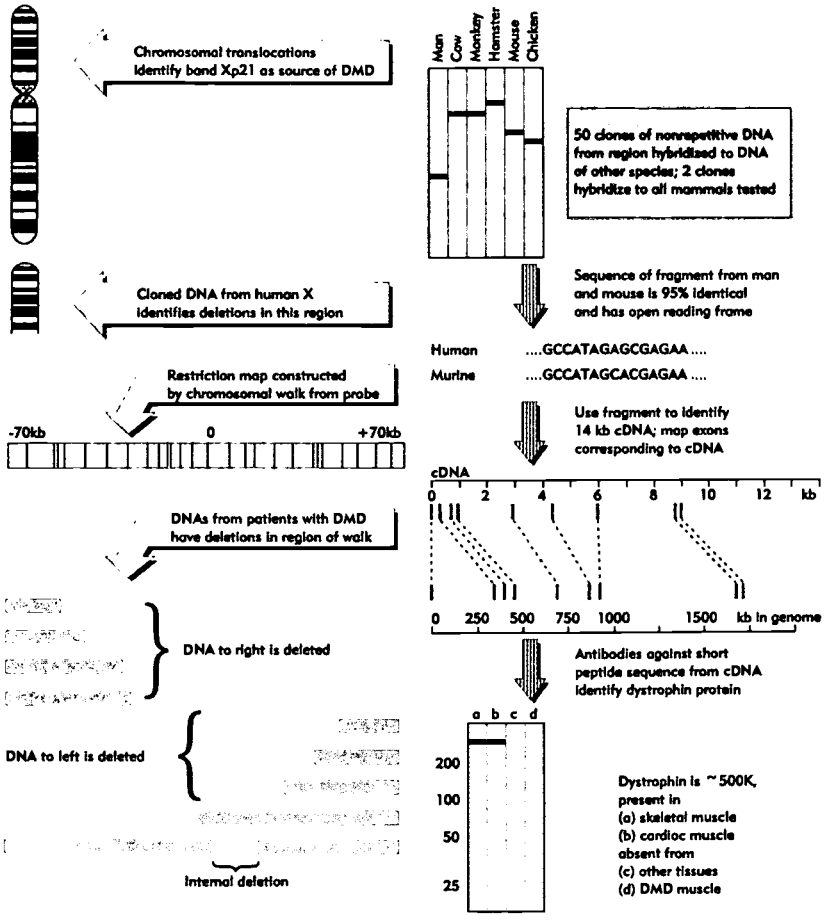

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Figure 1

If we move from the texts to the captions, we see three ways the words direct our reading of the pictures: by providing a **gloss** for decoding specific elements or the whole picture, an **interpretation** of the meaning of the picture in disciplinary terms, or essential **background** information assumed by members of the field. The caption to Figure 23.1 is a gloss; it has three clauses corresponding to the four steps in the diagram; then it has a final detail labeling part of the diagram. The caption to 23.15 is an interpretation that tells us how to interpret these blurry lines as evidence of cross-hybridization; that is, the visual signs are given a meaning in terms of the world of nature. The first sentence of the caption to Figure 23.19 is also an interpretation that puts the message of the diagram in terms of nature; it is followed by a gloss that tells us how to read the different colored sections of the strands. This limited set of uses of pictures is more striking when we consider what pictures do not do in this textbook. They never provide proof; the **show** that is so common here always means **illustrate,** not **demonstrate.**

Why are glosses, interpretations, and background statements needed at all? Each of these pictures has, by itself, many potential meanings. Figure 23.1 could be read as being about straightening out the helix; Figure 23.15 could be read as showing differences between X and Y chromosomes; Figure 23.19 could be read as comparing the different sizes of the two chains. We are used to thinking of language as having multiple meanings, but pictures do too. The textual references and captions constrain our readings, trying to get us to choose one of the many possible interpretations.

Roland Barthes (1964/1976) described **anchorage** of the meanings of the text in the picture. But here we have pictures with many possible meanings, doubly anchored by a caption that acts as a verbal gloss, and a pointer in the text that tells us what kind of statement the text is making. Or perhaps what we have here is more like Barthes' **relay,** the back and forth relation of text and pictures as in a comic book. Here, the text directs us to the picture, which leads us back to the caption, which leads to the picture, which leads back to the text. The kinds of verbs used in the text suggest that the picture always contains the same information as the text, but in different forms. To read these different forms, students must learn visual conventions of representations and certainty to go with their learning of linguistic conventions.

HOW DOES THE PICTURE REFER?

Genes V seems to have a narrow range of illustrations, compared to popularizations or even to other textbooks. There are few photographs, no cartoons, no maps, no portraits of scientists or pictures of equipment. But even within the narrow range of graphs and diagrams that it develops, we can find examples of quite different kinds of signs; the different pictures refer to entities in the world in quite different ways. We can look to semiotics for ways of defining these differences: **indexical** references based on a link to

the referent, **iconic** references based on resemblance, and **symbolic** references based on arbitrary conventions.

Indexical signs are linked directly to the thing referred to. The lip-shaped red print on a cheek or sheet of paper is taken as a sign of a kiss because it is supposed to be the mark lipstick leaves behind. Figure 23.15, of Figure 1, is an autoradiogram of the results of an experiment in which one bit of the human genome was used as a probe to pick out bits from the DNA of various animals. Though there are a number of steps in this procedure, a biologist thinks of the fragments as making this picture themselves—that is why it is an **auto**radiogram. The fragments have migrated in the gel according to their size, which is why there can be the scale of kilobases on the right. Then the radioactively labeled fragment binds with some sizes of bits on the gel and not others. These labeled bits then show up on the photographic paper put over it. Even the slight blurriness that accompanies this method testifies to the direct link of sign and referent. Such images were very effective in scientific articles when the discovery was first announced, because they demonstrated the results as well as reporting them. They are relatively uncommon in textbooks, where such demonstration is not always needed, and a more stylized representation may convey the information more simply.

Another way a picture can refer to something is by resembling it, as a photograph resembles a person; these are referred to as **iconic** signs. In Figure 1, the drawing of the chromosome with bands in 23.16 says *chromosome* because of the resemblance, however stylized. Throughout the book there are standard icons of DNA as helix, of mouse, fly, tRNA molecule; they are part of what assures the student of the book's accessibility. Once the resemblance is established, the image can be conventionalized and will still be read unambiguously. In Figure 1, the pictures at the top and bottom of 23.17 come without the blurriness, and without the scales of sizes. We do not read them for particular information; we may read them as standing for "do an autoradiogram at this stage," not for the results of a particular experiment.

Finally, a **symbolic** sign can refer to a referent because of some arbitrary convention, treated as an agreement between people. The usual examples are from language, where words generally have an arbitrary relation to things. The letters used to symbolize the bases of DNA in the middle of 23.17 are purely conventional signs: **G** is not in any way shaped like Guanine, nor is **C** like Cytosine, not **T** like Thymine. The names were given for quite logical reasons, I suppose, but not for visual resemblance. The letters are just the remnants of those names. A map showing a sequence as a string of letters is entirely arbitrary; there is no resemblance between the twisted coils of DNA and this neat linear and measured arrangement. The graphs through the chapter are also arbitrary—the length of the purple rectangle correlates with, say, the number of exons of a given length, but it does not resemble the exons, nor is it directly associated with them.

These three ways of referring—as an index, an icon, or a symbol— offer pretty good categories for most purposes. But in any real example one usually sees some blurring of the distinctions. For instance, the use of **CATG** for the bases is arbitrary, and so is the convention that a single strand of DNA is shown as a horizontal line with the 5' end at the left. But a biologist would argue that the linear nature of DNA is related to an important natural feature of the molecule, abstracted here but nonetheless natural—it can be seen as a sequence rather than as a ratio or a shape. The conventional way to read **CATG** is from right to left, horizontally, but that it is read is, for a biologist, a natural fact. On the other hand, an iconic or indexical sign can become conventionalized as a symbol. For instance, the same drawings of a mouse and of a fly appear rubber-stamped throughout all the diagrams of the book whenever these standard organisms for genetic experiments are referred to; when they need to show that the result of an experiment is a dead mouse, the same rubber-stamp is used upside down. This is no longer being read as a picture resembling a mouse, but as a conventionalized sign.

Signs, therefore, can be on the border between two kinds of representation, and can be conventionalized so that they are read as symbolic, not iconic. Also, any one figure can incorporate examples of different categories of signs. For instance Figure 1 includes indexical, iconic, and symbolic signs, without the reader feeling that it is incomprehensibly heterogeneous.

If the distinctions between indexical, iconic, and symbolic signs blur, why insist on them? Usually my purpose is to make readers more critical of the indexical and iconic end of the scale. The power of these signs comes from their assumed naturalness, but they are only natural if one ignores the complex means used to produce them, whether by gel electrophoresis or by photography. But I think with textbooks the danger is somewhat different. Students may focus on the symbolic function of signs, missing the ways symbols are created and used, in the discipline and in their own learning. Broadly, we can see a movement in the scientific literature from indexical signs (in the first reports) to iconic (in popularizations and textbooks) to conventionalized symbols. And it may be that we see a movement in each major student's career, from icons to symbols.

HOW REAL IS IT?

After these comments on the processes of representation with all pictures treated as signs, it may seem naive to ask how real the various images claim to be. But images do come with marks of greater and less certainty. Hodge and Kress (1988), and Kress and van Leeuwen (1988), have developed the idea of a visual modality, like our use of **might** or **could** or **probably** in language. So, for instance, the image in 23.15 with or without its caption, stakes a claim to being a statement of evidence, quite separate from the experimenter's interpretation, and is thus more certain. The drawings of an autoradiogram in 23.17, without all the grainy detail and without the scale, make

no such claim. No one would consider it cause for complaint if the bands in 23.17 were not just as depicted, while we would complain if the bands in 23.15 were moved. Gilbert and Mulkay (1984) have pointed out how hard it is to suggest indefiniteness and uncertainty in pictures. One way is to reduce the images to cartoon simplicity, cutting out the details of a photograph, autoradiograph, or plot of data points.

Another element in this modality is time. The most certain images are also those tied to a moment in the past. A photograph or an autoradiogram is a unique result of a single experiment (thus the textbook's copyright acknowledgment to the researcher seems appropriate). The diagrams, on the other hand, suggest that what is shown is a timeless, general molecule and process. Figure 23.15 shows an actual series of experiments in one image. The arrows in 23.17 show an idealized research strategy that can be repeated over and over with different molecules into the future. In these terms, there is a very strong tendency in the textbook towards the conventionalized and timeless images. Popularizations, on the other hand, stress the unique event, the lucky moment at which nature was revealed, and they may value the first images for their news value.

This takes us back to the relation of pictures to words. The words seem invariably to tie the picture to the present tense of idealized scientific fact. This is true even for historic photographs. The questions of the production of these images, which once filled paragraphs of a Methods section, are now forgotten. Images that usually have different kinds of modality are composed together on the example page into a montage in which such distinctions are lost.

CHANGES IN CONVENTIONS OF REPRESENTATION

One reason to make these distinctions between types of textual links to pictures, types of referring, and levels of certainty is that they enable us to compare different ways of representing knowledge. We can see this in two kinds of comparisons, from genre to genre as the fact develops, and within one genre over time. In each case, there is a development from one end of the scale to the other.

One key change in the development between genres—research article to review article to textbook and popularization—is the change in the status of claims as facts. This change also affects the relation of words and pictures. Latour and Woolgar (1979/1986) present a scale of facticity, in which competing researchers try to push a claim up and down, especially through the use of attribution: "Watson and Crick claimed that DNA is a double helix" vs. "DNA is a double helix" vs. "the strands unwind..." (in this last instance, the point is that one does not even have to mention the helical structure; it is so much a part of the discipline). A scientific claim develops from the weakened, contingent form of its first statement and debate around it to the unmodified certainties of fact, or it gets pushed back to being a mere claim once made by someone.

I have written elsewhere about the stages of popularization of the discovery of the split gene. Here I need only note that from article to textbook, we move from pictures that demonstrate (providing evidence), to pictures that illustrate (showing, summarizing, defining). We move from indexical pictures, like the autoradiogram, to iconic pictures, showing transcription at work, to more symbolic figures in which the process is reduced to the intersection of strings of letters. This visual process is a complement to the linguistic production of a fact. Even if the popularizations sometimes revive the original images produced by the thing, they now have a different meaning — they are not read in detail, but have the meaning of "historic image of split genes" along with portraits of the scientist, part of the textual museum of science. The textbook, in comparison to both the first research articles and the popularizations, excludes most of the specific, local, contingent images to generalized diagrams of processes and summaries of comparisons.

Another kind of development is in the book, *Genes*, itself. Its editions have changed in size and in the use of color. But the editions have also changed as what was a hot research area, for example, *split genes* becomes a taken-for-granted fact to be passed on so that readers can understand the latest work. Subsequent editions include more or less the same chapter, but succeeding chapters play a different role in the knowledge of the field. We can see this in comparing the types of figures used in the corresponding chapters, from electron micrographs and autoradiographs at the iconic/indexical end, to bar graphs and tables at the symbolic end. Most of the images in both editions are conventionalized diagrams of sequences. But as the field develops, the imagery becomes more and more conventionalized, less based on direct images and resemblance (which make up 16 of the 26 figures in *Genes I*), more based on purely quantitative and linear representations of disciplinary categories (which make up 14 of the 23 figures in *Genes V*).

The pedagogical effect of these changes can be seen in comparing figures with similar functions in the first and fifth editions. Both editions begin with the discovery of split genes. In *Genes I*, the background section is complemented by a reproduction of one of the original electron micrographs, and then by a diagram telling us with letters and arrows how to read the split genes in the wiggles. The caption says "one of the original electron micrographs" and thanks Philip Sharp. The drama of discovery is still part of the fact. In *Genes V*, the discovery is still mentioned. But there are no images at all of what split genes might look like. Instead the first figure in the chapter, as I have noted, is the conventionalized linear representation of the DNA. The only suggestion that this diagram is to be taken as looking at all like something in nature is the irregularity of the squiggles in the introns. As a fact is incorporated into the field, the circumstances of the discovery, the name of the discoverer, and just what the

thing looked like, all become submerged. A student coming to these more conventionalized representations must work that much harder to learn the visual conventions of the discipline and to attach them to the things the discipline studies (here, transcription and translation of DNA) and the practices through which it studies these things (here, restriction enzyme fragmentation, probes, autoradiographs, sequencing). In simple terms, a student is less and less likely to have come across these conventions in secondary school, or in other science subjects; they are learned along with the written language of the specific discipline.

IMPLICATIONS FOR TEACHING

Why is this important to our students? The reader may or may not share my view that science students should be taught about the social processes underlying science. But even if only interested in facilitating students' entry into the field, teachers may want to make explicit to students some of the ways of interpreting pictures. Students should always ask why the picture is there, how it refers, and how certain it is. Teachers can bring this out without doing all the semiotic and linguistic analysis I have done here. Rather than adding Roland Barthes' terminology to their troubles; teachers can just ask some simple questions. What would the book lose if this figure were deleted? What information does it add? Why choose this form of presentation, say, a diagram rather than, say, a photograph? What different captions are possible? Why is the visual placed in that particular portion in the text? What conventions do readers use to interpret it? Students might try explaining it to someone outside the discipline. Or students may just try turning it upside down—it is usually only the conventions of reading that might make this disorienting. (It is disorienting to turn a map or globe upside down because we have become familiar with the convention of North = up, and the geo-political perspective that goes with this orientation). The aim of such questioning is not to make it more difficult for students to learn conventions of a new discipline, but to raise their consciousness as to how the conventions work.

Here I have focused on just one book from one discipline. Different disciplines have different initiations into the iconography; for instance, geology starts its initiation earlier, and makes it more explicit, perhaps because geologists realize the importance of the visual in their discourse. Chemistry presents some visual conventions, such as the periodic table and the chemical bond, at the earliest level. Even within molecular genetics, there have been several different approaches to introducing the field, and each approach has a different place for the visual. This is the same problem that teachers of languages for academic purposes always have; conventions vary across disciplines. With the visual language of a discipline, as with its written language, we can start by making students aware of the differences and make explicit how they must deal with these differences.

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8

I Think That Perhaps You Should: A Study of Hedges in Written Scientific Discourse

Françoise Salager-Meyer

Hedging is a linguistic resource which conveys the fundamental characteristics of science of doubt and skepticism. The first part of this paper considers three views of hedges: a. threat minimizing strategies used to signal distance and to avoid absolute statements, b. strategies to accurately reflect the certainty of knowledge and c. politeness strategies in the social interactions and negotiations between writers and editors. The second part of the paper examines the use and frequency of hedges according to genre and to the different (rhetorical) sections of scientific papers. The final part of the paper presents a taxonomy of hedges with a few practical exercises (sensitization, translation and rewriting exercises) which ESP practitioners could use to help their students become aware of these subtle and often neglected language forms.

INTRODUCTION: THE CONCEPT AND IMPORTANCE OF HEDGES

One of the most important aspects of scientific discourse is to weigh evidence and draw conclusions from data. Fundamental characteristics of science are uncertainty, doubt and skepticism. Stubbs (1986) argues that all sentences encode a point of view and that academic texts are no different in containing the author's presence: Scientists inevitably indicate their attitude in their writings. Because science is not the coolly objective discipline as asserted in many textbooks and scientific style guides, academic writing cannot be considered as a series of impersonal statements of facts which add up to the truth. Moreover, research from a variety of disciplines (e.g., sociology of sci-

ence) has revealed ways in which academic discourse is both socially situated and structured to accomplish rhetorical objectives.

Linguistically these objectives are realized as **hedges**—mostly verbal and adverbial expressions such as *can, perhaps, may, suggest,* which deal with degrees of probability. Hedges can be considered as the interactive elements which serve as a bridge between the propositional information in the text and the writer's factual interpretation. As Skelton (forthcoming) remarks, hedges could be viewed as part of the larger phenomenon called **commentative potentials** of any language. Natural languages are reflective: not only saying things, but also reflecting on the status of what they say.

In one of the first explorations of this phenomenon, Lakoff defined hedges as words or phrases, "whose job is to make things fuzzy or less fuzzy" (1972: 175), implying that writers are less than fully committed to the certainty of the referential information they present in their writings. One could state a proposition as a fact (e.g., "This medicine will help you recover quickly"), or one could use a hedge to distance oneself from that statement, e.g., "I believe that this medicine could help you recover quickly."

Research on LSP (Languages for Specific Purposes) has repeatedly shown that hedges are crucial in academic discourse because they are a central rhetorical means of gaining communal adherence to knowledge claims. Indeed, scientific "truth" is as much the product of a social as that of an intellectual activity, and the need to convince one's fellow scientists of the facticity of experimental results (or of the correctness of a specific point of view) explains the widespread use of hedges in this type of discourse. Hyland (1994), for example, asserts that hedging exhibits a level of frequency much higher than many other linguistic features which have received considerably more attention. Skelton (1988) argues that epistemic comments are equally common in the arts and sciences, occurring overall in between one third and one half of all sentences. Along the same lines, Gosden (1990) reports that writers' perception of uncertainty realized through modality markers constitutes 7.6% of grammatical subjects in scientific research papers. More specifically, modals appear to be the typical means of marking epistemic comment in research papers: Adams Smith (1984) found that they make up 54% of all the forms used to denote epistemic modality; Butler (1990) states that they account for approximately 1 word in every 100 in scientific articles; Hanania and Akhtar (1984) report that they make up 8.1% of all finite verbs (*can* and *may* being the most frequent); finally, modals were also found to constitute 27% of all lexical hedging devices in Hyland's (1994) corpus of biology articles.

FOUR REASONS FOR HEDGING

1. The most widely accepted view is that hedging is the process whereby authors tone down their statements in order to reduce the risk of opposition and **minimize the "threat-to-face"** that lurks behind every act of communi-

cation. This position associates hedges with scientific imprecision and defines them as linguistic cues of bias which avoid personal accountability for statements, i.e., as understatements used to convey evasiveness, tentativeness, fuzziness, mitigation of responsibility and/or mitigation of certainty to the truth value of a proposition. In this view, hedging is what Skelton (forthcoming) calls "the politician's craft," not only a willed mitigation, but an obfuscation for dubious purposes. Kubui (1988) and Fand (1989), for example, state that hedges are used to signal distance and to avoid absolute statements which might put scientists (and the institution they work at) in an embarrassing situation if subsequent conflicting evidence or contradictory findings arise. The following sentence, which ended a paper in a university conference illustrates this use of hedging:

> Our results *seem* to *suggest* that in Third World countries the extensive use of land to grow exportation products *tends* to impoverish these countries' populations even more.

The epistemic verb *seem* combined with the modal lexical verb *suggest* allows the speaker to avoid making a categorical statement and to negotiate some degree of flexibility for his claims.

2. Salager-Meyer (1993) and Banks (1994) claim that the exclusive association of hedges with evasiveness can obscure some important functions of hedging, and that expressing a lack of certainty does not necessarily show confusion or vagueness. Indeed, one could consider hedges as **ways of being more precise in reporting results.** Hedging may present the true state of the writers' understanding and may be used to negotiate an accurate representation of the state of the knowledge under discussion. In fact, academic writers may well wish to reduce the strength of claims simply because stronger statements would not be justified by the experimental data presented. In such cases, researchers are not saying less than what they mean but are rather saying precisely what they mean by not overstating their experimental results. Being too certain can often be unwise. Academics want their readers to know that they do not claim to have the final word on the subject, choosing instead to remain vague in their statements. Hedges then are not a cover-up tactic, but rather a resource used to express some fundamental characteristics of modern science (uncertainty, skepticism and doubt) which reveal the probabilistic nature science started acquiring during the second half of the 19th century. (During the 17th and the 18th centuries and the first half of the 19th century, science was more deterministic). Moreover, because of the close inter-connection between different scientific fields, no scientist can possibly claim to wholly master the field of knowledge of a given discipline. The *seem/suggest* combination of the example above could display the speaker's genuine uncertainty and thus allow him to offer a very precise statement

about the extent of his confidence (or lack thereof) in the truth of the propositional information he presented.

3. Myers (1989) argues that hedges are better understood as **positive or negative politeness strategies,** i.e., as "sophisticated rational strategies" used to mitigate two central positions expressed in scientific writing: to present claims (or findings) pending acceptance by the international scientific community, and to deny claims presented by other researchers. Indeed, to express an opinion is to make a claim (particularly central claims in "establishing a niche" to use Swales' expression (1990a: 141) and to make a claim is to try to impose one's opinion on others. For example, in the following double-hedged statement:[1]

> Our analyses indicate that higher doses of fish oil can benefit individuals with untreated hypertension.

the authors are presenting a claim to the scientific community while trying to convince their readers of the relevance of their findings. But, in doing so, they remain somewhat vague because they cannot claim to have the final word on the subject. In the social interaction involved in all scientific publishing, hedges permit academics to present their claims while simultaneously presenting themselves as the "humble servants of the scientific community" (Myers, 1989: 4). As soon as a claim becomes part of the literature, it is then possible to refer to it without any hedging, as the following example illustrates:

> Influenza is the most important viral infection of the respiratory tract.

Thus, because new results/conclusions have to be thoughtfully fit into the existing literature, hedging is not simply a prudent insurance against overstating an assertion, but also a rational interpersonal strategy which both supports the writer's position and builds writer-reader (speaker/listener) relationships. A hedged comment such as, "I think that perhaps you should have analyzed the benefits these exportation products could have on foreign currency increases," could reflect a polite and diplomatic disagreement, or it might also display genuine uncertainty on the speaker's part (definition 2).

4. Banks (1994) argues that a certain degree of hedging has become conventionalized, i.e., that the function of hedges is not necessarily to avoid face-threatening acts (definition No. 1), but simply to conform to an **established writing style**. This established style of writing arose as a consequence of the combination of the needs and stimuli mentioned in defini-

tions 1, 2 and 3 above. A totally unhedged style would not be considered seriously by journal editors.

It should be made clear at this stage that it is difficult to be sure in any particular instance which of the four above-mentioned concepts is intended nor need we assume that the authors of hedged utterances always know why they hedge their statements in the first place. As we explained elsewhere (Salager-Meyer, 1994), hedges are first and foremost the product of a mental attitude, and decisions about the function of a span of language are bound to be subjective.

TAXONOMY OF HEDGES

Although not totally comprehensive nor categorically watertight, the scheme below represents the most widely used hedging categories, at least in scientific English. Typically, hedging is expressed through the use of the following "strategic stereotypes":

1. **Modal auxiliary verbs** (the most straightforward and widely used means of expressing modality in English academic writing), the most tentative ones being: *may, might, can, could, would, should:*

- Such a measure *might* be more sensitive to changes in health after specialist treatment.
- Concerns that naturally low cholesterol levels *could* lead to increased mortality from other causes *may* well be unfounded. (Observe the cumulative hedging effect: the main and the subordinate clauses are both hedged.)

2. **Modal lexical verbs** (or the so-called "speech act verbs" used to perform acts such as doubting and evaluating rather than merely describing) of varying degree of illocutionary force: *to seem, to appear* (epistemic verbs), *to believe, to assume, to suggest, to estimate, to tend, to think, to argue, to indicate, to propose, to speculate.* Although a wide range of verbs can be used in this way (Banks, 1994), there tends to be a heavy reliance on the above-mentioned examples especially in academic writing:

- Our analyses *suggest* that high doses of the drug can lead to relevant blood pressure reduction. (Here too we have a cumulative hedging effect)
- These results *indicate* that the presence of large vessel peripheral arterial disease may reflect a particular susceptibility to the development of atherosclerosis. (Same cumulative hedging effect as above)
- In spite of its limitations, our study *appears* to have a number of important strengths.
- Without specific training, medical students' communication skills *seem* to decline during medical training.

3. **Adjectival, adverbial** and **nominal modal phrases:**
3.1. probability adjectives: e.g., *possible, probable, un/likely*
3.2. nouns: e.g., *assumption, claim, possibility, estimate, suggestion*
3.3. adverbs (which could be considered as non-verbal modals): e.g., *perhaps, possibly, probably, practically, likely, presumably, virtually, apparently.*

- Septicemia is *likely* to result, which might threaten his life.
- *Possibly* the setting of the neural mechanisms responsible for this sensation is altered in patients with chronic fatigue syndrome.
- This is *probably* due to the fact that Greenland Eskimos consume diets with a high content of fish.

4. **Approximators of degree, quantity, frequency and time:** e.g., *approximately, roughly, about, often, occasionally, generally, usually, somewhat, somehow, a lot of.*

- Fever is present in *about* a third of cases and sometimes there is neutropenia.
- Persistent subjective fatigue *generally* occurs in relative isolation.

5. **Introductory phrases** such as *I believe, to our knowledge, it is our view that, we feel that,* which express the author's personal doubt and direct involvement.

- We *believe* that the chronic fatigue syndrome reflects a complex interaction of several factors. There is no simple explanation.

6. **"If" clauses,** e.g., *if true, if anything*

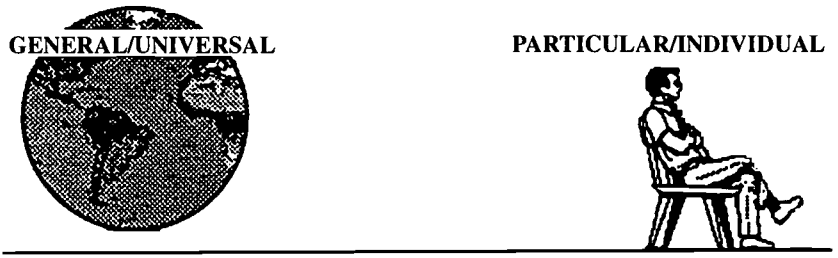
- *If true*, then, our study contradicts the myth that fishing attracts the bravest and strongest men.

7. **Compound hedges**. These are phrases made up of several hedges, the commonest forms being: 1. a modal auxiliary combined with a lexical verb with a hedging content (e.g., *it would appear*), and 2. a lexical verb followed by a hedging adverb or adjective where the adverb (or adjective) reinforces the hedge already inherent in the lexical verb (e.g., *it seems reasonable/probable*). Such compound hedges can be double hedges (it *may suggest* that; it *seems likely* that; it *would indicate* that; this *probably indicates*); treble hedges (it *seems reasonable* to *assume* that); quadruple hedges (it *would seem somewhat unlikely* that, it *may appear somewhat speculative* that), and so on.

As can be seen then, all the forms presented above imply that the statements in which they appear contain personal beliefs based on plausible reasoning (or empirical data). Without these "strategic stereotypes," readers would imply that the information conveyed pertains to universally established knowledge.

HEDGES ACCORDING TO GENRE AND RHETORICAL FUNCTION

The literature on hedging has also revealed the distributional variability in academic prose, the difference being attributable to variation in the communicative purpose not only of different genres, but also of different sections within a text. Salager-Meyer (1993, 1994) showed that medical editorials and review articles are more heavily hedged than research papers and case reports per se. She argues that the stronger the generalization and claim to universality (review papers and editorials), the more hedged the discourse. On a scale from general to particular (or from universality to individuality), editorials and review articles, which evaluate, persuade or argue and appeal to a broad audience, will have many hedged statements. Research papers, which both inform and argue, will be in the middle; and case reports will be at the other end of the scale as illustrated in the figure below:



Because case reports are clinical observations of a single (or a few) generally rare and even unique entities, they are almost purely descriptive and, therefore, relatively unhedged. Typical of case reports are short-story and anecdote-like sentences such as the following:

A previously well 4-year-old boy fell about one meter from a wall and struck the back of his head on concrete. He was not knocked out and got up immediately and continued playing. He did not complain of headache and visual disturbance but shortly afterwards he vomited and his mother took him to the accident and emergency department.

By contrast, review articles collect, select, order and interpret the huge outpouring of scientific reports and present relevant (and often controversial) findings and generalizations in a form useful for researchers outside the immediate group working on a given problem. This is why in almost every one of the review paper statements, there is, as Bazerman and Paradis say (1990: 60), "some qualifying adverb or adjective that makes the statement more cautious":

- The panel *suggests* that all adults 20 years of age and over *should* have non-fasting serum cholesterol measured at least once every 5 years.
- This *seems* to support the possibility that depression *may* be an important clinical feature in monosymptomatic hypochondriacal psychosis. (Observe the cumulative effect of hedging: both the main and the subordinate clauses are hedged.)

The frequency of occurrence and types of hedges are not evenly distributed throughout different sections of academic papers (Banks 1994, Salager-Meyer 1994). The typical introduction section of academic papers (Swales, 1990a) includes, inter alia, a survey of the field. It is a hypothesis-making opening section where the unknown or poorly understood is delineated and where scientists mention (mostly with hedge-attributing verbs such as *to indicate, to seem, to suggest*) previous research which bears on the same issue as the one their article deals with.

- In most cases a psychiatric disorder is involved in the chronic fatigue syndrome and it has been *suggested* that depression may be a secondary phenomenon.
- Although earlier studies *indicated* that infants who received solids at an early age were heavier than those who were introduced to solids at the recommended time, more recent reports have been unable to confirm this association.

The writers use hedging to convince the reader that work remains to be done in their area of inquiry (what Swales refers to as "establishing a niche" 1990a: 145), i.e., to suggest that the "niche" they wish to establish does indeed exist. The questions raised in the *Introduction* section will be

answered in the rest of the paper, as what was up to now uncertain is about to be made certain. In the *Introduction* sections of academic papers, then, hedges serve the purpose of building arguments to support the researchers' own work. As described in Skelton (1988), the *Introduction* of a scientific article is almost as tentative as an Arts paper.

Hedges appear least in the almost purely factual (i.e., unhedged) *Methods* section, the least discursive and commentative section of academic papers where confirmatory statements are the rule, e.g.,

- We used data from 31,561 computer files and a computer model was designed to test our risk program.
- We recruited 671 infants born after 38-45 weeks' gestation.

The *Results* section is also characterized by a relative absence of hedging devices. When they do appear, however, they tend to foreshadow the discussion which will follow:

- This finding strongly suggests that these CNS sites contain neurons and fibers.
- One explanation could be that basal glycemia was 151 vs. 127 mg/dl for NA.

The abrupt change from objective recounting (Methods and Results sections) to subjective discussion (*Discussion/Conclusion* sections) is reflected in the much higher incidence of hedging in the *Discussion/Conclusion* sections of academic papers. It is in these last two discursive and speculative sections that authors put forward controversial ideas or interpretations and hence most feel the need of protecting themselves from counter argument or other forms of attack:

- Repressed homosexuality *may* have played a role in generating symptoms in some patients.
- Our six psychotic patients had *possibly* quite different aetiologies.
- The *probability* of multiple sclerosis is likely to be much less in clinically atypical cases.
- Although it is attractive to *suggest* that the increased frequency of cervical neoplasia in smokers may be related to another factor, this is by no means proven.

PEDAGOGICAL JUSTIFICATION

In spite of the widespread use of hedges in academic writing, this phenomenon is largely ignored in pedagogical materials geared to non-native

speakers of English (NNSE). In an excellent review and critical analysis of ESP/EAP textbooks, Hyland (1994) concludes that in most ESP course books explanations on epistemic strategies are inadequate, the practice material is limited, alternatives for modal verbs are omitted, and empirically-based information concerning the sociolinguistic rules of English scientific discourse communities is absent. In other words, the important pragmatic area represented by hedging devices is under-represented (not to say neglected) in most ESP course books and style manuals. As Hyland (1994: 244) states, "the overall picture indicates a need for greater and more systematic attention to be given to this important interpersonal strategy."

There are two clear pedagogical justifications for explicitly addressing hedging as an important linguistic function and for assisting learners (even those in the earliest stages) to develop an awareness of the principles and mechanics of its use.

1. It has been stated that foreign language readers frequently tend to give the same weight to hedged (provisional or hypothetical) statements or interpretation as to accredited facts. Since comprehending a text entails both decoding information and understanding the writer's intention, it is of prime importance that students be able to recognize hedging in written texts.

2. The appropriate use of hedging strategies is a significant communicative resource for student writers at any proficiency level, and it plays an important part in demonstrating competence in a specialist register. Crismore and Farnsworth (1990: 135) go as far as saying that hedging is the mark of a professional scientist, "one who acknowledges the caution with which s/he does and writes on science." The problem is that proficiency in that pragmatic area appears to be notoriously difficult to achieve in a foreign language (Cohen and Tarone, 1994). Hyland (1994) remarks that the use of modality presents considerable problems for linguistically unsophisticated writers of academic texts, while Bazerman (1988) has noted that a pragmatic failure to modulate successfully represents a feature of the work of L2 students at Western universities. Skelton (1988) further remarks that even those students who have a good control over the grammar and lexis of English write in a direct/unhedged fashion. Student writers (especially NNSE) should then be made aware of the fact that unhedged conclusions are open to criticism and could even be considered as intellectually dishonest.

READING AND WRITING CLASSROOM EXERCISES

In order to empower NNSE academics to express (and recognize) doubt where there is no certainty, to know how and when to mediate their claims,

and to use these techniques successfully, I propose the following reading and writing classroom exercises (presented here below in increasing order of difficulty). The hope is that these exercises will enable learners to use their limited linguistic resources to achieve greater delicacy of meaning. To enhance students' motivation to perform the tasks, I recommend using authentic and challenging materials from their own field of study, which is one of the best ways of developing our students' academic "meaning potential."

The approach followed in the exercises below is interdisciplinary in nature, combining reading comprehension, writing and sociolinguistic awareness.

Reading exercises

1.1. Ask students to circle tentative verbs and modal auxiliaries in a passage:

> - We conclude that seamen *seem* to be a special group with a high risk of fatal accidents. This *might* be because the men who choose to be seamen are accident prone. The occupation is more *likely* to be having an effect because the mortality from several kinds of accidents appeared to be related to length of employment. We *believe* that to prevent accidents at work as well as during leisure time, attention *should* be focused not only on technical devices but also on seamen's lifestyle in general.

1.2. Ask the students to underline all the hedges they can find in a passage and to justify their use. This exercise generally leads to class discussion on the manner in which scientists mitigate and modulate their discourse. Moreover, it gives students a chance to articulate the fact that hedging is a human enterprise whose purpose is to limit the degree of certainty about a fact. Students can also state how a given hedging tactic in English would be rendered in their native language.

1.3. Give the students a reading sample with several reporting verbs and have them identify the different speech acts involved (e.g., making a claim, disagreeing with a colleague's opinion, suggesting further research). Then ask the students to explain which verbs express neutrality, opinion, uncertainty, tentativeness or fact. This exercise will help the students to identify subtle language forms, e.g., to distinguish between weak and strong reporting verbs or to identify mitigation (e.g., *a somewhat interesting finding*). The following sample (drawn from the *Discussion* section of an article on smoking and cervical cancer) illustrates the point:

> - Our results *show* a relation between smoking habit and the proportion of DNA modification in cervical epithelium. The presence of modification in cervical epithelium and the correlation with smoking habit strongly *suggests* that the modifications are a consequence of exposure to tobacco compounds... Women with high proportions of DNA modifications *may* have an increased susceptibility to cervical cancer. Our study then contradicts the results of the International Agency for Research on Cancer (1986)

which *claimed* that there was not enough evidence to conclude that smoking is a cause of cervical cancer. Prospective studies of women with a high proportion of modified cervical DNA *should* be carried out to establish the risk.

Writing exercises

In preparing a written statement, ESP students have to choose speech acts that are socioculturally appropriate (e.g., knowing how to disagree with the results of previous research) and they need to know which strategies or semantic formulae are generally used for a speech act such as "disagreement." The main purpose of the following exercises is to help the students to gain some control (in their written assignments) over the language forms that are considered socioculturally appropriate at a given level of formality.

2.1. Present students with utterances containing facts and ask them to rewrite the sentences with tentative verbs of interpretation/opinion (or vice versa, to present students with opinion or comment utterances and ask them to rewrite the sentences with assertive verbs). The following passage could serve as an example:

- Middle insomnia is (*may* be) associated with exacerbations of illness in patients with rheumatoid arthritis. Patients with fragmented sleep experienced (*seemed* to experience) increased fatigue and joint pain. This is (*appears* to be) consistent with findings in animals and humans that sleep deprivation reduces (*tends* to reduce) the pain threshold. These findings show (*indicate*) that it is (*may* be) possible to treat pain and insomnia concurrently.

2.2. Explain to the students that when they report their own study, they should not sound too sure of the benefits (either practical or theoretical) of their work, without undermining the importance of their research. Students should know, for example, that tentative verbs such as *to appear, to seem, to suggest* can be used instead of the modals *may, can, could* to generalize from results when presenting their findings and to emphasize the speculative nature of their statements.

2.3. Instruct students to use tentative verbs when necessary (e.g., *suggest, argue, indicate, tend to*) when citing the work of others, i.e., when they write the review of literature of their papers:

- The questionnaire called Nottingham Health profile has been criticized because it *tends to* overlook some very important factors.

Indeed, the task of performing a critical review of the work of others (while offering one's own views) is culturally difficult for non-native speakers of English. Cohen and Tarone (1994) report that when confronted with such a task, NNSE simply present views without interpretation, i.e., without taking

a stand on the matter. They simply opt out of performing that task. Students need to have at least some control over the linguistic forms or structural conventions that are considered sociolinguistically appropriate when performing speech acts in an academic context.

2.4. This exercise—which could first be done in the students' native language and then in English—is more appropriate with intermediate/advanced students. It consists of presenting two (or more) articles (approximately 1,500 words in length) with conflicting views on a challenging academic theme and in asking students to express their opinion about each article. I believe that this exercise could also help develop the students' critical facilities, especially in contexts where the learners—because they come from a culture where the infallibility of the written word is deeply ingrained—consider it heretical to criticize and question what is written.

CONCLUSION

Hedging is a human enterprise, a resource which is inherent in common language. In our daily interactions with our peers, we, human beings—as social beings, par excellence—feel the need to modulate our speech acts in order to guarantee a certain level of acceptability and the possibility of coexistence. The same remark applies to scientific language which is a product of human relations.

The "strategic stereotypes" called hedges permit language users to say something and to comment on what they are saying. From the repertoire of linguistic forms at their disposal, scientists—as any other language user—resort to those forms which better fit their communicative purposes and which they think will allow them to gain communal adherence and warrant the highest degree of acceptability for the claims they present to the world's store of knowledge, i.e., to the scientific community at large.

It would be somewhat erroneous to consider hedges as linguistic devices merely used to convey fuzziness or vagueness. Indeed, because 18th and 19th century deterministic science evolved (in the 20th century) into a probabilistic science, hedges should also be viewed as devices (or discourse strategies) used to reflect not only fundamental characteristics of modern science (skepticism, uncertainty and doubt), but also the true state of the writers' understanding and state of knowledge. Last but not least, the mild speech conveyed by hedges allows researchers to present themselves as cautious, coy, humble and modest servants of their discipline, and to diplomatically negotiate their claims when referring to the work of colleagues and competitors. In other words, hedges enable academics to anticipate peers' criticism and to take oratory precautions, i.e., to participate in the complex game of social interaction and negotiations involved in all scientific publishing where bold and presumptuous statements are frowned upon.

The appropriate use of hedging strategies for academic argumentation is a significant resource for student writers and plays an important part in demonstrating competence in a specialist register. Materials writers and LSP practitioners therefore have the responsibility to help students acquire an awareness of why, how and when hedges are used. NNSE scientists should not only be made aware of the need to mediate their claims, but they also need to be taught when to mediate and what semantic formulae are used in English to successfully achieve that goal. A full understanding of hedging devices is critical to academic success and eventual membership in a professional discourse community.

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Notes:

1. The examples presented throughout this paper are authentic statements drawn from the *British Medical Journal* (1993, Vol 306).
2. One difficulty in assigning a given hedging category to discrete linguistic items is that grammatical forms are capable of fulfilling more than one function. Indeed, many indications of tentativeness are not easily quantifiable and cannot be readily isolated as classes of formal items. Moreover, not all the items listed here correspond to hedging devices. For example, the *may* in, "We *may* not turn to the following aspect of the problem," or the *could* in, "We *could* not detect any statistically significant difference," are obviously **not** hedges.

9

The Voices of the Discourse of the Problem of Who Says What in News Reports

Ana María Harvey

*It is important to help students become aware of the existence of different voices in written discourse and to help them recognize and use signals of "reporting" and "averral" in expository texts. The approach described below emphasizes the interactional relationship between writer and reader in discourse—a social interaction where two or more participants intervene through a text. This chapter presents a framework for a descriptive discourse analysis, focussing on **Who** says **What** to **Whom** and suggests a procedure to disambiguate referential fuzziness. Sample exercises are also included.*

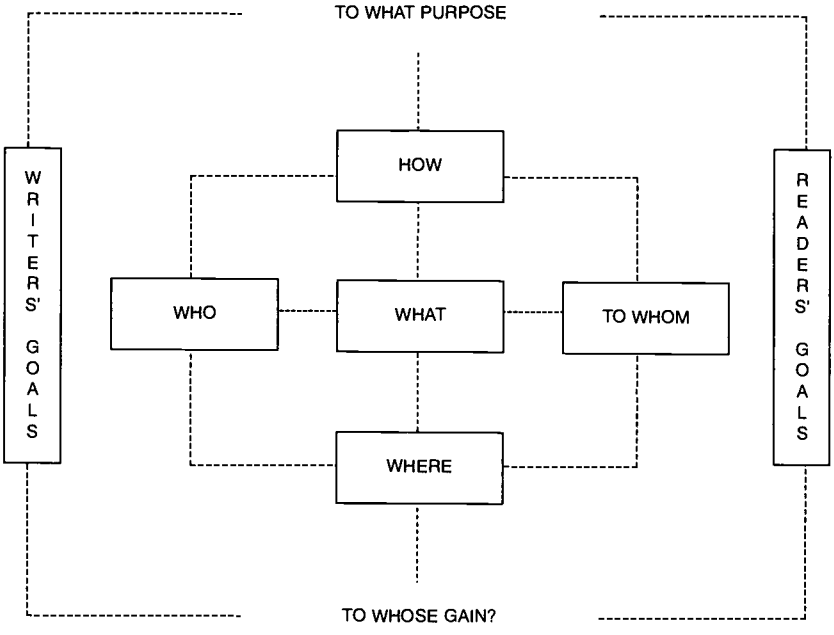
INTRODUCTION—THE APPROACH

Broadly speaking, discourse analysis is concerned with the study of naturally occurring oral or written discourse in social contexts. In particular, discourse analysis is interested in dialogue or interaction between speakers and in the accompanying socio-pragmatic effects. Interaction is defined as the network or relations between participants, writers and readers, through a text. Both discourse and genre originate in the structure and processes of a society (Kress, 1990).

The approach outlined below follows the overall principles of descriptive discourse analysis. It presupposes that features of interaction give texts their distinctive shape. We not only attempt to find answers to research questions, but also try to present a framework for adequate responses to practical problems. In other words, results obtained through analytical procedures should provide the necessary basis for adequate text selection and exploitation. In line with these objectives, we propose to assess written texts as a result of the following:

i) **a social interaction,**
ii) where **two participants** intervene
iii) through a **text.**

Within this framework, data is assessed as the outcome of social interaction. Two participants are considered since a writer and a reader are the minimum pair required for interaction to take place. The text is of immediate interest because it is the physical evidence of the interaction. The following framework represents variables and parameters involved in the text-creation process. It is used to assess texts and find the evidence on the surface of discourse.



According to our experience, this visual representation is adequate to analyze and characterize texts at different levels of delicacy and to classify texts for various pedagogical and rhetorical purposes. Since it takes into consideration situational elements as well as the network of relations within the text, it can be seen as a checklist of points to bear in mind by analysts and practitioners alike. For instance, when applying the framework to a set of texts on AIDS, a classroom teacher may want to focus on the parameter **WHERE** to separate texts according to sources of publication and the parameter **WHO** to check whether the text is signed or not and, if so, whether the writer is a scientist or a social communicator. This will provide the teacher with some insight as to the conceptual level of the text. Analysts interested in genre studies, on the other hand, may want to reframe the parameter

WHERE to find out in what section of a journal the particular text appears before dedicating their attention to **HOW** the text is structured and information is conveyed. Similarly, if the analysts are interested in interaction, they will need to focus on the central parameters **WHO-WHAT-TO WHOM** to find the evidence that will allow them to identify the voices of participants, the roles they fulfill and what they say and do through the text (Harvey, 1992).

In short, the approach advocates the following:

1. In order to understand a text, one must study the situation and features of interaction, which in turn will suggest pedagogical applications.
2. Written texts are part of an interactional relationship between participants, with reading and writing as parts of the same process.
3. A necessary condition for critical reading is the identification of **WHO** is speaking to **WHOM**, and **WHO** is saying **WHAT**—that is, whose authority lies behind a piece of evidence or a given fact.

A text taken from a science report in the *New Scientist* will exemplify selected procedures, while news reports will be selected to develop tasks. All texts selected deal with "the Greenhouse Effect," a topic of interest not only to the scientific community but also to environmentalists, politicians, and the public at large. Tasks have been devised with elementary science students in mind. This approach may be applied equally effectively to other types of texts and learners to develop critical reading in English and other languages.

The first section of this paper considers the implications of the label *science reports* for text selection, outlines the suggested approach, illustrates procedures, and characterizes overall features of a sample text. The second section briefly comments on a particular teaching/learning situation and reading goal, and presents a lesson plan to disambiguate attribution of authority in news reports.

THE COMMUNICATION OF RESEARCH FINDINGS

There are many advantages of basing reading and writing activities on science reports. Science reports are a common means of communicating the results of scientific endeavours. They contain relevant and up-to-date information which is of interest to our learners. They are easily available and usually of a convenient length for instruction. Moreover, as authentic texts, they can be used to help familiarize learners with register norms and genre conventions. Science reports may take different forms and be addressed to varied audiences.

When referring to the communication of research findings, we must first clarify the label *science report* and the exact meaning of the qualifier *popular.* The problem arises because the term *science report* is commonly used to

designate different sorts of events and their textual outcomes. The following dictionary definition accurately represents a *science report* as an activity: "a formal or official presentation of facts or of a record of an investigation" (*Webster's New Twentieth Century Dictionary*, unabridged edition, 1979). However, the definition is misleading in that it seems to assume that the writers and readers are identical and hold similar goals. Moreover, the definition provides no information regarding the text itself. As given, the definition applies to research articles written by scientists for insiders, i.e., peers from the same discourse community. However, the term may also be used to refer to articles, either written by specialists or science reporters, but addressed to outsiders, e.g., informed laymen or the general public. Obvious examples would be reports on the Greenhouse Effect in the *Journal of Climatology, Nature, Scientific American, The New Scientist, National Geographic*, and *The Christian Science Monitor.*

Myers (1990a) assessed the changes introduced when the same authors rewrote a study originally contributed to the specialized journal *Nature* for the more popular *Scientific American.* In the study he demonstrated and exemplified ways in which differences in audiences bring about changes in rhetoric and linguistic realizations in the "popular" version. This led him to conclude that academic and popular articles were two different but equally valuable communicative events, each with distinct purposes and a unique set of features.

However, research findings are usually passed on to outsiders in wider forums than *Scientific American.* Reports on the Greenhouse Effect, for example, (as well as on other sensitive issues) are also commonly published in the science pages of daily newspapers, usually in the form of news reports. The structuring, constituents and communicative functions of news reports have been studied by van Dijk (1986). Van Dijk demonstrated that news reports are structured following a top-down system of organization which favours the interpretative task of the reader. For instance, headlines represent an initial summary category which expresses the most important topic or theme of the news item. The following text contains the news story, which should feature a main events category as its minimum component. News reports which inform about research findings follow this overall trend.

In sum, the label *popular science report* highlights the fact that addressee readers are non-specialists. It refers to communicative events appearing in both popular journals and newspapers. The defining feature is that popularizations are the outcome of a reformulation activity. This second discourse (D2) emerges in order to solve a social need of reformulating, irrespective of whether it is performed by scientists or social communicators. What is really important to bear in mind is that if the discourse source (D1) is in itself the representation of a research act, the popular text (D2) is, in turn, the representation of an act of communication. Rhetorical and linguistic realizations follow suit.

ANALYTICAL PROCEDURES AND FEATURES OF THE DATA

In accordance with the approach suggested, we will consider the text below as the physical outcome of a social interaction. To characterize the features and the context of interaction, we will resort to evidence found on the surface of discourse. To comply with the purpose of the analysis, we will focus on the linguistic realizations of the **Who** says **What** and **To Whom** relationships as the message unfolds. Such a procedure has the additional advantage of replicating the steps of the reading process. To illustrate procedures, we have chosen a sample text dealing with the Greenhouse Effect which appeared in the *New Scientist.* The analysis conducted is by no means exhaustive and should be taken as an attempt to highlight the most salient features of popular science reports.

> Sample Text: Gluts from global warming.
> [1]A projected increase in global temperatures over the next 50 years of between 1.5° C and 5.5° C appears likely to produce a glut of most crops grown in the northern hemisphere and, simultaneously, a further depletion of output south of the Equator. [2]So says a group of 28 scientists from 17 nations that has spent four years examining how the greenhouse effect—the trapping of solar radiation by airborne pollutants—will affect agriculture in six temperate and five semi-arid countries.
> [3]The scientists, led by Martin Parry of the University of Birmingham, announced their results last week in Vienna. [4]Their report, "The Impact of Climatic Variations on Agriculture," was published jointly by the UN Environment Programme and the Vienna-based International Institute of Applied Systems Analysis. [5]It says that a rise of 1° C would shift cereal growing regions northward by 100 kilometres.
>
> (*New Scientist*, November 12, 1988)

The identification of the publishing source will be taken as given. Due to our knowledge of the world, this permits us to anticipate that it is a communicative event addressed to outsiders, presumably specialists from other fields of knowledge and/or informed laymen. Sentence one could be considered an adequate sample of scientific discourse. The lack of explicit identification of the source of the utterance complies with conditions of facticity and contributes to an image of objectivity in the representation of the object of research, "global warming" anticipated in the title. It is only in reading sentence two that it becomes evident that the text is a report and that sentence one is really a projection of a linguistic representation taken from another piece of discourse (Halliday, 1985).

The first responsibility of the **Who/Writer**, scientist or science reporter, is to determine the context of interaction which gives origin to the text. In the case of popular science reports, the **Who/Writer** must first decide whether, and in what circumstances, to project his/her own voice or that of the sources

of knowledge. As all texts are deictically anchored, such a decision will necessarily be accompanied by other choices affecting the "here" and "now" of the utterance. In sentence one the writer has chosen an indeterminate voice rather than deictically anchoring the text in the here and now. In sentence two, on the other hand, the writer not only identifies this voice as belonging to "a group of 28 scientists from 17 nations" but also signals his/her reporting role. He/she does so by detaching him/herself from the previous proposition by the use of the cohesive expression "so says...," and by the inclusion of the embedded definition of the "greenhouse effect." The writer seems to assume responsibility, however, for the informational content of the relative clause which adds credibility to the predication. The reporting role of the **Who/Writer** is also evident in sentences three and four. The former provides information on the situation which motivated the communicative event (D2), and the latter identifies the discourse (D1), source of the projections realized in sentences one, two and five.

WHAT stands for informational content, considers attitudes towards propositions and gives evidence of another either/or decision. In sentence one *increase in global temperatures* is introduced by the premodifier *projected*, indicating that the increase in question is being dealt with in a hypothetical future world. The ongoing account should, therefore, be interpreted as the outcome of modeling in the sciences and not as a result of direct observation of the phenomenon in the real world. Such a distinction does not exempt the investigators, however, from providing as much information as necessary for the adequate interpretation of the object of research. The object is thus delimited in this future world by the postmodifying expression *over the next fifty years*, and its effects quantified by the inclusion of the prepositional phrase between 1.5°C and 5.5°C. These linguistic realizations should be attributed to the sources of knowledge and not to the actual writer of the text. There is a clear difference though on how modelling in the sciences is perceived depending on who the actual reader is.

The selections of verb, voice and mood are of primary importance for assessing what participants say and do through the text. These grammatical features provide evidence as to how a perception or idea is to be regarded and interpreted. In the sciences, this view may be represented by the researcher as real or hypothetical, and as more or less certain or debatable. In sentence one, the selection is represented by the verbal expression *appears likely to produce* that introduces the predication. Different sorts of information are ascribed. The first concerns the verbal form *appears*, indicating that the predication is non-existential, thus reiterating the qualification already made by the use of *projected.* The other, conveyed by *likely* refers to the probabilistic nature of the effects of the phenomenon. The whole verbal group in turn qualifies the causal relation—"A therefore B" or "B before A." This latter operation illustrates deductive reasoning in the construction of new knowledge. The selection of the reporting form *says* in sentence two, on the other

hand, informs the reader that a change of focus has occurred, from the assertion of the science reporter to those scientists responsible for the utterance. Through a verbal act the writer has exercised role and topic change. The function of the same form *says* seems different in the last sentence of the text. In this case the presence of the non-human agent of the process, the report, is made explicit. This use of reporting verbs is a common characteristic of reports.

To sum up, evidence shows that in popular science reports there is a double uttering structure and, therefore, two sets of participants, those of the discourse source (D1) and those reporting the original discourse (D2). Since they co-exist, they may fill the slots **WHO/TO WHOM** of our diagrammatic representation, either alternatively or simultaneously. The **Who/Writer** is responsible for theme or topic selection and thus of the wording of the headline. The headline is necessarily biased since it represents the writer's own selection and understanding of the most relevant finding communicated in D1. The writer is also responsible for topic selection and topic shift in the development of the news story, and for making the necessary clarifications so that readers adequately interpret his/her own message as well as that of the discourse source. Two additional conditions need to be fulfilled by the writer. These are, a. the specific mentioning of the discourse source and its relationship with the outside world, which implies b. adequate marking of time and place.

PRACTICAL APPLICATIONS

ESP students in science faculties in developing countries need English, first and foremost, to gain access to the academic or technical literature written in the foreign language. Although their reading purposes may vary, they will be required, at one stage or another, to assess the potential value of scientific or technological contributions for personal or institutional use. This implies being able to exercise critical reading in order to decide whether such contributions are appropriate, applicable, and beneficial for their country and society. It is important, therefore, to develop in these students the skills required to identify and keep track of developments communicated through texts. Most ESP courses in developing countries are taught at freshmen level. This is the reason why we have selected beginning-level science students as our target population. Given the fact that these learners lack the sophisticated conceptual knowledge of more mature students, we have selected news reports as textual evidence to tackle the problem of attribution of authority. This would not be the case, however, with more mature and sophisticated learners.

The lesson outlined below includes a series of text-based activities: pre-reading activities, reading tasks and follow-up suggestions. The following is a series of text-based activities for a group of beginning-level science students (or, alternatively, secondary students in their final years) preparing to read English texts critically in their areas of interest.

SAMPLE LESSON PLAN

1. Preparatory Reading Activities.

Objective: To make students aware of differences in form and function of science reports.

Stage 1. To be conducted in L1 and out of class.

Suggested steps:

1.1. Divide the class in groups of twos or fours, depending on class size, and preferably by areas of interest.

1.2. Ask students to go through the science pages of daily newspapers to see what endeavours are being reported or discussed. The group should make a list of themes, publishing sources, dates and name of writer if the text is signed.

1.3. Ask students to select one text and go to the library to find other texts from journals or textbooks which deal with the theme they have selected, and prepare a similar list. The list should be accompanied by information on writers, i.e. journalists, researchers, textbook writers...and type of readers, e.g., the general public, other investigators, students...

Stage 2. To be conducted in L1 or in the foreign language depending on students' proficiency in L2.

2.1. Groups are asked to report their findings to the class, justify their choices, and provide a short summary of the contents. The teacher may thus also assess student interest while increasing motivation for future work.

2.2 Students are told that research findings are of interest not only to specialists, but also to students and the public at large. Students are introduced to registers, e.g., scientific discourse and journalese, and to genres, e.g., articles versus news reports. On the basis of students' reports the teacher should decide how much information is required prior to the reading lesson proper. S/he will need to focus on differences in writers' and readers' goals, and clarify the reporting role journalists fulfill in the communication of research findings.

READING TASKS

Objective: To develop critical reading skills by making students aware of the existence of different voices in news reports.

Teacher preparation: Select texts for learning tasks, e.g., texts 1 and 2 below. Prepare tasks and accompanying chart and table. Texts, chart and table are not available for pre-reading questions. Allocate time for different activities.
Student-preparation for lesson: Students work in groups to answer the following set of questions: What do you know about the greenhouse effect? Why is it important for environmental conditions? What policies have been implemented by the government to control the emission of pollutants or greenhouse gases? What is the connection between transport and the use of fossil fuels? ...
Stage 1. Basic training to recognize topic, and markers of participants, time and place.

TEXT 1. CAMPUS SCIENTISTS TO STUDY GREENHOUSE EFFECT (by Nigel Morris).

Scientists at Birmingham University last night announced they had been awarded a prestigious £500.000 project to study the implications of the Greenhouse Effect.
Top of their priorities will be investigating what will happen to the world's food supply as a result of global warming. Academics who belong to a university-based group, Environmental Research and Management (ERLM), which brings together more than 100 scientists and geographers interested in environmental issues, are celebrating winning their first major research project.
It has been awarded by the US Environmental Protection Agency and will be run jointly with the National Aeronautics and Space Administration (NASA).
The experts from the United States and Birmingham will supervise a team involving 80 agricultural specialists from 15 countries.
They will attempt to predict the effect of higher temperatures on specific crops and connect that to global patterns of food production.
They estimate the first batch of results will be ready to table at a discussion of global warming at the United Nations General Assembly in December next year.
Much of the work will take place overseas, but researchers in Birmingham's school of biological sciences will be looking at developing new strains of crop better suited to warmer conditions.
A spokesman for the Birmingham team said last night: "We will be concentrating on predicting the effect of global warming on the food chain and looking at parts of the world where crops will be at risk from the Greenhouse Effect."
ERLM, which was founded last year, is about to circulate a brochure, detailing its environmental expertise, to go to industry and local authorities.
As part of its drive to encourage environmental research at Birmingham, it is also running a seminar programme to encourage top-level environmental scientists to the campus.

(*The Birmingham Post,* Tuesday, October 24, 1989).

Suggested steps:

1.1. Divide the class in groups, and give each student a copy of text one and a list of indications.

1.2. Ask students to focus their attention on the publishing source and to discuss in groups how much they know about the given newspaper and its readers.

1.3. Ask students to read the headline and decide what the topic is. Each group should then hypothesize what information they expect the text to provide and who the actual writer of the text is. They should be prepared to justify their answers.

1.4. Subsequently, ask students to number orthographic sentences and to read them in sequence in order to underline proper names and/or pronouns appearing in the text. Each group should first decide which of these refer to scientists and/or to sources of knowledge. Each group should then discuss the reason why so many references are made to them.

1.5. Ask students to go back to the text to find situational elements, e.g., time and space markers, other than verbal forms. Ask students to identify the situation of communication of each, i.e., when and where the communicative event takes place.

1.6. Ask students to check their choices with the members of the group and prepare a short report on their findings.

1.7. Display on the overhead projector (or draw on the blackboard) a chart containing slots to be filled in with information provided by the groups and discuss and complement their choices if necessary. For instance, differences between direct and indirect speech should be illustrated.

Stage 2. Task reading to recognize attribution of authority by detecting **Who** says **What** in news reports.

TEXT 2. TREATY ON GREENHOUSE EFFECT UNLIKELY (by Pearce Wright).

> A leading British researcher in environmental sciences gave a pessimistic forecast yesterday of attempts to reduce the "greenhouse effect" through international agreement by limiting the discharge of carbon dioxide from the burning of fossil fuels.
> Dr. Martin Parry, of Birmingham University, told the annual meeting of the Institute of British Geographers in Coventry that the "interventionist"

approach being used to avoid the destruction of the Earth's protective ozone layer, would not work for the greenhouse effect.

Ozone destruction is being caused by the discharge of CFCs (chlorofluorocarbons), the man-made chemicals produced by a handful of large firms for use in aerosols, refrigerators and foam plastics.

He said the Montreal Protocol, an agreement which came into force on January 1 to run down production of CFCs by 50 per cent by 1999, was possible because market mechanisms provided an incentive for industry to develop "ozone friendly" alternatives.

The issue of carbon dioxide gas, discharged from a variety of sources in every country, was a different matter.

The United Nations environmental programme, which arranged the negotiations for the CFCs treaty, is aiming for a "greenhouse gas protocol" by 1995 but Dr. Parry said the latest calculations showed that the amount of carbon dioxide in the atmosphere would double by about the year 2050, with an average rise in the global surface temperature of between 1.5° and 4.5° degrees centigrade.

The threat of climatic change would seem ideal for international intervention because the effects were so long term and carried serious consequences for people, plants and animals not yet in existence.

However, the issue was surrounded by contentious matters, such as disputes over the underlying science of the greenhouse effect and predictions of the scale of its impact on the climate, which made agreements unlikely.

He said there would be a strong temptation to cheat for social and economic reasons if attempts were made to introduce limits.

The problem was linked to existing disparities across the world, with, for example, the United States already discharging 20 times more carbon dioxide per head of population than India, and much more than China, yet the need for more energy production, with implications for the greenhouse effect, were felt more strongly in countries such as India and China.

(*Times*, January 5, 1989).

TABLE 1. Fill in the following table with nouns in initial sentence position. Those referring to individuals (or entities) under **Who** and topical nouns under **What**.

Sentence	WHO	WHAT

Suggested steps:

2.1. Give students a copy of text 2 and of the accompanying table. Allocate time for individual reading.

2.2. Next, divide the class in groups and ask students to decide what information should be included in the table. Give time for completion of the task.

2.3. Display an empty table and proceed to fill it in as groups report.

2.4. Discuss and provide alternate choices where necessary. For instance, focus on verbs and explain differences in actions by separating verbs of saying, e.g., announce, tell, from verbs of thinking, e.g., consider, estimate, and from those of doing, e.g., show, found, investigate...

2.5. End this part of the lesson by asking students to go back to the text in order to detect different positions and viewpoints on the greenhouse effect. Groups should then answer the following questions and justify their answers: Do scientists advocate changes in policies? Do their findings affect users and consumers of energy resources in any way? What do you understand by "the threat of climatic change" and in what way may it affect your future life? What is your own position with respect to ecology?

Follow-up activities. Extending knowledge on discourse and language. Further examples should be provided, preferably taken from the texts students themselves selected in the preparatory stage. To extend knowledge on discourse, academic science reports should be chosen. To exercise linguistic skills, highlight samples of different kinds of reported speech. Tasks to be devised should take into account students' conceptual knowledge and should introduce students to the features of registers and genres they will encounter when reading specialized texts. The lesson can end with a mock debate on ecology. For such a purpose, the class should be divided into those who favour the "status quo" and those who want to introduce changes in existing conditions. This final activity also has a high educational value.

CONCLUSION

Because readers of English are often exposed to popular science, they need to be able to see how popular science is a discourse about another discourse in order to better understand who is really saying what. Considering the writer's and reader's goals mediated through the discourse helps sharpen our learners' understanding of the hidden messages in the text. Although this paper has focused on **Who** says **What** to **Whom,** the other aspects of Figure 1 including **How** and **Where** can be used to focus on text structure or genre.

The pedagogical applications of this analysis can also be used with other types of text.

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SECTION FOUR

GENRE APPROACHES

10

Applied Genre Analysis and ESP

Vijay K. Bhatia

More than simply an act of linguistic description, discourse analysis is a linguistic explanation attempting to answer the question, why members of specific discourse communities use the language the way they do. Taking communicative purpose as the key characteristic feature of a genre, this paper will first highlight some of the major features of genre theory which make it attractive for application to language teaching. The second section discusses how a genre-based approach to language learning and teaching helps the learner to use language purposely. The final section illustrates a genre-based approach to language teaching using examples from materials designed for specific professional contexts.

INTRODUCTION

Recent work in applied genre analysis (Swales, 1981a, 1990; Bhatia, 1983a, 1993; Dudley-Evans, 1986; Berkenkotter and Huckin, 1995) has reiterated the importance of linguistic analysis in the practice of language teaching. Discourse analysis is viewed not simply as an act of linguistic description but more as linguistic explanation, attempting to answer the question, *why do members of specific discourse communities use the language the way they do?* The answer requires input not from linguistics alone, but equally importantly, from sociolinguistic and ethnographic studies, psycholinguistic and cognitive psychology, communication research, studies of disciplinary cultures and insights from members of such discourse communities, to name only a few crucial sources of information. Taking communicative purpose as the key characteristic feature of a genre, the analysis attempts to unravel mysteries of the artifact in question. Genre analysis thus, has become one of the major influences on the current prac-

tices in the teaching and learning of languages, in general, and in the teaching and learning of ESP and English for Professional Communication (EPC), in particular. In this paper I would like to demonstrate the use of genre theory to the teaching of ESP. I will do this in the following three sections.

1. The first section will highlight some of the major characteristic features of genre theory which make it attractive for applications to language teaching.

2. The second section will discuss how a genre-based approach to language learning and teaching helps the learner to use language purposefully.

3. The final section will illustrate a genre-based approach to language teaching by taking examples from materials designed for specific professional contexts.

WHAT IS GENRE ANALYSIS?

Genre analysis is the study of situated linguistic behavior in institutionalized academic or professional settings. It has the following four characteristics.

- Rather than providing a detailed extension, validation or otherwise of one linguistic framework or the other, genre analysis shows a genuine interest in the use of language to achieve communicative goals. In this sense, it is not an extension of linguistic formalism.

- However, genre analysis does not represent a static description of language use but gives a dynamic explanation of the way expert users of language manipulate generic conventions to achieve a variety of complex goals. In this sense, it combines the advantages of a sociolinguistics perspective, especially the use of ethnographic information, with those of a cognitive perspective, especially regarding the tactical use of language.

- It is primarily motivated by applied linguistic concerns, especially language teaching at various levels.

- It is narrow in focus but wide in vision, focussing on specific differentiation in language use at various levels of generality.

GENRE-BASED APPROACH TO ESP

In my view, there are at least four distinct, though systematically related, areas of competence that an ESP learner needs to develop in order to get

over his or her lack of confidence in handling specialist discourse. Even if most of these learners already possess a reasonably adequate competence in the use of the language for general every day functions, they will still need to develop a. understanding of the specialist code, b. familiarity with the dynamics of specialist genres, which includes the rhetorical forms and content, c. specific contexts they respond to and the conventions they tend to use in their responses, and finally, d. a proficiency in the manipulation of specialist genres to respond to the exigencies of unfamiliar and novel situations.

In other words, learners need to develop the *understanding* of code, the *acquisition of genre knowledge* associated with the specialist culture, *sensitivity to cognitive structuring of specialist genres* and then, and only then, can they hope to *exploit generic knowledge* of a repertoire of specialist genres by becoming *informed users* of the discourse of their chosen field.

The following elaborates each of these four stages.

(1) Knowledge of the Code

The knowledge of the code, of course, is the pre-requisite for developing communicative expertise in specialist or even everyday discourse. Most of the ESL programs all over the world aim to achieve this with varying degrees of success. However, it is important to note that an almost perfect knowledge of the code is neither necessary nor sufficient for successful ESP instruction, though it does seem to be a popular myth that we language teachers often believe. This myth has gained popular currency among many ESP teachers who believe that any form of ESP work requires almost perfect competence in the use of the code. Where teachers hold such a belief, further ESL instruction invariably incorporates tedious remedial teaching, often resulting in less than satisfactory consequences. We often fail to recognize that if seven to eight years of ESL instruction have failed to equip the learner with this desired level of competence, further remedial work, because of its essentially repetitive nature, will be far less effective.

The other side of the myth is that if somehow second language learners can be given so called *underlying linguistic competence*, then there is no need to develop ESP competence because the learners will be able to cope with the flow of new information in any subject discipline, just as a native speaker does. This claim, at best, seems to be grossly overstated and, at worst, seriously flawed. The claim seems to rest on the somewhat naive assumption that the main difference between everyday use of language and specialist discourses lies in the use of specialist lexis. However, much of the work done in discourse and genre analysis in professional and academic contexts in the last two decades strongly suggests that there are

fundamental differences in the use of lexico-grammatical, semantico-pragmatic and discoursal resources in specialist genres.

(2) Acquisition of Genre Knowledge

To participate in a specialist communicative event, one must acquaint oneself not only with the communicative goals of a particular discourse community, but also with the communicative goal-oriented purposes associated with specific use of genres. Therefore, before learners undertake any goal-driven communicative activity, they need to become aware of appropriate rhetorical procedures and conventions typically associated with the specialist discourse community they aspire to join. Genre knowledge of this kind is a form of "situated cognition,"which appears to be inextricable from professional writers' procedural and social knowledge (Berkenkotter and Huckin, 1995:13). Learners need to acquire genre knowledge, procedural knowledge (which includes a knowledge of tools and their uses as well as their discipline's methods and interpretive framework), and social knowledge (in the sense of familiarity with the rhetorical and conceptual context) in order to become better informed apprentices. As Fairclough (1992) points out, "... a genre implies not only a particular text type, but also particular processes of producing, distributing and consuming texts."

(3) Sensitivity to Cognitive Structures

Having understood the goals of the specialist community and to some extent internalized some of the conventions associated with specialist genres used by them, the learner will then need to become familiar with the way language is typically used to achieve these goals and communicative purposes. In addition, learners will need to exploit these conventions in response to changing socio-cognitive demands in specific professional contexts or certain novel situations and purposes. This can be developed by sensitizing learners not only to the generic forms and content in genre-specific texts but also to their emerging responses to changes in social practices.

Surprisingly, even after specialist learners become reasonably competent in language for everyday situations, they may still need further knowledge of the code. Recent research in the study of a variety of academic and professional genres (see Bhatia, 1983a, 1992, 1993) indicates that although there can be large areas of overlap in the use of lexico-grammatical resources across various professional contexts, there certainly are specific uses of lexico-grammatical features which carry typically genre-specific values in specialized contexts. Swales (1981b) has investigated the use of *definitions* in student writing in science, textbooks in economics, and legislation and found that the distribution, the form, and the functional value these definitions carry differ radically in the three genres. More

recently, Bhatia (1992) has found that the use of nominals in advertising, scientific academic genres, and legislation differs significantly in terms of their form, distribution, and discoursal values. These and similar findings of this nature indicate that just as certain lexical items have specialist meanings in specific professional genres, a number of syntactic forms may also carry genre-specific restricted values in addition to their general meanings codified in grammar books. Therefore, it is imperative that the specialist learner become aware of restricted aspects of linguistic code in addition to the general competence he or she requires in the language. Genre-based grammatical explanations raise learners' awareness of the rationale of the text-genre that they are required to read and write. Rather than simply learning to read and produce a piece of text as a computer does, students should develop a sensitivity to the conventions in order to ensure the pragmatic success of the text in the appropriate academic or the professional context. As Swales so aptly noted, "... A genre-centered approach is likely to focus student attention on rhetorical action and on the organizational and linguistic means of its accomplishment."

(4) Exploitation of Generic Knowledge

It is only after learners have developed some acquaintance or, better yet, expertise at levels discussed above, that they can confidently interpret, use or even take liberties with specialist discourse. The first three stages mentioned above mostly involve understanding conventions, whereas this last stage includes exploiting and taking liberties with conventions to achieve pragmatic success in specified professional contexts.

GENRE-BASED APPROACH IN ACTION

Case one : UNDP-Government of Singapore self-access project

The genre-based approach to ESP materials development for ESP is relatively new. Following is a description of the UNDP-Government of Singapore Project in the Teaching of English in Meeting the Needs of Business and Technology undertaken to develop EBT (English for Business and Technology). These materials were used on a self-access basis to supplement the existing mainline programs at the then two polytechnics in Singapore.[1]

The materials are primarily based on the description of authentic linguistic data, where the focus is not just on the language (lexico-grammar and cognitive structure) but also on the conventions and procedures that shape the genres in question. The materials, therefore, do not simply promote the awareness of the linguistic system underlying a particular genre but also offer genre-specific explanations as to why certain features of language realize specific values in individual genres. The underlying principle, therefore, is to take the learner from pure descriptive linguistic tasks towards genre-specific explanations of why such linguistic features are

used and to what effect. The intent is to help the learner to use language more effectively in academic and professional settings and to bring much-needed psychological reality and relevance to the learning task. The approach to genre analysis and materials design seeks to clarify rather than prescribe. Once learned and adequately understood, the conventions and procedures can be exploited creatively to achieve private ends within the socially recognized communicative purposes.

Each unit is devoted to a specific (sub)genre and consists of a head text followed in most cases by a set of three head worksheets. The head text represents a standard or model example of the particular (sub)genre and sets out the main rhetorical moves or steps needed for its adequate realization by color-coding each move. Each head text is followed by a set of three head worksheets.

Head worksheet 1 is meant to help the learner internalize the interpretative generic structure of the genre in question. This highlights the main discoursal strategies that are conventionally exploited to achieve communicative ends in specific academic and professional settings. This worksheet gives the learner what Carrell (1983) refers to as "formal schemata" in the form of discoursal conventions that are typically associated with the genre.

Head worksheet 1 in the Business volume, for example, begins with a head text, which is taken as a standard or model example of a sales promotion letter (See Bhatia and Tay, 1987:1).

After the learners have read the head text, they are provided with a detailed explanation of the communicative purpose of the (sub)genre and the various Moves the writer makes use of to achieve that purpose. The Moves are also color-coded in the head text in order to make them obvious to the learner. The explanation contains no technical or other difficult vocabulary, except the names of the Moves, which are kept in simple terms. The purpose of such an explanation is to provide the learner with what Carrell (1983) refers to as 'content schemata' which the learner uses to understand the strategies that an expert genre writer employs to achieve his communicative purpose(s). The explanation can be given on the audio or video tape or in written form. The teacher must first ensure that the learners have understood and internalized both a typical communicative structure (formal schema) and the conventionalized patterns of knowledge, beliefs and experience of the specialist community associated with the genre in question. The head worksheet gives further practice to the learner in the following three aspects of genre construction and comprehension:

Head Worksheet I

STANDARD BANK **268 Orchard Road, Yen Sun Building, Singapore 0923** **4 December 1987** **Mr. Alhert Chan** **1 Sophia Road, 05-06** **Peace Center** **Singapore 0922** **Dear Sir**	
We are expertly aware that international financial managers need to be able to ask the right questions and work in the market place with confidence.	**Establishing credentials**
Corporate Treasury Services, Standard Bank, now provides a week-long Treasury Training programme designed to develop awareness and confidence in managers.	**Introducing the offer** *Offering product/service*
We explain the mechanics of foreign exchange and money markets. We discuss risk from an overall standpoint and practical hedging techniques to manage foreign exchange risks. We also discuss treasury management information systems, taxation and the latest treasury techniques. We will be holding our next Treasury Training Programme from 24-28 February 1987, inclusive. The fee for the Training Programme will be US$1,500 per person to include all luncheons and a dinner as indicated in the schedule as well as all course material.	*Essential detailing of the offer*
The programme is both rigorous and flexible. It can be tailored to fit the needs of a whole corporation or just a few levels within the company.	*Indicating value of the offer*
We are pleased to inform you that if your company sponsors 6 or more staff for the course, we will offer you a discount of US$100 per person.	**Offering incentives**
For your convenience, I enclose a reservation form which should be completed and returned directly to me.	**Enclosing documents**
If you have any questions or would like to discuss the programme in more detail, please do not hesitate to contact me (Telephone No. 532 6488 / telex No. 29052).	**Soliciting response**
As the number of participants at each training programme is limited, we would urge you to finalize as soon as possible your plans to participate.	**Using pressure tactics**
Thank you very much for your kind consideration. **Yours faithfully,** **Mr. G. Huff**	**Ending politely**

1. Acquisition of the knowledge of the promotional genre through explanation

2 Sensitization to generic form and content through analysis

3. Use and exploitation of generic knowledge through variation in contexts.

Each exercise is, therefore, preceded by significant explanation of the strategy used by the author to achieve his or her intention. Exercise 2, for example, is not simply a mechanical exercise in the identification of various *Moves* in the genre, but it also introduces the learner to different ways of establishing credentials, (see exercise A below), including a case where the author needs to skip such a conventional realization of the first *Move*, as in exercise B below (slightly modified versions from Bhatia and Tay, 1987: 5).

EXERCISE 2

A

Explanation

The writer of a promotional letter can use the Move *ESTABLISHING CREDENTIALS* not only by (1) referring to the needs of the business world in general or the needs of a customer in particular as in Mr. Huff's letter but by (2) referring to his own company's achievements/speciality as well. In the following example,

C & E Holidays, the name synonymous with the very best in travel trade with 20 years of professional expertise, will present you with a variety of programmes.

the writer *ESTABLISHES CREDENTIALS* by stating his company's past experiences and field of specialization. Either of these two strategies or, both may realize this Move.

Instructions

Label the following text to indicate how many different strategies the author uses in *ESTABLISHING CREDENTIALS* of his company.

The next 12 months are going to be difficult ones for Singapore industries as a whole. We, at Marco Polo are fully aware of the current market situation and are continuously upgrading our facilities and amenities to meet new competition.

[Check with answer sheet]

B

Explanation

In certain cases when the company has had past business dealings with the customer, the writer does not need to *ESTABLISH CREDENTIALS.* Instead, the writer can choose to begin the letter by thanking the customer for his continued support. The following is an example of this kind.

You have now been a member of International Airline Passenger Association for about three months. Your continuing support keeps our worldwide organization strong and we want you to know that we appreciate your confidence in our services.

Instructions

Label the strategies that the author uses in the following text examples to *ESTABLISH CREDENTIALS.*

(1) With the current economic downturn we would like to take this opportunity to express our sincere appreciation for your support during the past months.

(2) Have you ever wished there was one study providing you with a step-by-step guide to establish a joint venture in the People's Republic of China?

Head worksheet 2 focuses mainly on the linguistic realizations of various rhetorical moves and the genre as a whole. Although the worksheet is meant to provide practice in the use of appropriate language, the grammatical explanation offered at each stage is invariably genre-specific, and therefore, more relevant to the task in hand. The following is an example taken from Head Worksheet 2 (Bhatia and Tay, 1987: 9-11).

Head worksheet 3 (not shown here) gives more advanced practice in free genre writing. It often concentrates on refinement and creative variation in style, grammatical appropriateness and other aspects of genre construction, like editing and revision, often using *easification devices* (see Bhatia, 1983b). Another significant aspect in these exercises is that they all make use of more or less authentic, (though grammatically imperfect and stylistically weak and inadequate) examples from the real world. This is much more useful for learning purposes than texts especially written with inserted lexico-grammatical or stylistic errors. Learners are more likely to face realistic errors actually committed by a professional or academic community than those invented by the teacher. Exercises in this worksheet also take the learner systematically from relatively simple and controlled to more complex and advanced free genre writing. (Bhatia and Tay, 1987: 26-27).

Head Worksheet 2

Exercise 1
(A)
Explanation
The writer of a promotional letter establishes the importance of his company either by referring to the business needs in general and the customer needs in particular or by referring to his company's achievements/speciality. There are certain typical language features which characterize the different ways of establishing credentials. For instance, notice the use of the pronouns you/we and the general/specific references in the examples that follow.

1. **Referring to the customer's needs**: Have you ever thought how much time your typist wastes in taking down your letters?
   Pronominal Reference: You
2. **Referring to the general business needs:** Every woman dreams of having at least one really beautiful coat and here is a splendid opportunity to make that dream come true.
   General Reference: Every woman
3. **Referring to the company's achievements/speciality:** We are fully aware of the current market situation and are continuously upgrading our facilities and amenities to meet new competition.
   Pronominal Reference: We
   C & E Holidays, the name synonymous with the very best in the travel trade, present you with a wide variety of tour programmes.
   Specific Reference: Name of the Company – 'C & E Holidays'

Instructions
Now, observe the use of references in the following sentences and tick them under the headings given to indicate the two ways (needs/achievements) of establishing credentials.

	Customer's needs	General business needs	Company's achievements/ speciality
1. Are you deafened by the ceaseless noise of typewriters and calculating machines?			
2 Why do thousands of people who normally suffer from the miseries of cold weather wear thermotex?			
3 At the Ideal Home Exhibition, which opens at Earls Court on 21 June, we have attractive new designs in furniture, and many new ideas.			
4 How can project managers plan and effect strategies which facilitate the accomplishments of an I/S project?			
5 We at Wright Services are experienced Management Consultants with experience in industries as diverse as mining, banking and manufacturing.			

(Check with Answer Sheet)

(B)
Explanation

Now observe that in the following examples, the writer refers to his company's achievements/speciality in two ways:

1. **Factual evidence:** He not only states that a product/service is good but also presents some data in the form of facts and figures to illustrate its worth.

   EXAMPLE:
   C & E Holidays, the name synonymous with the very best in the travel trade, with 20 years of professional expertise, will present you with a wide variety of tour programmes.
   Factual evidence: 20 years of professional expertise

2. **Unsupported generalizations and high pressure talk:** He states that a product/service is efficient without presenting specific reasons and explanations to prove its worth.

   EXAMPLE:
   Unsupported generalizations continuously upgrading our facilities and amenities.

Instructions
Indicate in the boxes which of the sentences below uses factual evidence or unsupported generalizations in referring to the company's achievements/specialty.

1. We, the experienced carpet-markets, guarantee our carpets to last for 10 years. We use oriental wool exclusively—every fibre of wool is at least 12 inches long and our carpets have 400 knots to every square inch.

2. We at Tech Craft make the best plastic pipes on the market today. They represent the very best in chemical research.

3. How would you like to have solar heating installed in your home at 50% actual cost?

4. What would you say to a gift that gave you a warmer and more comfortable home, free from draughts and a saving of over 20% in fuel costs?

Factual evidence	Unsupported generalizations

Check with Answer Sheet

(C)
Improve the following sentences by providing factual evidence.

1. We have insulated a large number of houses and reports from all over confirm that there is a considerable reduction in the fuel bill after insulation.

2. In Singapore, LEP Internatinal Ltd has been operational for a long time and the services offered by our aircargo division include in and out-bound aircargo consolidation, import clearance, cargo delivery and collection and warehousing in the Changi Airport complex.

3. The Valuation Department of this firm has been in existence since the setting up of the firm's office and now comprises many qualified valuers.

Although the materials in their present form contain only one set of worksheets called the head worksheets, several sets of additional worksheets have been prepared to bring in more variety focussing more and more on advanced creative aspects of genre construction, use and exploitation.

Case Two : *MA in Law and Language,* City University of Hong Kong

Context

The MA in Law and Language program at the City University of Hong Kong is a unique postgraduate programme designed for those professionals in various industrial, management and bureaucratic institutions who although not legal experts are nevertheless required to be able to read, understand, interpret, translate and sometimes write legal documents as part of their daily professional activities. As part of the program, they have one module on English for Law, which trains them in the use of English in typical legal settings. Although able to use English in their every day life when they find it necessary, they understandably feel quite nervous when handling legal language, especially legal rules and regulation, legal agreements and contracts. As part of their daily routine, most of them are often required, among other things, to read, interpret, translate and explain ordinances, legislative acts, contracts and agreements to their superiors and quite often to members of the general public.

Communicative Needs

These students need to develop some of the following skills.

- *The ability to understand why legal documents are written the way they are*

- *The ability to understand how these documents are constructed, interpreted, and used*

- *The ability to read and clarify these legal documents for the benefit of lay audiences*

And, most of all,

- *The acquisition of increased self-confidence, and sensitivity to the use of legal genres by acquiring genre skills, including those of rhetorical consciousness*

Meeting the needs: Integrating Process, Product and Purposes

Without specifying the details of methods and materials used, I would like to discuss one of the units based on the use of a single text in order to develop some of the skills I have referred to in the preceding paragraphs.

Preparatory Work

The learners are assumed to be linguistically competent. They are given background information about the contexts in which legislative rules are drafted, interpreted, and used in legal settings. Particular attention is paid to the dual characteristics of legal rules, i.e., clarity, precision, and unambiguity, on the one hand, and all-inclusiveness, on the other. The learners are then given sufficient practice in analysis of legislative sentences, focusing especially on the use of lexico-grammatical devices which are typically used to make their interpretation and use certain as well as flexible. Particular attention is paid to the identification and use of complex-prepositional phrases and qualificational insertions to make rules clear, precise, and unambiguous and binomial expressions to make them all-inclusive. Considerable attention is also paid to cognitive structuring typically associated with legislative sentences. In addition, the learners are given some practice in identifying psycholinguistic problems resulting from discontinuities in syntax as a result of qualificational insertions. This all requires approximately ten to twelve hours of work. It also involves the use of several typical textual illustrations in the class and as part of individual and/or group work.

Illustrative Material

At this stage the learners are introduced to the notion of *easification for the specialist audience and simplification for the lay audience,* which are introduced as two different genres, because they serve two different communicative purposes, and are meant for two different audiences. As illustrated in Bhatia (1983b and 1993: 145), easification is an attempt to make a professional text more accessible to the learner by using a variety of devices which guide the reader without making any drastic changes to the original content of the text. In the legislative context, the most appropriate and useful easification devices include those which not only clarify the cognitive structuring in the expression of complex legal contingencies but also reduce the information load at particular points in legislative statements. These easification procedures make the text easier to process while preserving the generic integrity of the original. Simplification procedures, on the other hand, create alternative textualizations meant for a lay audience. The following example illustrates one easification device:

Look at the following sections from an agreement between the publishers and the author, and complete the tasks given at the end.

Original Version

The author hereby warrants to the Publishers that the author has the right and power to make this Agreement and that the Work is the Author's own original work, except for material in the public domain and such excerpts from other works as may be included with the written permission of the copyright owners, and will in no way whatever give rise to a violation of any existing Copyright, or a breach of any existing agreement, and that the Work contains nothing defamatory or libelous and that all statements contained therein purporting to be facts are true and that nothing in the Work is liable to give rise to a criminal prosecution or to a civil action for damages or any other remedy and the author will indemnify the Publishers against any loss, injury or expense arising out of any breach or alleged breach of this warranty. The Publishers reserve the right to alter or to insist the Author alter the text of the Work in such a way as may appear to them appropriate for the purpose of removing or amending any passage which on the advice of the Publishers' legal advisers may be considered objectionable or likely to be actionable at law without affecting the Author's liability under this Clause in respect of any passage not so removed or amended. The foregoing warranties and indemnities shall survive the termination of this agreement.

Tasks

1. Analyze the text in terms of linguistic features discussed in the previous sessions. Also discuss whether and to what extent the use of these features help the writer to make this text clear, precise, unambiguous, and all-inclusive.

2. What seems to be the communicative purpose of the text? Is this to regulate future legal relationship between the Publishers and the Author? If so, can this be written in a more accessible manner? Write an easier version of this section and discuss its implications.

3. How would you simplify the content of this section for a non-specialist audience who simply would like to be informed about the content of the clause?

A typical response to task (2) of *easification for specialist audience* is reproduced here for comparison.

Easified Student Version

(1) The author hereby warrants to the Publishers that

(a) the author has the right and power to make this Agreement, and

(b) the Work is the Author's own original work, except for material in the

public domain and such excerpts from other works as may be included with the written permission of the copyright owners, and will in no way whatever give rise to a violation of any existing Copyright, or a breach of any existing agreement, and

(c) the Work contains nothing defamatory or libelous, and

(d) all statements contained therein purporting to be facts are true and,

(e) nothing in the Work is liable to give rise to a criminal prosecution or to a civil action for damages or any other remedy, and

(f) the author will indemnify the Publishers against any loss, injury or expense arising out of any breach or alleged breach of this warranty.

(2) The Publishers reserve the right to alter or to insist the Author alter the text of the Work in such a way as may appear to them appropriate for the purpose of removing or amending any passage which on the advice of the Publishers' legal advisers may be considered objectionable or likely to be actionable at law without affecting the Author's liability under this Clause in respect of any passage not so removed or amended.

(3) The foregoing warranties and indemnities shall survive the termination of this agreement.

The simple change in format helps the students find the hierarchy of ideas in the text.

GAINS

A quick comparison of the two versions demonstrates the self-confidence the learner seems to have gained in handling complexities of legal discourse and the extent to which he or she has become sensitive to the specific demands imposed on informed readership of such documents. It also indicates the internalization and use, among other things, of the following abilities and strategies typically used in the construction, and interpretation of specialized genres associated with the legal culture, which include an ability

- to cope with the complexities of legal syntax in legislative contexts,
- to handle the use of excessive information load in the legislative sentence,
- to use textual-mapping devices in the expression of complex contingencies, and
- to distinguish communicative purposes in the two versions used above.

Similar work is also carried out in the use of legal cases and judgments before the learners are given some training in handling matters of intertextuality and interdiscursivity in various legal genres. An approach like this establishes the importance of generic integrity in ESP work on the one hand, and that of generic creativity on the other.

The main advantage of such a genre-based approach to the teaching and learning of specialist English is that the learner does not learn language in isolation from specialist contexts, but is encouraged to make the relevant connection between the use of language on the one hand and the purpose of communication on the other, always aware of the question, *why do members of the specialist discourse community use the language in this way?* This develops in the learner an explicit desire to participate consciously in the professional community, rather than just being able to read and write legal texts as a computer does, without being a participant in the communicative event. This awareness of participation in the ownership of the genres of legal culture is what Swales (1990) calls *raising rhetorical consciousness* in the learner. On the language teaching side, this may also be seen to represent a conscious effort to integrate the product, process, and communicative purpose in a meaningful context.

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Note:

1. The resulting two volumes of materials were the outcome of the joint effort of a team of EBT specialists and practicing teachers representing the three participating institutions, namely, the National University of Singapore, Ngee Ann Polytechnic and Singapore Polytechnic. Volume 1 contains materials to be used in English for Business and Volume 2 in English for Technology.

11

Genre Models for the Teaching of Academic Writing To Second Language Speakers: Advantages and Disadvantages

Tony Dudley-Evans

This paper reports on work in the area of genre analysis, particularly in the teaching of academic writing. It argues that there are dangers in an over-prescriptive approach to the teaching of academic writing using the models for the different sections of an article as if they are valid for all disciplines and for various other related genres. The paper nonetheless concludes that there is much value in a genre approach that draws on more recent work in the sociology of knowledge and the rhetoric of disciplines as well as the linguistic analysis of the academic article. The paper recommends further research into two other key genres: the essay and the thesis.

INTRODUCTION

The work of genre analysis, especially the various analyses inspired by the original work of Swales (1981), has had a profound influence on the teaching of English for Specific Purposes, especially the teaching of academic writing to graduate students. The various analyses of the introduction (Swales, 1981a and 1990), the discussion section (Dudley-Evans, 1994; Hopkins and Dudley-Evans, 1988), the abstract (Salager-Meyer, 1990; Ayers, 1993), and the results section (Thompson, 1993) have all informed approaches to the teaching of academic writing. These studies have also been applied to teaching materials for graduate students who need both a "rhetorical awareness" of the texts that they have to write for their departments and a "linguistic awareness" of the range of language forms that can be used to express the basic rhetoric of the academic papers they write.

Two textbooks, one entitled *Writing Up Research* (Weissberg and Buker, 1990) and the other *Academic Writing for Graduate Students* (Swales and Feak, 1994), are good examples of a genre approach in action. But there are many other examples of unpublished material that take account of the findings of genre analysis. Some of these materials are reported on in Belcher and Braine's excellent volume on the teaching of academic writing in a second language (Belcher and Braine, 1995); articles of particular interest in this regard are those by Johns, Jacoby *et al.* and Dudley-Evans (all 1995).

. In this paper I wish to consider the approach to the teaching of academic writing that arises from the findings of genre analysis and the value of particular models to the ESP teacher and materials writer. The paper will focus on the work arising from the EAP genre school while recognizing that much similar work has developed in Australia under the influence of the work emanating from the Sydney school of genre analysis that developed from the systemic school of linguistics headed by Halliday (Halliday and Hasan, 1989; Martin, 1989). The Australian work has largely been put into practice with native speakers in the school system, while the EAP work has been more directly focused on the teaching of non-native graduate students, which is our concern here.

BASIC APPROACH

The basic philosophy of a genre approach is entirely consistent with an ESP approach. It assumes that the focus on imparting certain genre knowledge is part of a "short-cut" method of raising students' proficiency in a relatively limited period of time to the level required of them by their departments and supervisors. The imparting of genre knowledge involves increasing awareness of the conventions of writing, and teaching students to produce texts that, by following the conventions, appear well-formed and suitably structured to native-speaker readers. Indeed, it has been argued that "knowledge of organization, arrangement, form and genre" can systematically lead to knowledge of subject matter (Belcher, 1995 and Jollife & Brier, 1988 cited in Belcher, 1995). Furthermore, work with native speakers (Torrance *et al.*, 1993; Torrance, forthcoming) has confirmed that a genre approach is an effective means of increasing writing proficiency.

Nonetheless, genre approaches remain controversial. There are those who believe that a genre approach takes the writing teacher beyond the basic responsibility of introducing students to the 'processes' of writing into disciplinary concerns that should be handled by the subject teacher (e.g., Spack, 1988). There are others who argue that the concentration on a limited number of classroom genres (as suggested by Kress, 1982) may have unfortunate educational consequences by privileging certain stereotypic genres that are "debilitating in terms of making meanings" (Dixon, 1982: 18) and prevent the development of an awareness of alternative forms. Similarly, Widdowson (1983) has warned of the dangers of implying a necessarily strong relation-

ship between form and function in teaching writing on the basis of "moves." In a similar vein, Brookes and Grundy (1990: 29) see the danger of genre becoming "a rather restrictive master."

Others have criticized genre analysis for failure to consider the broader context of academic writing. Writing scholars such as Bazerman (1988) and Myers (1990a), although essentially sympathetic to the aims of genre analysis, have suggested that the initial work on "moves" in genre analysis suffers from not having considered the disciplinary environment in which academic writing takes place and which has a major influence on the nature and form of the communication. In a similar vein, Prior (1995) is critical of the tendency of genre analysts to concentrate exclusively on the text and to neglect the ongoing discussions between faculty (staff) and students that both frame and influence the nature of the actual writing carried out.

As a result of these and other criticisms, genre analysis is now much more inclined to talk of "tendencies" and of "family resemblances" rather than claim that genres have a certain fixed form and that examples that do not conform to the established model should be discounted. The changes in genre analysis can be traced through a discussion of the view of "move." In Swales' original work on article introductions (Swales, 1981) and in the analyses of those working in that tradition (e.g. Dudley-Evans, 1986; McKinlay, 1982; Peng, 1987) moves are seen as text elements that are obligatory if the text is to be acceptable as an example of the genre. This is certainly the case with Swales' model for article introductions; Swales originally suggested that there were four basic moves:

Introduction

Move 1:	Establishing the Field
Move 2:	Summarising Previous Research
Move 3	Preparing for Present Research (often by identifying a gap in previous research)
Move 4:	Introducing Present Research

These four moves are present in the majority of the introductions analyzed (approximately 75% in the original analysis). This obligatory presence and ordering applies less to the moves in the discussion section, but here it is a case of certain logical sequences of moves in which, once a choice has been made to follow a certain route, the writer is obliged to follow with a certain sequence of moves. Hopkins and Dudley-Evans (1988) suggested the following moves as characteristic of the discussion section:

Discussion

1. Background Information
2. Statement of results
3. (Un)expected result

4. Reference to previous research (comparison)
5. Explanation of Unsatisfactory Result
6. Exemplification
7. Deduction and Hypothesis (since modified to Claim)[1]
8. Reference to Previous Research (in support of a claim)
9. Recommendation
10. Justification

These moves occur in cycles in which the writer chooses an appropriate sequence of moves. Thus, although only certain moves occur in a given cycle, it would be wrong to consider certain moves, e.g., *Statement of Results* as obligatory and others optional in the way that Halliday and Hasan (1989) do. The moves occur in sequences in which once a certain move is chosen the writer is obliged to follow with other specified moves. Thus a Move 3 would normally have to be followed by a Move 5 explaining why the result was unsatisfactory; similarly a Move 7 (now called a *Claim*) will normally be followed by a Move 8 supporting the *Claim*. It may also be inappropriate to call these sequences of moves "cycles" as this implies repetition rather than development of an argument; Hozayen (1994) prefers to refer to "move configurations."

The influence of writing scholars and sociologists of science that we have referred to above (notably Bazerman, 1989; Myers, 1990a; and Latour & Woolgar, 1979) has led to a realization that an analysis of moves, however useful pedagogically, may be rather unidimensional in that it concentrates almost exclusively on what is there in the text and may not account adequately for the writer's rhetorical strategy. Mauranen (1993) has suggested a distinction between "generic" and "rhetorical" moves, the latter reflecting the writer's strategy in constructing an argument. While the notion of a rhetorical move is clear and useful, it is not immediately clear what Mauranen sees as constituting a generic move.

ADAPTED MOVE MODELS

Swales' adapted model for the article introduction (Swales, 1990a: 141) not only takes account of a number of reported difficulties in applying the original four-move model but also shows greater sensitivity to writers' rhetorical or "social" purposes in structuring and wording the introduction. His categories appear rather more "sociological" than linguistic. They are the following:

Introduction

Move 1 Establishing a Territory
Move 2 Establishing a Niche by
Step 1A Counter-Claiming
or
Step 1B Indicating a Gap

or
Step 1C Question Raising
or
Step 1D Continuing a Tradition
Move 3 Occupying the Niche[2]

A similar adaptation of the original work on the moves suggested for the *Discussion of Results* section (Hopkins and Dudley-Evans) has been made by Berkenkotter and Huckin (1995: 41). They argue that the moves can be ordered into a set of higher level units that reflect the moves posited for the introduction. These moves are essentially the same as those in the introduction, but are in reverse order.

Discussion
Move 1 Occupying the Niche
Move 2 (Re)establishing the Field
Move 3 Establishing Additional Territory

I have argued that the adapted models for moves in the article introduction and discussion described above have, to a large extent, answered criticisms that moves fail to take account of the broader context of academic writing.

However, the question still remains of whether the use of moves in the teaching of academic writing, especially in teaching graduate students to write dissertations, is justified. If we follow the argument put forward by Dixon (1982), we may, by teaching a system of moves, be imposing an over-rigid model of writing that runs the risk of restricting rather than encouraging the individual writers in the expression of the ideas they wish to put forward. It can be shown clearly that the early genre analysts were not advocating rigid models of the texts they analysed and would be embarrassed by the rather unthinking applications of their analyses. Nonetheless, there is little doubt that some teaching of writing has suffered from lack of flexibility, and that the moves suggested for the introduction section have sometimes been applied to other genres, e.g., the essay, or part-genres,[3] e.g., the abstract, for which they are inappropriate.

APPROACHES TO TEACHING

Two issues are relevant here. The first is the question of how prescriptive teaching based on genre analysis should be. The second is the extent to which the teaching of academic writing to non-native speakers differs from similar teaching to native speakers.

The question of prescription related to genre analysis is an extremely difficult one. Much material seems to follow a pattern of introducing a model of a particular part-genre such as the introduction or the discussion, developing familiarity with the pattern of organization in that part-genre through

exercises that involve some kind of mini genre analysis on the part of the student. This is followed by exercises that introduce and manipulate relevant language forms. The sequence of exercises is then rounded off by an activity which requires the writing of a short text that brings together both the generic and the linguistic features practiced in the unit.

While this basic sequence has many merits, there is a clear danger that in the hands of an insensitive or inexperienced ESP teacher it will become over-prescriptive. Variations in the moves used in the part-genre need to be acknowledged, and variety in the linguistic forms for the expression of the moves needs to be encouraged. Genre analysis is still at a relatively early stage of development, and much more work is needed before we can be confident that the models specifying the moves used in different part-genres accurately reflect the range of possibilities in different academic disciplines and the choices open to the writer. A good example is that of the Abstract where it has been argued (Salager-Meyer, 1990) that the typical pattern of moves found in an abstract is *Purpose-Method-Results-Conclusion/Recommendations*. But, as Ayers (1993) notes, 48% of the abstracts Salager-Meyer surveyed in medical journals do not match this model and suggests that these abstracts are "flawed." She does not appear to consider the possibility that the model for abstracts that she has developed may be over-simplified.

A key factor to consider here is how much experience students have had of writing either in their first or second language. It is not uncommon to find that some international students at British universities have had relatively little experience of extensive academic writing even in their first language. Their undergraduate courses may have been dominated by lectures and the examinations by multiple choice answers or answers that involve much more calculation than writing. Such students will need a fairly basic introduction to conventions of writing and the expectations about what an essay, a technical report or a thesis will involve. These students will also need more detailed work on the moves of different sections of theses and their language exponents.

With students who have had experience of writing, either in their first language or in English, the situation is very different. They are aware of the basic features of academic writing, but need to become aware of how these features differ in English academic writing from their own language. At one level, students need to develop greater sensitivity to ways in which they can use the conventions to develop their individual expression and to make their own impact on the discipline. At a lower level they need to develop a wide repertoire of linguistic exponents of the various moves that they wish to make. The situation with native speakers is similar, except that they will normally already have a fairly wide repertoire of linguistic exponents.

Genre analysis is particularly useful for the students with relatively little experience of writing. As Brookes and Grundy (1990) have argued, this will

usually be in three stages, the first being the reading stage that precedes the writing stage. An awareness of the generic structure of the texts read will have a positive effect on future writing. The second is the immediate planning stage (Brookes and Grundy, 1990: 28) where the findings of genre analysis will help writers grasp what is expected in the genre they are proposing to write. The third stage is the draft stage in which an awareness of genre conventions will help in the ordering and re-ordering of text.

With students with relatively little experience of writing it has been found that Swales' original four-move model for the introduction and Hopkins and Dudley-Evans' (1988) ten-move model for the discussion section have been very effective for teaching purposes. Their more explicitly linguistic orientation and greater concern with the exponents of the moves probably account for this. The dangers of an over-prescriptive approach are, of course, particularly strong with these students, especially as they themselves may be looking for THE ANSWER to their writing difficulties. But it is possible to strike the right balance by teaching the model for the genre as a means of structuring ideas and as the basis for the introduction of relevant linguistic forms.

With students with a considerable experience of academic writing, either in their first language or English (thus including native speakers), the genre approach needs to emphasize genre as a means of marshalling ideas into an appropriately ordered and expressed text. Genre analysis provides a way of introducing and discussing the expectations of the academic community in general and the discourse community that the students aspire to join in ways that are comprehensible to both the language teacher and the student. In this regard, Swales' more socially oriented three-move model and Berkenkotter and Huckin's model for the discussion section have proved more effective as a launching pad for discussions about issues about writer stance, the need to make appropriate use of hedging or politeness strategies in presenting claims and the need to use persuasive rhetoric to establish a niche for research and the validity of claims. The models provide the basis for discussion about the difficulties and opportunities for students in finding the right balance between what they want to say as individuals and how they wish to express it, and the expectations of the discourse community. It has often been argued that the "apprentice" writer has less freedom than the experienced and established writer in adapting or flouting the conventions; nonetheless there is still the opportunity to mould the template of the genre to meet particular needs. Some examples are in order here. In the first exercise quoted below (taken from academic writing materials used at the University of Birmingham) students have to think about explanations, how likely the explanation for the given situation they provide is, and therefore how "hedged" the explanation needs to be:

Exercise
Eight situations are listed below. You will be allocated 3 or 4 of them. You should think of three explanations for each one and list them in your personal order of likelihood.

Next, in pairs, describe in turn one of your situations and give your explanations. The speaker's choice of language should enable the listener to note down the explanation in order of likelihood (so don't always give your ideas in the same order).

At the end compare the completed tables. If they are not identical, there has been some breakdown in communication which you should discuss.

Situation	most likely		least likely
a. the failure of the coffee crop b. the brittleness of a piece of metal c. the crack in a road pavement d. an unexpected loss of heat energy e. the failure of the potato crop f. the fracture of a piston g. a breakdown in the assembly line h. unemployment in Britain			

The second exercise type is that described by Swales (1995:13) illustrating some of the principles of the textbook *Academic Writing for Graduate Students* (Swales and Feak, 1994). In the exercise (Swales and Feak, 1994: 94-95), students read a short text and are asked to say whether four comments made by the supervisor (advisor) are justified or not. This engages students in thinking both about the expectations of the academic community and of their relationship with their supervisor. It is not uncommon for students to be surprised that it may be possible to take up and disagree with points made by their supervisor.

CONCLUSION

In this short paper I have attempted to describe some of the dangers of adopting a genre approach to the teaching of writing, but have argued that, despite these dangers, such an approach has much to offer, both to the inexperienced and experienced writer.

As in most of the work in using a genre approach for English for Academic Purposes work, I have focused on the teaching of academic writing and the use of research into the academic writing in teaching

graduate students to write research papers. I have recognized the dangers of an over-prescriptive approach that implies that all that students have to do is learn a basic move structure for each of the sections of the research paper.

There is, however, another danger. There is a considerable body of research into the nature and structure of the academic article. Although some variation according to discipline and degree of formality of the journal in which the article is published has been noted, the academic article does appear to have a predictable structure that is widely recognized.[5] This is not the case with the other main genres that students need to be able to write in an academic context: the essay and the thesis. Attempts to apply a move approach to both the analysis of the essay and to the teaching of essay writing have not, at least to date, come up with anything as tangible or as practical as the models for the different sections of the article. Similarly, little work has yet been reported on the thesis, apart from a number of "how to write your thesis" handbooks and some work on the rather shorter and more limited MSc thesis written on a British-taught Masters course (Dudley-Evans, 1986; Hopkins and Dudley-Evans, 1988; Dudley-Evans, 1994). Given the increasing numbers of students, especially international students, undertaking Ph.D. level research, much more work needs to be done to establish the particular characteristics of the thesis, and determine how it differs from the research article. Is the thesis simply an extended version of the article, with different chapters corresponding to the different sections of the article? Or does each main chapter that presents a particular study follow its own *Introduction/Methods/Results/Discussion* (IMRD) format? Do the findings about downgrading of the Methods sections in articles (Berkenkotter and Huckin, 1995) apply to theses? Does Thompson's (1993) finding that *Results* sections in Biochemistry papers contain a significant amount of commentary also apply to theses? Do the Berkenkotter and Huckin's, and Hopkins and Dudley-Evans' models for the *Discussion* section of an article or MSc dissertation work for a Ph.D. thesis discussion? How does the *Review of the Literature* chapter that a thesis will virtually always contain relate to the *Introduction*, which will also contain references to the relevant literature? The answers to these questions will greatly enhance the range of genre analysis and the teaching of academic writing to graduate students.

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Notes:

1. In the original model these were two separate moves.
2. The full Move/Step model is not given here; it can be found in Swales (1990:141).
3. "Part-genre" is a term coined by Ayers (1993) to describe a section of a full genre that has its own specific pattern of organization. An introduction to an academic article cannot be described as a genre as it is only one section of the genre of the academic article, but, as Swales (1981 and 1990) has shown, it does have its own distinctive pattern of organization, which is different from that used in other sections of the article. Hence the need for the term "part-genre."
4. This particular exercise was devised by M.J. St. John.
5. It should be noted, however, that the Anglo-American model for academic articles now widely used internationally, does differ from models favoured in what we might call "other national rhetorical styles." For discussion of this point see Mauranen (1993).

12

Concordancing and Practical Grammar

Tony Jappy

This paper illustrates one way in which the computer can be used to complement and exploit a theoretical course in English grammar. The practical application of grammatical knowledge in the computer-assisted analysis of various genre categories offers a macroscopic, or "bird's eye," view of the texts in the corpus. The work allows us to test assumptions concerning the linguistic structure of given types of discourse. After a brief review of relevant aspects of the English verb phrase, the paper discusses the methodological problems of concordancing and offers a simple methodology for analyzing results. Finally, the paper shows how valid, and in certain cases, surprising conclusions can be drawn from this form of macroscopic discourse analysis.

INTRODUCTION

The purpose of the present study is to describe how computer-assisted concordancing can be taken from the field of research and be put to pedagogical use in a TESOL environment. This is now possible with the general availability in the classroom of sophisticated computational technology, together with relatively user-friendly commercial text retrieval programs such as MicroOCP, MicroConcord, TACT and Wordcruncher.[1] The paper will examine the distribution of the English verb phrase in a commercially available corpus and take the reader step by step through all the stages of one form of pedagogically-oriented concordancing.

To this end, the study first shows how the verbal forms of English relate to two ways of constructing propositions; it then illustrates how concordance programs can retrieve the appropriate linguistic data from an interesting and manageable corpus; finally, it discusses the problem of processing and harmonizing the data returned in the searches and gives a simple statistical

method of obtaining and interpreting information from these and similar data. It will be seen that, although obtained in a practical teaching environment, the results yield interesting insights into the nature of the distribution of verb forms over the genre categories investigated, thereby contributing to the students' increased grammatical awareness.

THE SUBJECT-PREDICATE RELATION IN DISCOURSE

Since Aristotle, the proposition has been considered the basic item of information in discourse.[2] One of the most fundamental linguistic operations involved in the production of propositions is the association, by the speaker, of a subject (S) with a predicate (P). This, it will be shown, determines the equally fundamental distinction made within the English verb phrase between the so-called "contiguous," or simple forms, as in *I see, I saw,* etc., where the relation between subject and predicate is direct and immediate, and the "non-contiguous," compound forms, where the relation between subject and predicate is mediated by various types of auxiliary and combinations thereof, e.g., *I have seen, I was seen, I didn't see, I might have been seen, etc.* This distinction then constitutes the basis of our study of the macroscopic distribution of the two distinct "patterns" of predication, S_P and S_AUX_P, and the various verbal forms which realize them, across selected genres in this particular corpus of contemporary English.

In order to comprehend fully the formal distinctions utilized in the concordances, and to understand the objective or subjective values that can be attributed to them, consider the following sets of example utterances, which all conform to the S_P pattern:

(A1) I came, I saw, I conquered.
(A2) Lear walks to the front of the stage, bows to the Fool,....
(A3) Lineker runs down the left wing ... dribbles past a defender ... gets his cross in....
(A4) Gary Lineker plays for Tottenham.
(A5) My friend Jack eats sugar lumps.
(A6) Your train leaves at nine-fifteen.

Utterances (A1-3) are examples of narration, i.e. of the representation of events in sequence, whether in narrative, stage directions or sports commentary.[3] In (A4-6), on the other hand, the simple verb forms are used, not to narrate events in sequence, but to characterize the subject of the predication in various ways. Discourse characterized by these forms, which can conveniently be subsumed under the general term "reporting," tends to be factual, objective and "positive" in the sense that it represents only what is the case.

Fortunately, linguistic representation in English is not restricted to such forms, and utterances (B1-8) below variously exhibit the expression of the

speaker's subjectivity. These examples fall within the broad linguistic categories of aspect, the passive voice, mood and modality, and illustrate the S_AUX_P pattern:

(B1) Mrs. Thatcher is visiting Zambia.
(B2) Gale-force winds have caused havoc all across the continent.
(B3) High winds and heavy seas have been causing further problems in the southern part of Britain.
(B4) Passengers were led to safety after a fire broke out on the London Underground.
(B5) My study doesn't have a bar.
(B6) PET DOG MAY TRAP KILLER
(B7) Rain will spread from the west.
(B8) John should have been digging the garden.

Utterances (B1-3) illustrate the realizations of aspect in English, by which we mean the various ways in which the speaker represents the degree of completion of a process with respect to some reference point. Since selecting a reference point and using it to evaluate the degree of completion of a process are discursive strategies, and not features of the referential world, it follows that the various aspectual markers of English (*have* + *en*, *be* + *ing*, and their combined form) to be found in an utterance are traces of the speaker's involvement in the utterance and not a feature of the situation being represented. In (B4), by contrast, speaker involvement takes the form of a radical change of sentence perspective, in which the object of the process functions both as subject and theme of the clause. Since there are obviously no passive events in the referential world, it follows that any change in Subject Verb Object (SVO) perspective in English can only be a discursive strategy, and, in the resultant passive voice, the subject and predicate are mediated by the marker *be* + *en*. Similarly, with indications of mood: To put matters crudely, as there simply is no such thing as a negative or interrogative situation, it follows that any negative or interrogative elements in an utterance can only have been introduced by the speaker. Typically, but not exclusively, these negative and interrogative elements are carried, as in (B5), by *do* used as an auxiliary.[4] Finally, the expression of irrealis mood, and with it, degrees of the speaker's evaluation of the validity of the subject-predicate relation, is a form of subjective appreciation; in this way (B6) a headline from a tabloid newspaper, (B7) a "prediction" from a weather forecast issued by the BBC, and (B8) a counterfactual statement (he should have been, but he wasn't), all illustrate yet another form of speaker-involvement in the utterance.[5] In short, utterances (A1-7), realizing the S_P pattern, give the impression of an objective, positive report of the events represented or of individual participants

therein. Utterances (B1-8), on the other hand, realize the S_AUX_P pattern and, in various ways, express the speaker's subjective, often explanatory, evaluation of the situation or state of affairs being referred to (cf. Hopper, 1979: 217).

We note, finally, that the present and past tenses are common to both sets of utterances, and function as signs of assertion, i.e., of the speaker's acceptance of responsibility for the proposition s/he is advancing. It thus follows that AUX, in the S_AUX_P pattern, can be expanded to (**modal**) (*have* + *en*) (*be* + *ing*) (*be* + *en*) / *(do)*, where the parentheses indicate that the item is optional; and that the distribution of *do* is parallel to that of the other auxiliaries. Since this complex predicative pattern is positively marked morphosyntactically by the auxiliary forms discussed above, the programming of a suitable concordancer to retrieve its various realizations from a set of texts provides TESOL students with an interesting exercise in applied grammar.

METHOD

The first task is to establish frequency counts for the linguistic features we happen to be interested in, here the forms of the English verb (minus the modals). We conduct the searches using Micro-OCP and the Lancaster University-IBM UK Spoken English Corpus. This corpus of relatively formal spoken English, dating mainly from the mid-80s, is principally based upon recorded material from the BBC, runs to some 52,000 tokens,[6] and comes in various guises (all in ASCII format). Note that in a TESOL environment, the orthographic version should be used in preference to one of the tagged[7] versions available. Clearly, the latter would render the grammatical analyses more trustworthy. However, experience has shown that the unnatural appearance of parsed corpora could lead to pedagogical disaster, and the texts are best edited with a wordprocessor to insert the appropriate referencing conventions.

These reference conventions show our computer program (in this case Micro-OCP) where the different genres begin and end, and also allow us to identify to the program the presence in the texts of simple present and preterit forms: Concordance programs have no way of telling whether the token *works*, for example, is a plural noun or the third person of the verb, or whether the token worked is a preterit or a past participle. While such editing is a painstaking task, it should not be forgotten that a project of this sort is a useful class exercise and that the instructor has at his disposal an unlimited supply of manual labor... Given below is an extract from one of the twelve Radio Commentary texts showing the referencing conventions, where <C Comment> indicates that the current genre category is Commentary and where the symbols % and & have been arbitrarily chosen to identify the verbal forms as the simple present and preterit respectively:[8]

<C Comment>
The New York Times correspondent &looked out of his car window,
and &told me the guerrillas had taken Suchitoto: did I want a ride? I &jumped in, and we &set off at the manic speed which, for some reason, %is a characteristic of the way all journalists &drive here in El Salvador. Suchitoto %is a particularly bullet-holed, bombed-out town; a tenuous government stronghold in the heart of guerrilla controlled territory, thirty miles north of the capital, San Salvador. Every correspondent here %agrees that the final six mile stretch through Suchitoto %is the most eerie, the scariest bit of road in El Salvador. The last reporter to be killed here, back in March, was shot dead in a crossfire on that road; another reporter's car &hit a mine there two years ago, and he too was killed; everyone's had narrow scrapes on the Suchitoto road. There &were three of us in the car, all rather nervous. The third reporter &was with the Washington Post: a war correspondent for twenty years who'd covered Vietnam. The Washington Post man &said he &hoped that, at an army checkpoint just before the final stretch to Suchitoto, they would stop us from going through. They didn't. [...]

There are various types of proprietary concordance programs available, but in the present study we restrict our attention to Micro-OCP. Although a pre-Windows software package, it can be clicked up from the Windows File Manager, is menu-driven by means of the function keys, and, on present-day 486 machines, will process the sort of program illustrated below across the small corpus described here in a matter of seconds. Moreover, unlike TACT and Wordcruncher, the program works directly on text files.[9] Given below is one of the suite of programs that are needed to retrieve all the verbal forms under scrutiny. This particular program "trawls" through the corpus for the regular and irregular plural forms of the English present perfect (e.g. not only *have worked*, but also *have heard*, *have written*, *have caught*, *have come*, etc., plus such contracted negative forms as *haven't come*, etc.):

Program 1

```
*input references cocoa "<"to">".
comments between "["to"]".
*action do concordance
 include only phrases "have*d", "have* *n", "have* *e",
 "have* *k", "have* *ng".
 references C = 5. Contexts sorted by references.
*format layout length 78 and lines 0 below entries.
 references right. headwords left same line. titles
 "have*.ins" left on line 1.
*go
```

Concordancers generally work by matching patterns supplied by the user with the words found in the corpus. Our patterns are indicated in the *include only phrases* line in the program above, where the * symbol is a wild-card

matching any (possibly null) sequence of characters following the stem *have*. Obviously, it is possible to program Micro-OCP to produce a concordance based simply upon the string have, but the disadvantages are, firstly, that the student is not required to think about the variety of patterns associated with the irregular present perfect forms and, secondly, the results would need a considerable amount of editing to weed out inappropriate items. As it is, the second entry in the concordance[11] below has to be discounted as the *have* *t* pattern has "pulled in" a verb + noun group and not a present perfect:

Table 1. Extract from the concordance produced by Program 1

have*.ins

eir selection. They must	**have brought** this lot by the foot. **I** can't	Ficti
rain - northern areas will	*have right intervals*	*News*
tted dark. His eyes must	**have burst,** he thought, they were full of	Ficti
these economic ideas	**have cast** their spell	Lectu
before, it wouldn't	**have caused** the stir t	Lectu
rain and gale-force winds	**have caused** havoc all	News
Jews. And now attitudes	**have changed:** Germans are going to	Comm
why God should	**have chosen** to create	Lectu
nobody could	**have conceived** the man	Magaz
says Mr. Powell's remarks	**have dashed** government hopes that the	News
entation - the smaller parties	**have done** unexpectedly well	News
said the lion. I could easily	**have eaten** him, only I'd promised you.	Ficti
one hundred thousand	**have gone**, and West Germany	Comm
learn Turkish, housewives	**have got** together to help draw up the	Comm
families who lived in them	**have left,** taking advantage of a double	Comm
ough fine Gael and Labor	**have lost** ground to the opposition, it's	News

Concordance-based searches of this sort,[12] which have to be processed by the students in an exercise euphemistically referred to as "hand editing," i.e., manual counting, yield the sort of results given on Table 2:[13]

Table 2. Frequency Counts for Eleven Linguistic Features:

Category	Comm.	News	Lect.	Mag.	Fict.	Total
Tokens:	9066	5235	11922	4710	7299	38232
simple present	164	57	139	61	44	465
preterit	175	81	182	88	522	1048
present perfect	71	74	44	29	25	243
past perfect	25	18	29	5	29	106
present continuous	31	6	8	6	21	92
past continuous	12	5	5	3	44	69
passive	28	38	15	5	1	87
do*(n't)	9	0	12	2	23	46
did(n't)	12	3	6	14	17	52

The next stage is to make sense of the widely differing genre lengths and the differences in the totals of the observed frequencies returned per verbal feature. As matters stand in Table 2, it is impossible to compare the frequency counts for the preterit and passive features, for example, as they have different totals (1,048 and 87 tokens respectively), or, say, the frequency counts for all features for the fiction and magazine genres, as these do not have the same number of tokens. Finally, since this is a course for students majoring in English as a foreign language, the statistical treatment of the data needs to be relatively simple. These problems can be resolved by adopting a simple strategy advanced by the French statistician, Michel Volle (1974).

Volle's preoccupation was with the often voluminous and unwieldy tables with which statisticians are obliged to work when writing reports. He suggested that the tables themselves be relegated either to the official publications from which they were extracted or to an appendix at the end of the statistician's report and that only the most "informative" cells in the table be discussed. He proposed a very simple way of identifying such cells, which amounts to adapting the well-known test for significance, the chi-squared test. Once significance is computed, Volle identifies the informative cells as those "partial" chi-square cell values which contribute the greatest percentage of "information" to the chi-squared total. Thus, in a 20 by 20 contingency table, for example, eleven cells out of the possible four hundred might contribute, say, 65% of the information in the table, in which case the statistician would restrict his attention to these. This method is adapted to identify the greatest value per feature from the raw frequencies given on Table 2, and consists of the following stages:

First, one calculates what the expected figure would be if the average distribution of each structure in each genre were equal. This is achieved by multiplying the total number of occurrences of a given form by the total number of tokens for each given genre category and dividing the result by the total number of tokens in the corpus:

total tokens	**x**	total tokens	÷	total tokens
of **form**		in **genre category**		in **corpus**

For example, there are **243** tokens for the present perfect in the corpus. In the genre **Commentary** there are **9066** tokens. The total number of tokens in the corpus is **38232**: 243 x 9,066 = 2,203,038 ÷ 38,232 = 57.6. In other words if all genres had equal representation of each grammatical structure, one would expect 57.6 occurrences of present perfect in the *Commentary*. In the example below, the features are the present and past perfect forms, and the symbols O and E represent, respectively, the observed and expected frequencies:

Table 3. Computing the expected frequency (E) per cell

Category	Commentary	News	Lecture	Magazine	Fiction
Tokens:	9066	5235	11922	4710	7299
	O E	O E	O E	O E	O E
present perfect	71 57.6	74 33.3	44 75.8	29 29.9	25 46.4
past perfect	25 25.1	18 14.5	29 33.1	5 13.1	29 20.2

Second, one uses the chi-squared value to calculate how far the actual occurrence of the observed structure differs from the expected distribution. Each cell is therefore computed from the formula $(O\text{-}E)^2/E$. For example as calculated above, the expected number for the present perfect in the *Commentary* was 57.6 compared to the observed frequency of 71. Following the formula, we obtain: 71-57.6 = 13.4 x 13.4 = 179.56 ÷ 57.6 = 3.1. As before, the example uses the present and past perfect features:

Table 4. Computing chi-square

Cat.	Comm.	News	Lect.	Mag.	Fict.	chi-sq.
present perfect	3.1	49.7	13.3	0.02	9.9	76
past perfect	0	0.8	0.5	5	3.8	10.1

Third, in order to extract the maximum amount of information from the calculation of the test, each cell's contribution to the chi-squared total is expressed as a percentage of that total (Table 5). For example, if we add together all the figures in Table 4 for the present perfect, we get a total of 76 (3.1 + 49.7, etc). The figure of 49.7 for the genre *News* in present perfect is 65% of the total (49.7 ÷ 76 x 100 = 65%). The following example is limited to the present perfect, since the chi-squared scores for the past perfect turn out to be insignificant and therefore do not appear in subsequent tables:

Table 5. The results obtained from computing "Volle" scores per present perfect cell

Cat.	Comm.	News	Lect.	Mag.	Fict.
pres perf	+	+65%	-18%	-	-13%

Table 5 shows that for the present perfect feature the *News* category scores heavily (65% of the "information" contributing to the chi-squared total) while the *Lecture* and *Fiction* categories exhibit significant deficits as far as this particular feature is concerned.

Fourth, the method is applied to all the the data returned by the concordances as they appear in Table 2, and the scores compared.[14] Note that, for the sake of simplicity, the results given in Table 6 arbitrarily include only cells contributing at least 10% of the "information."[15] One must calculate significance per row and not for the total number of cells in the table; in other words, Table 6 is a compilation of ten different sub-tables:

Table 6: Volle scores for cells contributing at least 10% of the information to the total.

Category	Commentary	News	Lecture	Magazine	Fiction	chi-sq.
simple present	+52%	-	-	+	-45%	49.8
preterit	-	+	-10%	-	+80%	644
present perfect	+	+65%	-18%	-	-13%	76.0
present continuous	+11%	+40%	-41%	-	+	36.3
past continuous	-	-	-14%	-	+78%	91.5
passive	+	+69%	-	-	-18%	83
do*(n't)	-	-20%	-	-	+72%	32.0
did(n't)	-	-11%	-28%	+39%	+22%	22.9

Thus, frequency counts converted into percentages of this sort are readily comparable. However, since the chi-squared scores pertain only to the data set out in Table 2, the disadvantage is that any conclusions drawn are inevitably corpus-specific.

Finally, we round the percentages on a scale from 1 to 10, with minus values omitted as displayed on Table 7:

Table 7. Volle scores simplified to show the single most important cell per feature:

Category	Comm.	News	Lect.	Mag.	Fict.
simple present	5	-	-	+	-
preterit	-	+	-	-	8
present perfect	+	7	-	-	-
present continuous	+	4	-	-	+
past continuous	-	-	-	-	8
passive	+	7	-	-	-
do*(n't)	-	-	-	-	7
did(n't)	-	-	-	4	+

DISCUSSION

Table 7 is obviously a very simple "rule of thumb" representation of the relation between linguistic feature and genre in this particular corpus, but it nevertheless yields highly suggestive results encouraging the student to reflect upon the compatibility of the values of the verbal forms with the genres with which they are associated in the corpus. If we consider the fiction genre, for example, we find that fiction in this corpus tends to favor past forms.[16] Furthermore, there is a very marked compatibility between this genre, the subjective value of past imperfective aspect (the past form of ***be*** + ***ing***, here +8), and the event-oriented, objective nature of the preterit (+8). This appears to confirms Hopper's statement (1979:216) that imperfective aspect has a backgrounding, commentative function with respect to the foregrounding function of narration. There is, however, a noticeable incompatibility between the fiction genre and the use of the passive in its narrative function (-18% on Table 6), suggesting that the change of sentence perspective that the narrator operates by means of the passive is less: "natural" in narrative than the thematically more consistent use of SVO order.[17]

Table 7 also shows that three of the five genres are positively characterized by the features under investigation and, although obtained in a teaching project and not a full-scale piece of research, this fact raises two interesting theoretical issues. Firstly, as mentioned above, the *Fiction* genre is characterized by the objectivity of the simple past and the subjectivity of imperfective aspect. Secondly, and no less interestingly, the *Radio News* genre obtains a high rating for the subjective nature of the present perfect (+7), with the

resultative value it derives from the speaker's relating the consequence of some past event to the moment of broadcast, and an even higher rating for the clause-level speaker manipulation exhibited by the passive (+7), an index of the news editor's preoccupation with the victims of such events and concern for thematic continuity within each news item being presented. No doubt the BBC would be chagrined to learn that its news broadcasts are less than objective, but the fact of the matter is that the examples to be found in the SEC corpus display two features that indicate considerable manipulation of the linguistic medium by the speaker, and to that extent are subjective in the sense ascribed above to the S_AUX_P pattern. Interestingly, Biber characterizes his dimension 5 as seeming to "mark informational discourse that is abstract, technical and formal versus other types of discourse" (1988:112-113). In other words, discourse obtaining high scores for such features as passives with or without an explicit agent will generally be abstract, technical and informal. Typically, this is the dimension of supposedly objective scientific reports. However, as the data provided by the news broadcasts show, any departure from SVO word order with its attendant change of sentence perspective is a subjective rather than objective discourse manoeuvre. For reasons of cohesion, the report-writer is in fact imposing his own perspective-seeking subjectivity upon the reports given of the events in question.

CONCLUSION

Firstly, as a class project this "bird's-eye" view of texts and the verbal forms that compose it can yield insights into the functions of the English verb. Moreover, the results tend to confirm initial assumptions concerning the objective or subjective nature of the categories involved. As expected, the most flexible of the genres, *fiction*, shows the greatest range of values.

Secondly, while the figures presented in Tables 2, 6 and 7 obviously have only a relative, corpus-specific value, unlike the "absolute" value of Biber's descriptive statistics, they tend to confirm the meanings generally attributed to the features investigated, and illustrate a simple method for the investigation of other linguistic properties of corpora.

Thirdly, certain compatibilities and incompatibilities to be found in corpora would no doubt be more thoroughly processed with a specialized text-processing statistical package. However, as such packages generally begin by lemmatizing[18] texts before processing them, much of the information discussed above would be lost, and, as any non-statistician will appreciate, such a program is more appropriate to a research laboratory than to a TESOL environment, where the techniques described above represent the upper limit in statistical complexity.

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guistics, and computing and linguistics. He has been teaching courses in computing since 1985.

Notes:

1. Micro-OCP and its less versatile but more user-friendly stablemate, Micr-Cord, can be obtained from the Oxford University Press. Tact is bundled with the Lancaster University-IBM UK corpus described below and obtainable from the Norwegian Computer Centre for the Humanities, Harald Harfagres gate 31, N-5007 Bergen, Norway. For Wordcruncher, currently shipping in a Windows version, contact Johnston & Company, PO Box 6627, Bloomington, IN 47407, USA. For the reader wishing to take the macroscopic analysis of texts further, I would recommend Butler, 1992 as a good introduction to the logistics of the problem, and Biber, 1988, to which I make frequent reference in the text, as an outstanding example of the study of linguistic variation across corpora.
2. It is self-evident that, unlike the proposition, *John is a student* neither the expression *is a student* nor *John is a* yields information.
3. Care must be taken with the term "commentary." for the simple verb forms of sports commentary are, in fact, examples of narration, and must not be confused with the metalinguistic term "commentary." The idea of distributing verbal forms within a narration-commentary "dimension" was first mooted by Weinrich 1973. The distinction was taken up and developed by Paul Hopper in a series of articles, principally Hopper 1979, and now seems generally established.
4. Note that mood can be realized by any of the auxiliaries, and is not the exclusive preserve of *do*.
5. The discourse in which such forms are found tends to be factual and objective: As the French linguist Henri Adamczewski put it, in such cases the presence of the speaker is not coded (1982: 41). The non-contiguous forms, on the other hand, all exhibit various facets of the speaker's involvement in the utterance. Obviously, limitations of space preclude a more exhaustive exposition of the theoretical issues involved in the interpretation of the various forms of the verb phrase. For this, the reader is referred to the discussion and references to be found in the article by Rémi Lapaire and Wilfrid Rotgé in Chapter 15.
6. A token can be described as the actual word in the text. If one had the following in a span of text: *comes, coming, comes, come, come,* one would have five different tokens for the type *come*. On the other hand, one might have two tokens for two different types:

   He *heads* for home as fast as he can.

   Tonight, *heads* will roll.
7. A tagged version might label each verb, for example, according to tense and aspect.
8. In the present case, the analyses have been restricted to the five major genre categories in the corpus: Radio Commentary, Radio News, Radio Lectures, Radio Magazines and Radio Fiction, totaling approximately 38,000 tokens.
9. Prior to any analysis, TACT for example, requires the construction of a text database. MicroConcord, on the other hand, will work not only with ASCII files but also with those produced with most of the major word-processors.
10. Obviously, the search pattern could be made more general by including only phrases such as "ha* *d" instead of writing separate programs for "has* *d," "have* *d" or "had* *d" etc.: The programming would be simplified, but the editing of the output file would be fastidious to say the least, since it would include

phrases such as "*(his) hands moved,*" "*hardly touched,*" for example, which both conform to such a search pattern. Note that each instruction must be terminated by a period.

11. Called a KWIC concordance, it displays keywords in context. In the example, the keywords have context to the left and right, are highlighted in bold, and the genres they belong to are indicated by their first five letters (cf. line 6 in the program) on the right-hand side.
12. To obtain a list of all occurrences of the simple present and the preterit, one would normally program Micro-OCP to produce, not a concordance, but a word list of just those words beginning with % and & respectively. In this case, the Micro-OCP **words* option (not needed in the program given above) would have to specify that these characters are "additiona" letters of the English alphabet.
13. As with the tagging of the simple present and preterit forms, such a task is daunting to the individual, but as this is a class project, the work can be divided up conveniently and parceled out to the advantage of one and all.
14. The same remark applies here. Obviously, the results should be cross-checked, but with a class of volunteers, this should not present a problem.
15. Significance was calculated at <0.001 for 4df.
16. Note that the present perfect obtains a negative value (-13 on Table 6), which is surprising as perfective aspect is one of Biber's principal indices of narrative concern.
17. This surmise is confirmed by the figures for third person subject pronouns (+8) and hapax legomena (-4), which were not included in the chart. The pronoun value suggests a higher degree of topic-subject continuity within narrative episodes than in the other genres, and the high negative hapax value suggests correspondingly less lexical variation, a rough index of narrative and thematic unity.
18. To lemmatize a word is to find its dictionary form.

SECTION FIVE

APPROACHES TO TEACHING GRAMMAR

13

Describing And Teaching English Grammar With Reference To Written Discourse

Marianne Celce-Murcia

This article emphasizes the current need in the ESL/EFL discipline to re-analyze virtually all of English grammar at the discourse level. Short illustrative texts focus on a variety of written English discourse genres to contrast sentence-level description and instruction with discourse-level description and instruction for the following four forms and structures:

- *demonstratives*
- *tense and aspect*
- *existential "there" sentences*
- *it clefts*

At least two paragraph-length discourse-level examples are presented for each grammar feature discussed in the paper to illustrate the workings of grammar in written discourse. The importance of doing data-based analyses of grammar — using corpora and using authentic data — is discussed.

INTRODUCTION

Most ESL/EFL teachers tend to view 'grammar' as an exclusively sentence-level phenomenon. This perspective is outmoded and has had negative consequences for the way in which grammar is described and taught. A sentence-based view of grammar is also inconsistent with the notion of communicative competence, which includes at least four interacting competencies: linguistic/grammatical competence, socio-linguistic competence, discourse competence, and strategic competence (Canale, 1983).

Since communicative competence is the foundation of communicative language teaching, it is clearly important that we move beyond the sentence level in our conceptions of grammar and understand the relationship between the morphological and syntactic aspects of linguistic competence, and the various sociolinguistic and pragmatic aspects of discourse competence. This paper will attempt to describe the nature of this relationship by examining the discourse function(s) of several grammatical structures in written English; namely, demonstratives, two different tense-aspect patterns, expletive *there* constructions, and *it* clefts.

ESL/EFL teachers are not the only professionals who tend to restrict the study of English grammar to the sentence level. The study of morphology and syntax in contemporary linguistics tends to be predominantly sentence level. Moreover, many formal linguists (e.g., Chomsky, 1957, 1965) have a preference for thinking of grammar as an autonomous and context-free system. In contrast to this perspective, functional linguists (e.g., Givón, 1979; Halliday, 1985) argue that very few "rules" of grammar are completely context free. The following list is fairly comprehensive for context-free rules in English:[1]

- subject-verb agreement[2]
- determiner-noun agreement
- use of gerunds after prepositions
- reflexive pronominalization at the clause level

These are the local agreement rules that operate within sentences in isolation as well as in sentences occurring in context. Gender and number agreement rules that operate in languages such as French, Spanish, and German are also examples of such local operations.

In contrast to this small set of local agreement rules, the vast majority of grammatical choices that a writer makes represent "rules" that depend on certain conditions being met in terms of meaning, situational context, and/or discourse context. Such grammatical rules are clearly not context-free. All languages have such context-dependent, pragmatic rules (Levinson, 1983). If one takes English as the language under study, one can easily argue that all of the following rules or structures of English grammar are sensitive—at least in part—to discourse context (the list is far from exhaustive):

- use of passive voice
- indirect object alternation
- pronominalization across clauses
- article/determiner choice
- position of adverbials (phrases, clauses) in sentences
- use of existential *there*
- tense-aspect-mood choice
- right/left dislocation of constituents

- use of logical connectors & discourse markers
- use of *it* clefts and wh-clefts

In all such cases, the writer's ability to produce the form or construction in question accurately is but a part of a much larger process in which the semantic, pragmatic, and discourse appropriateness of the construction itself is also judged with respect to the context in which it is used.

One of the earliest accounts of the discourse function of grammatical forms was Halliday and Hasan (1976), in which interclausal cohesive ties (i.e., semantic and syntactic ties that cross clause or sentence boundaries) are proposed and described. Specifically, Halliday and Hasan discuss four types of cohesive ties in English that are related to the grammar of texts:[3]

1. Ties of **reference** (pronouns, possessive forms, demonstratives, etc.):

Joan bought an apple. She ate it.

Here *Joan* and *she* as well as also *apple* and *it* are coreferential (i.e., both refer to the same entity) and form cohesive ties in the text.

2. Ties of **substitution** [nominal one(s), verbal *do*, clausal *so*]:

I wanted Sarah to wear her blue dress but she wore the red one.

Here *one* replaces *dress*, forming a structural and lexical/semantic tie. *One* and *dress* are co-classificational (i.e., refer to the same class of entities) but not coreferential.

3. Ties of **ellipsis** (or substitution by zero):

If you asked me who the best candidate is, I would say Amy.

In this context *Amy* functions elliptically to express the entire proposition *Amy is the best candidate.*

4. Ties of **conjunction**:[4]

Some magazines like to feature the lean and hungry look; however, we believe that this look will not last.

Here *however* signals a tie between the clause that follows and the clause that precedes it. In this case, it means that the two clauses are related by contrast or counter-expectation, i.e., what magazines are doing now will not, in the opinion of the authors, continue indefinitely into the future—reader expectations to the contrary.[5]

SOME CONTEXT-SENSITIVE GRAMMATICAL STRUCTURES IN WRITTEN ENGLISH DISCOURSE

DEMONSTRATIVES

How do most ESL/EFL textbooks teach English demonstratives? The presentation is largely oral in nature and based on the near/far distinction, singular vs. plural number, and the pronominal vs. adjectival form. Thus, in context and in potentially fully meaningful drills (often accompanied by appropriate gestures), students can practice sentences like:

> This is a book. Read this book.
> That's a door. Open that door.
> These are pencils. Sharpen these pencils.
> Those are windows. Open those windows.

This type of physically contextualized practice is where most ESL/EFL treatments of demonstratives stop, which is unfortunate because conventions for use of demonstratives differ in extended written discourse and conversation. In expository writing, use of *this/these* presupposes that the reader has access to the referent; its use signals that the topic will persist or that the topic is something the writer wants to highlight or identify with. On the other hand, the use of *that/those*, which also presupposes reader access to the referent, can signal the end of a topic/discussion (*That's that!*), scrupulous objectivity, à temporally past reference, etc.

Demonstrative pronouns and adjectives in written English discourse are the focus of a study by Nishimura (1995). Nishimura compared book reviews (i.e., book notices) and short essays by native English authors published in the *TESOL Quarterly* during the past several years and found that demonstrative usage was far more constrained in the book reviews than in the essays. Almost all the demonstratives used in the reviews were of the form *this* or *these* (with very few tokens of *that/those*). Furthermore, most of the demonstratives were adjectival (i.e., modifying a noun head) and simply referred back to bibliographic information concerning the book under review, as the following excerpt from the final paragraph of one of the reviews illustrates (I have highlighted the demonstratives by putting them in bold and capital letters in the following two texts):

> *Focus* is an effective book: through the use of excellent illustrations and examples, it thoroughly covers the grammar appropriate to **THIS** level. Its varied approach and stimulating contexts allow for discussion of topics relevant to the adult international student...Students will likely find **THIS** text interesting and stimulating. (Wilson, 1989: 691)

The use of demonstratives in the short essays appearing in the same publication followed a different pattern. Demonstratives not only referred back to coreferential noun phrases but to whole clauses and groups of clauses.

Although the forms *this/these* still accounted for the majority of tokens, there was a much greater variety of functions and a higher number of *that/those* tokens in the essay data:

> In ***THESE*** comments I have expanded on DuFon's discussion of the sixth area of the TESOL guidelines. Research has a world view. It can be dishonestly executed to serve the aims of others, although...I believe ***THAT*** is truly rare. Alternatively, it can be proactive, helping to set odd practices on the right track, as Collier has done. I believe much research is motivated by ***THAT*** spirit. (Davidson, 1993, 162)

In the first line of this excerpt (also a final paragraph), the author refers to his own entire essay with the noun phrase ***these*** *comments*. In the middle of the excerpt he uses the demonstrative pronoun *that* to refer to an entire proposition, *dishonestly executing research to serve the aims of others*. In the final line he uses *that spirit* to refer back to another proposition *doing proactive research that helps to set odd practices on the right track, as Collier has done.*

Nishimura blanked out all of the demonstratives in the book reviews and essays in her database and asked good native writers of English to read the texts and fill in whichever demonstrative they thought was most appropriate (*this, that, these, those*). In the book reviews there was very little deviation from what the original authors had written; however, in the essays, there was a reasonable amount of deviation from the original. For example, in the passage above by Davidson, some other native speakers selected *this spirit* instead of *that spirit* in the final line of the essay. Nishimura speculates that the English writers who opted to write in *this spirit* were expressing a high degree of affect and were identifying themselves strongly with research that is like Collier's (in spirit). The original author Davidson probably selected *that spirit* because it is the last line of his essay and *that* expresses greater temporal finality than *this*. In any case, the fact that the book review genre is so highly constrained in its use of demonstratives while the academic essay genre offers much more leeway for rhetorical effect and personal style suggests that demonstrative usage may sometimes be genre specific in written English discourse. This is an area in need of further study.

TENSE AND ASPECT

In most ESL/EFL teaching materials tense and aspect markers are taught and practiced one form at a time at the sentence level:

> John goes to school every day (simple present)
> John went to school yesterday (simple past)

However, teachers often bemoan the fact that even after extended drills prac-

ticing the above forms—along with all the other tense-aspect forms, their students cannot control tense and aspect over a sequence of related sentences. They claim that their learners jump from one tense-aspect form to another without any justification when they write. This is not surprising. The functions of many tense-aspect markers at the discourse level are quite different from what students have been taught about these markers at the sentence level. For example, students are taught that the past perfect tense in English signals a time anterior to some other specified time in the past and that it does not make sense without this past time anchor:

By ten p.m. last night, I had already gone to bed.
Before he graduated from college, Joe had published a book.

There are many examples like the immediately preceding one where the past perfect is not even necessary since the presence of the temporally explicit adverbial subordinator *before* guarantees that the same meaning can be unambiguously expressed using only the simple past tense:

Before he graduated from college, Joe published a book.

If in the above sentence *before* were changed to temporally less explicit *when*, this would not be true. The meaning of the sentences would change depending on the use of the simple past versus the past perfect tense:

When he graduated from college, Joe published a book.
When he graduated from college, Joe had published a book.

These are the kinds of things advanced ESL/EFL students learn about the past perfect tense in English. However, it is important to ask how the tense gets used in extended written discourse. It is used rarely but strategically in written narratives to signal the writer's purpose for relating the narrative. Consider the following two examples:

> The students sat in the bleachers of Pauley Pavilion watching the faculty enter in their caps and gowns. Dignitaries continued to arrive while the band played a festive melody for the onlookers. To the cheers of the crowd, President Clinton came in and took his assigned seat on the podium. UCLA's 75th anniversary celebration **had begun.**

> In the 1980s researchers at Stanford University were trying to teach American sign language to Koko, a gorilla. Koko was well cared for and was surrounded by interesting objects. Her caretakers continually exposed her to signs for the food items and toys in her environment. Koko particularly loved bananas and kittens. One day she was hungry but couldn't find any bananas. She went to a researcher and made a good approximation of the sign for "banana." Koko was rewarded with a banana, but even more

> importantly, the research team knew that Koko **had made** the connection between a sign and the object it represented.

In both these texts and others like them the narrative in the simple past tense is being related so that the writer can make a point. The point is encoded in a sentence with the past perfect tense. The so-called point or gist is not a prior action or state but an important climax or culmination of everything else that has been stated. Writers use the past perfect in this type of written narrative, which one might label "purposeful narrative," because they have an important point in mind that they then express in the past perfect once the setting has been prepared with the simple past.

Another systematic use of tense shift in written discourse has been noted by Brinton (1994), who prepared grammar exercises to accompany an introductory college-level psychology text by Huffman, Vernoy, and Vernoy (1994). Brinton noticed that these psychology textbook authors frequently present a real-life illustration in the past tense:

> In 1848, Phineas Gage suffered a bizarre accident when an explosion happened at his work place. As a result of the explosion, an iron rod entered his skull and pierced his frontal lobe. Phineas recovered physically from this accident, but his personality changed forever. (Brinton, 1994:9)

The story or anecdote then becomes the basis for the authors' discussion of the significance of the anecdote and other similar events. This more general discussion invariably is stated in the present tense:

> From the case study of Phineas Gage, it appears that the frontal lobe controls much of our individual personality and defines our ability to make decisions. We now know that the frontal lobe helps us to plan and change actions.
> (Brinton, 1994:9)

Although the above is the preferred order for anecdotes and generalizations in this particular textbook, the real-world anecdote does not always occur before the authors'generalization; sometimes the reverse order occurs:

> The difference between an Obsessive-Compulsive Disorder (OCD) and milder forms of compulsion is that OCD behaviors are much more extreme, appear irrational to almost everyone, and interfere considerably with everyday life. Individuals with OCD sometimes wash their hands hundreds of times a day or spend hours performing senseless rituals of organizing and cleaning. Billionaire Howard Hughes provides an example of

> obsessive-compulsive behavior. (Huffman, Vernoy & Vernoy, 1994: 522)

After this general description of OCD, the following paragraph provides the specific case description (i.e., Howard Hughes):

> Due to his unreasonable fear of germs, he made people who worked with him wear white gloves, sometimes several pairs, when handling documents he would later touch. When newspapers were brought to him, they had to be in stacks of three so he could slide the middle one out by grasping it with Kleenex. To escape contamination by dust, he ordered that masking tape be put around the doors and windows of his cars and houses.
> (Huffman, Vernoy & Vernoy, 1994: 522)

Whichever order occurs, the real-life illustration is in the simple past tense and the authors' generalization and discussion is in the simple present tense. This is a rhetorical strategy that can be taught quite explicitly to ESL/EFL readers and writers.

EXISTENTIAL "THERE" SENTENCES

In first-language composition instruction, English writers are often advised to avoid the existential *there* construction because prescriptivists feel that it creates wordy and weak prose (Baker, 1979; Heath Handbook, 1986). In ESL/EFL instruction, oral use of sentences with existential *there* subjects (much like the demonstratives) are taught with reference to what is visible in the physical context, and their presentation is sentence-level with little or no consideration given to discourse function:

> *There is a book on the table.*
> *There are two pencils on the desk.*

In analyzing a corpus of written and spoken English, Lloyd-Jones (1987) found that such locative use of the construction accounted for only about ten percent of all tokens. What, then, are the primary functions of this construction in written discourse?

Ahlers (1991) assembled a database of expository written English and found that of 100 tokens of existential there sentences selected for analysis, only one was a sentence-level token; all the others had a discourse function.[6]

In Ahlers' corpus the major discourse function of the *there* construction was to present a major topic or sub-topic for subsequent development, as in the following example from Halliday and Resnick's (1988) introductory physics textbook:

MODES OF NATURAL SELECTION

> **There are three major modes of natural selection**, as shown in Fig. 35.4 and defined by the following list:
>
> 1. "Stabilizing selection" favors intermediate forms of a trait and operates against extreme forms; hence the frequencies of alleles representing the extreme forms decrease.
>
> 2. "Directional selection" shifts the phenotypic character of the population as a whole, either in response to a directional change in the environment or in response to a new environment; hence the allelic frequencies underlying the range of phonotypes move in a steady, consistent direction.
>
> 3. "Disruptive selection" favors extreme forms of a trait and operates against intermediate forms; hence the frequencies of alleles representing the extreme forms increase. (Ahlers, 1991: 12-13)

The above prototypic case follows a deductive presentation and reasoning style. Another salient but less frequent pattern that Ahlers found was the reverse of this (i.e., inductive organization where the details and specifics come first and the generalization with existential *there* concludes the topic and often states an important generalization. This is what occurs in the following excerpt from an economics textbook by Alchain and Allen (1972):

> The establishment of a uniform price of a good in the international market is illustrated in Fig. 36-2. In the left half of the Figure, we have the US demand for and supply of the commodity in question; on the right are the UK demand and supply schedules for the same commodity. With no foreign trade of the good, the US equilibrium price would be OP, with the quantity OM exchanged; and in the UK, equilibrium price would be OP" and quantity OM'. But with trade—and with neither costs of transportation nor tariffs or other restrictions on trade—then the US and the UK become a consolidated market. In this larger single market, **there is an equilibrium price at which total (US plus UK) quantity demanded is equal to total quantity supplied.** (Ahlers, 1991: 15-16)

The one other discourse function of some importance that Ahlers found for existential *there* sentences was a more local listing function where very specific items on a list are often marked by existential *there*. Such an example occurs in the same economics textbook cited above (all instances of the *there* construction are in bold for reader convenience):

We have illustrated a case of complete factor-price equalization consistent with our assumptions. But we would never satisfy all of the assumptions required to achieve full factor-price equalization—and in some instances none of them—in the real world. These assumptions include:

1. **There are only two productive factors, labor and capital, each of which is "homogeneous" throughout the world.**

2. A given commodity has a single production function.

3. **There are only two commodities, both produced with constant returns to scale.** [note: this list has five more items—two with "there" and three without.] (Ahlers, 1991: 20-21)

The only ESL/EFL textbook that Ahlers was able to find that taught the existential *there* construction in a manner consistent with her analysis was Byrd and Benson (1989). All other sources she examined presented the construction strictly at the sentence level, which gives the learner an extremely incomplete picture of this construction in written discourse.

IT CLEFT SENTENCES

Prince (1978) distinguishes two types of *it* cleft sentences in English—stressed focus (SF) and informative-presupposition (IP). The former contains known information in its presupposed part (i.e., the relative clause) and the latter contains new information in its presupposed part:

SF: It isn't higher prices but changed expectations that have caused people to buy more at the present time.
IP: It was in 1979 that Piet Kornhof rather boldly announced, "Apartheid is dead."

Kim (1988) used a corpus to demonstrate that such *it* clefts, though rare in English, occur much more frequently in written than in spoken discourse and that they occur most frequently in genres such as historical narrative, persuasive discourse, and journalistic writing. In his corpus, about three-quarters of the clefts were of the SF variety, i.e., were used to express the author's emphasis or focus rather than to provide a backdrop for new information.

Kim found that ESL/EFL texts rarely present *it* clefts. When they do, the exercises tend to be sentence-level and highly mechanical:

The boy can play the flute.
>It is the boy who can play the flute.
>It is the flute that the boy can play.

The most enlightened textbooks presentations that Kim found provide a minimal context and bring out the contrastive function that such clefts often entail:

A: Are you concerned about the money?
B: No, it's the people that I'm concerned about.

Learners are not shown how to use the construction in written discourse, which is where it most often occurs. A good source of data for written examples is *Time* magazine. The May 22, 1995 U.S. edition had several tokens of *it* clefts. The following one occurred on p. 4 in the fourth paragraph of a short five-paragraph article entitled "To our readers," which discussed two *Time* correspondents, Michael Duffy and Wendy Cole. The article is clearly more about Cole than Duffy since she is the topic of four of the paragraphs, including this one (The *it*-clefts are in bold for reader convenience):

> **It was Cole who chose Fargo as the microcosm for the debate on federal benevolence and intrusion**. Says Duffy, who wrote the story, "She saw it as a fascinating mix of frontier and front page. Then she dissected the town until she knew more about it than a lot of Fargoans. Late last week, needing an anecdote, she ran down to a local bowling alley, did three interviews and delivered a freshly minted kicker for the story inside of an hour."

The placement of Cole in the information focus in the opening *it* cleft sentence signals that Cole will be the topic of the paragraph. It also provides stylistic variation in that the other three paragraphs about Cole begin: *Cole has..., Wendy has..., Cole found....*

Another example of this construction in the same issue of *Time* occurs on p. 52 as part of an eleven-paragraph story entitled "Untrue Confessions" by Jill Smolowe. The *it* cleft occurs in the last sentence of the last paragraph:

> Only a few become causes celebres. Playwright Arthur Miller, who previously came to the aid of a Connecticut teenager convicted of killing his mother, is now involved in the appeal of Richard Lapointe, a brain-damaged dishwasher who was convicted of raping and killing his wife's 88-year-old grandmother after a nine-hour interrogation in which he made three contradictory confessions. "This is a great problem," says Miller. "It ought to interest people that when they get a confession from an innocent man, a murderer gets a passport to freedom."

By placing shocking or surprising information the part of the cleft where known or presupposed information normally occurs, the authors call attention to the fact that the injustice of the existing situation is usually taken for granted. In effect, by saving this quoted *it* cleft from Miller for the last sentence in

the article, the writer is able to use someone else's words to express her own stance on the topic. In this case, it is a very powerful rhetorical device.

CONCLUSION

The above examples were cited to illustrate something that has become increasingly clear to me and many of my graduate students during the past several years: In ESL/EFL, we need to re-analyze virtually all of English grammar at the discourse level in order to be able to teach our students rules of grammar that will serve them when they read and write English for academic and communicative purposes. Sentence-level knowledge and production of a structure are but elementary prerequisites to knowing how to use or interpret a structure in written discourse. When to use the structure and for what purpose one might use it constitute critical knowledge for the learner. Our reference grammars and teaching materials must begin to supply teachers and learners with this kind of information. But this will happen only if enough data-based analyses of authentic materials are carried out and properly disseminated. The sooner, the better.

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Notes:

1. Perhaps the reader can add a few more examples.
2. Reid (1991) argues cogently that English subject-verb agreement is much less automatic and much more semantically driven and more subject to speaker-writer intention than most linguists have assumed.
3. Lexical cohesion, i.e., the use of vocabulary choices to establish semantic links in a text, is also discussed by Halliday and Hasan (1976), but it is excluded from this list since it is not a grammatical cohesive device.
4. Halliday and Hasan (1976) acknowledge that "conjunction" is a slippery area of cohesion given that conjunctions display both lexical and grammatical behavior.
5. This typology of cohesive devices was extended in Halliday and Hasan (1989) to include other discourse phenomena such as structural parallelism, theme-rheme development, given-new information, and adjacency pairs (e.g., a question followed by an answer).
6. This is more or less in line with Huckin and Pesante's (1988) earlier findings.

14

Tense and Aspect in Context

Kathleen Bardovi Harlig

This paper demonstrates how authentic texts can be exploited by teachers for the teaching of tense and aspect in English. Research in second language acquisition shows that learners master tense/aspect forms relatively quickly, but that they have much greater difficulty in establishing the form-meaning-use associations exhibited by the target language. Thus, the use of authentic texts in teaching tense and aspect is not only a means contextualizing grammar, but is essential in helping learners relate form to meaning and use. This chapter presents a brief analysis of tense and aspect use in three texts: a narrative, a description, and a news report. Following each text, activities are presented which are designed to increase a learner's awareness of meaning, use, or distribution of tense and aspect. The activities are intended to supplement traditional grammatical instruction in tense/aspect and can be used with a variety of teaching methods.

This chapter is entitled "Tense and Aspect in (Con)Text" because the best context for teaching tense and aspect is text. By *text*, I mean reasonably authentic connected discourse of any type (narrative, expository, conversational) and any source (radio, television, film, newspapers, novels, stories, reports of various types, and texts for children as well as adults). Studies of the acquisition of what textbooks call *tense* (which I will call *tense* and *aspect*) suggest that the use of texts as input is not only methodologically desirable, but acquisitionally necessary. This chapter will exemplify some uses of four tense/aspect forms which express events related to past time in different ways: the simple past, pluperfect, past progressive, and present perfect. Texts illustrate the relationship of form (the tense/aspect inflections) to meaning and use, and the contrast between the meanings associated with tense/aspect forms.

BACKGROUND

English marks both *tense*, the location of an event in time (Comrie, 1985), and grammatical *aspect*, ways of viewing the make-up of a situation (Comrie, 1976). *John sings* (present) and *John sang* (past) show a difference in tense. *John sang* (simple past) and *John was singing* (past progressive) are both past, but show a contrast in grammatical aspect. The present perfect, *John has sung*, has been labeled both a tense and an aspect, and is known as a 'phase' by some British linguists. The pluperfect, *John had sung*, is called a relative tense because it takes its point of reference from another tense—the time reference established by the simple past. (This is known as "past in the past" pedagogically.) Whatever the precise relationship between them, it is clear that the meaning of present perfect is not primarily a present tense equivalent of the past perfect. This has led some linguists to use the term pluperfect rather than past perfect to disassociate the two.

Learners apparently have more difficulty with the meaning and use of tenses/aspect inflections than with the form (Bardovi-Harlig, 1992). In fact, Bardovi-Harlig and Bofman (1989) found that learners made 7.5 times more errors in tense/aspect use than in form. Situating the use of tense/aspect inflections is difficult for learners. One way for teachers to help learners is to use texts for comprehension to highlight form-meaning-use associations, which provides communicative input lacking in traditional presentations of tense/aspect.

One might object that texts are long and diffuse and that any number of isolated examples can be lined up in less time and space. However, the use of text is ultimately efficient. First, texts constitute what second language acquisition researchers call "positive evidence," examples of actual language use. Related specifically to the teaching and learning of tense and aspect, the use of texts presents a realistic portrait of the distribution of tense/aspect forms. (This is true of any form or rule that is being highlighted for learners. See Celce-Murcia, this volume). Second, using texts presents tenses used in meaningful communication. Third, the use of texts shows how tenses contribute to the building of discourse, including where certain tenses are located, and how they function in different genres of text. Fourth, texts demonstrate the relation of tense/aspect forms to each other and the contrast between them.

Moreover, approaching classroom language learning by focussing on the learner, we see that the use of text can accommodate a much wider range of student abilities and levels of development than a singularly focussed grammatical exercise or presentation. In any English language classroom, regardless of how carefully learners are placed in the classes, learners progress at different rates. Different rates mean that students in any single classroom are acquisitionally ready for different input.

In a decontextualized grammar lesson the learner is focussed on a single structural point. If the learner has not mastered earlier lessons (or to speak of acquisition, if the learner has not progressed through earlier acquisitional stages), then he or she is much less likely to benefit from the lesson of the

day at the time of presentation. In contrast, the use of text makes any lesson more widely accessible to all the students in a classroom, by offering something for everyone. That is, although learners may not be able to master the specific target envisioned by the teacher, the comprehension of a text leaves wide open the possibility that the learner will understand the text at his own level. More specifically, to use an example from the tense/aspect system, a learner whose mastery of the simple past is still emerging can make use of the examples of past tense in the text while a faster moving learner might go on to notice the use of the pluperfect. Others may benefit from vocabulary or any number of other linguistic features.

An additional benefit of using texts is that it is compatible with a range of language teaching methods in use today. The use of text requires a particular approach to what information we as teachers bring into the classroom, but it leaves wide open the type of approach one brings to language teaching: from a communicative approach in which the text is viewed primarily as a unit of communication, to a classroom in which input enhancement or focussed noticing is practiced, to a classroom in which explicit rules are given. In each case, the benefits of using texts, as outlined above, provide additional input to learners, regardless of language teaching methodology.

TEXT AS CONTEXT

This section examines two complete texts and an excerpt. For each text I will discuss the distribution of tense/aspect forms and present activities to increase learners' awareness of form-meaning-use associations. (For a discussion of form-meaning-use in grammar, see Larsen-Freeman, 1991). The use of text is meant to supplement more traditional presentations of tense/aspect. However, I leave type of presentation up to the individual instructor (see Ellis, 1993; Sharwood Smith, 1991). Neither the texts nor the activities cover the full range of meanings and uses associated with the tense/aspect forms; rather these are meant to serve as examples of what can be done in the classroom.

Finally, I recommend using complete texts. This maximizes the context for meaning and use, respects the text as a communicative unit, and brings other advantages of comprehensible input. To this end, the first activities with a text should relate to its meaning, although these are not provided here.

The following texts aired on *All Things Considered* on National Public Radio.[1]

Text 1. Narrative

All Things Considered, October 6, 1989

Larry Massett: Through a friend of ours we came across the story of a man who lives in Washington and who's become something of a saint in the eyes of many of the homeless. His name is Michael Kerwin and his story begins 10 years ago.

Kerwin: I was walking one night. It was bitterly cold, around Christmas 1978, and I was walking. I think I was walking down to the river just to clear my head or to go for a walk. I love to walk. There was a man on the heating vent across the street from the State Department at 21st and E which was only a block from my apartment, and he called out to me. He said he wanted a buck to buy something to eat. I was very irritated with him for calling out after me. I didn't want to be bothered and I didn't believe him either. I thought, "well he just wants to get something to drink;" and I thought to myself, "well I'll fix him. I'll go and get him something to eat and that way he'll be frustrated and angry and didn't get what he wanted but at least I'll give him what he asked for." So I went up to my apartment, got him a bowl of soup, got him a sandwich and a cup of tea, and brought it down. I set it down and walked away. I continued my walk, didn't say a word to him, and didn't acknowledge his thanks. I never saw that man again, but I went home that night and I just thought: "well, you know that made me feel pretty good. That's the least I can do. That's all it takes to make me feel good and to think well you know here I'm helping the human being. I can do that. I mean what effort did that take."

So I went home, and the next night I went out again with the same type of meal (I think a little bit more but the same type of meal). I just set it down on the heating vent where other people were, and I walked away. They thought I was a little bit crazy bringing out this food and setting it down, but I did. I simply went back to my apartment and that was the end of it. But I kept doing that, and I kept doing it night after night after night and eventually got to know some of these people because I was consistent. I went down there.

One of them said to me one time "what is this, kind of a project? Is this a homework assignment or something?" I said, "No." I said, "I just feel I want to do it." Another night. One of the guys down there was so angry with my doing this. I had taken a gallon jug down of hot split pea soup. It was a cold night, and he took the jar of hot split pea soup and broke it over my head. He was so angry. He said, "You're bringing food out to the dogs. You're setting it down here and walking away." I said "Sir, you're exactly right." I said, "I'm embarrassed by what I'm doing, and I'm afraid. I don't know how else to do it." That guy really opened my eyes to the fact that I was being very insensitive, very unfriendly. I really shouldn't have done it at all if that was going to be the way I was doing it.

So the following night I came down. I set the food down. I purposefully sat there for a while with some of the people and talked to them, and all of this was fine. I think they were waiting for me to stop doing it. They were waiting to see how long I was going to keep this up. Secondly I think they were beginning to enjoy the visits and the food, and I was getting to know some of them. For me this was a very very big barrier that was being broken because I had always resented them or

looked through them or been annoyed by them or their condition, and I had never really encountered any of them on a personal basis.

Everything was fine until about three months after I'd begun. A man asked to come up to my apartment and to shower and shave. I said, "Absolutely not." I said, "I live in a dorm." I said, "You know, it's graduate housing." I said, "We are not allowed to have people in—just strangers off the street." He was dirty. He smelled, and he was a little bit inebriated. I said, "No." I said, "I can bring the food out but I can't have any people up there." I didn't want to, and I was embarrassed if I had been seen with him. Nobody was aware of what I was doing. Nobody in the dorm or anybody else was aware that I was taking this food down, and that's the way I wanted it. So that was fine, but he persisted for three days after that. Finally I said, "All right, Glenn." I said, "Come up to the apartment." But I said, "You've got to leave as soon as you have your shower and shave." So it was fine. I took him up, and he went into the bathroom. I went into the kitchen. I was washing some dishes, and I came back into the living room about twenty minutes later. There he was in the chair fast asleep. He had come out and he had gone into the chair. Right away—because he was so tired—he had gone to sleep. I had given him some clean clothes and he had put those on. So he looked fine. He looked a lot better than he did on the grates. He slept.

He slept all night there, and the next morning I went to work because I was working too. I debated whether to leave him there, and I said, "well you know he's certainly sober because he hadn't brought any liquor in." He looked very clean and he looked very wholesome. I thought, "well you know, I'll just let him stay here during the day and when I come home for lunch you know I'll see what the circumstances are." I came home, and he had made lunch. He had straightened the apartment out and he was listening to the Ring Cycle of Richard Wagner on the stereo. Of course that endeared me to him because I liked what he was listening to—Lowengren. He was wonderful, and it was good to come home to that. It was good to come home to somebody that had taken the time and the effort to do that. He filled in a very real sense a void in my life. I wasn't married. I wasn't doing anything really but going to school and going to work, and it felt kind of good to come home to something like that. I really identified with him.

He didn't leave for 30 days. When people found out that he was up there, that he was doing fine, that he was safe, and that he was clothed and well fed, a lot of people on the grates asked to come up. I had 15 people in my room by the end of that winter. We were fine, and then one Saturday morning a young man came up. He was 24 years old. He came up and asked if he could shower and shave in the apartment. I said, "Yes." I had never seen him before and he went in to the bathroom. After about an hour he didn't come out. We went in there, and he was dead in the tub. He had died of drugs and alcohol.

93 Of course, I had never been around anyone that had died—certainly
94 not in my own home. I got on my phone and called my mother. I said,
95 "What am I supposed to do? Here is this man dead in the tub." I said,
96 "You know I have all these guys in the apartment." She said, "Well you
97 have to call 911." This made sense, but I hadn't thought of it. I called
98 911, and I was not ready for the response. All of a sudden these fire
99 engines came racing down the street. The rescue squad came down the
100 street. The homicide detectives came in the door. The university
101 officials came in the door and the coroner. I was not ready for anything
102 like that. They just took one look at this apartment with all these
103 people and this man, and finally it dawned on the university where these
104 people were coming from. They knew people were coming into the building
105 because the students were telling them, but they couldn't figure out
106 where they were going once they got in and who was letting them in
107 because I had given them all a key. So now they knew. They said not only
108 did I have to get rid of these people but I had to leave.

Larry Massett: Now ten years later Michael Kerwin runs a house for homeless people in downtown Washington D.C. and a farm outside of the city. At any given moment he is on his own supporting 30 or 40 people.[2]

ACTIVITIES

Narratives lend themselves to demonstrating the chronological order conveyed by a sequence of past tense verbs, the contrast between simple past and other past tense verb forms, and the role that tense plays in discourse structure.

Chronological Order

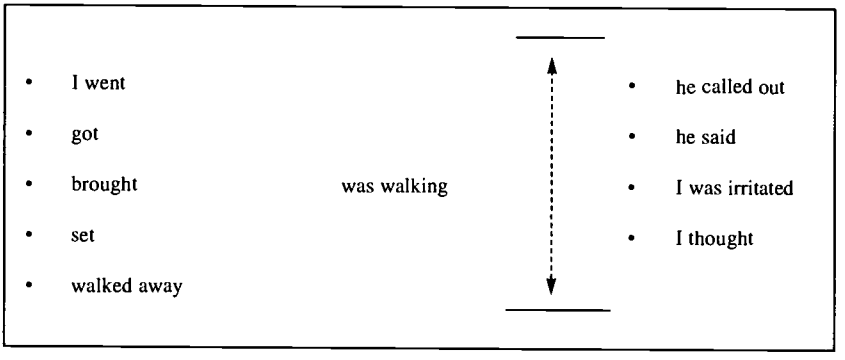
Narratives illustrate the sequentiality associated with the simple past. In lines (12-14), for example, the order of the verbs reflects chronological order. In lines 75-76, the events are not presented in order (hence the use of pluperfect); and one event was simultaneous with another indicated by the past progressive. Learners who have difficulty identifying chronological order independently benefit from focussed questions such as "In lines 75-76, did Kerwin see the man cleaning the apartment?" and "Did Kerwin hear the music playing?"

Contrast

Using a text also helps learners contextualize the contrast between tense/aspect inflections. The first step in contrasting the meaning of tense/aspect inflections is to direct the learner's attention to different forms of the same verb. This step is important because learners often associate one verb with one inflection (Bardovi-Harlig & Reynolds, 1995). There are four verbs in this narrative which occur in both the simple past and past progressive.

Past Progressive	Simple Past	Line
was walking (lines 1-2)	_____	13
was taking (line 57)	_____	61
were coming (line 104)	_____	75
were going (line 106)	_____	91

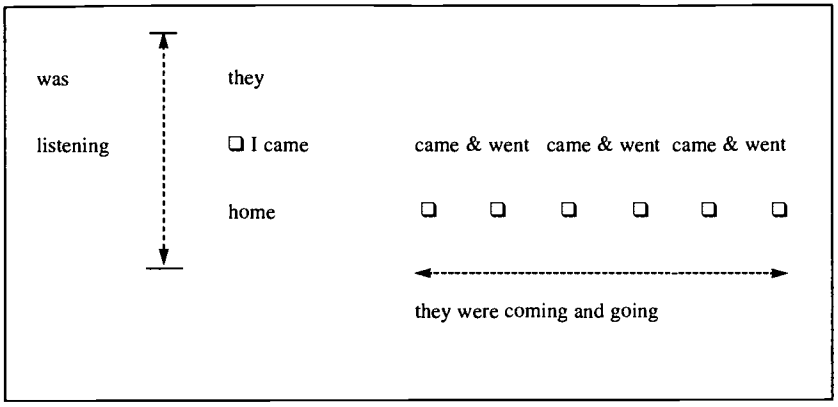
The next step contrasts the meaning and use of simple past and past progressive. The choice of inflection relates to "point of view." If the event is viewed as a whole or single point, simple past is used. If the event is viewed as filling an interval or period of time, the past progressive is used. Compare the use of *walked away* (13) and *was walking* (1).



This comparison can be made throughout the text with different verbs.

Expanding meaning

The meaning of past progressive that learners encounter earliest is its progressive, simultaneous meaning as in *was walking* (1) and *was listening* (line 76). Lines 104-106 illustrate the use of past progressive for repeated activities (its iterative function). The simultaneous use is illustrated on the left, the iterative use on the right. Note that both uses fill an interval.



Learners can use this scheme to distinguish the two uses of progressive. Learners can also paraphrase the iterative passages using simple past and adverbials such as *again and again*, *over and over*, or *regularly*.

Text structure

Tense/aspect also contributes to the structure of narratives. The simple past tense carries the main story line, or **foreground**. Foreground events occur in chronological order (what happened first is reported first, in other words). In contrast, other tense/aspect forms populate the **background**. The background provides information which elaborates or evaluates events in the foreground. The background is not in chronological order and can be used to set the scene or to make comments about events in the foreground, or to predict future events. These diverse functions result in the use of diverse tense/aspect forms. Simple past also occurs in the background. The important point is that the other forms generally do not occur in the foreground.

The following illustrates how this works in Kerwin's narrative.

Foreground	**Background**
	I **was walking** one night. It was bitterly cold, around Christmas 1978, and I **was walking**. I think I **was walking** down to the river just to clear my head or to go for a walk. I **love** to walk. There **was** a man on the heating vent across the street from State Department at 21st and E which **was** only a block from my apartment,

1. and he **called** out to me.	[this is what he called:] He **said** he **wanted** a buck to buy something to eat.[4]
2. I **thought**, "well he just wants to get something to drink;" and I thought to myself, "..."	
	I **was** very irritated with him for calling out after me. I **didn't want** to be bothered and I **didn't believe** him either.
3. So I **went** up to my apartment,	
4. **got** him a bowl of soup, **got** him a sandwich and a cup of tea, and	
5. **brought** it down.	
6. I **set** it down and	
7. **walked** away. I	
8. **continued** my walk	
[several lines deleted]	
9. and the next morning I **went** to work	
	because I **was working** too.
10. I **came** home	
	and he **had made** lunch. He **had straightened** the apartment out and he **was listening** to the Ring Cycle

In this narrative we see only simple past in the foreground, but in the background we find simple past (*he said, I was*), simple present (*I love to walk*), past progressive (*I was walking, he was listening*), and pluperfect (*He had straightened the apartment*).

The concept of narrative structure can be used to help learners identify the main story line, to make form/function links, and naturally, to illustrate the distribution of tense/aspect. (Identifying the foreground also results in the identification of chronological order.) For production tasks, learners could be asked to write down just the main points of a story (one they have read, viewed on video, or created). Once this is done, details, explanations, and scenes can be added. Although this is an artificial way to construct text, as a consciousness-raising exercise, it illustrates the function of tense/aspect forms in narratives.

Text 2. Description

Daniel Pinkwater's commentary on smoking is a different type of text from Kerwin's narrative; consequently it shows different tense/aspect use.

This description of the author's childhood as the justification for his smoking cigars is a text illustrating the use of habitual past, an area that is problematic for learners.

All Things Considered, October 24, 1994

Linda Wertheimer, Host: Sigmund Freud once said, 'Sometimes a cigar is just a cigar.' Not so, says commentator Daniel Pinkwater[4].

Here is the first joke I ever heard. 'Hey son, you like music?' I would deliver the correct response stifling giggles. 'Yes, I like music.' 'Well, here's a band.' Whereupon I would be presented with a paper ring printed in gold and gaudy colors, bearing the legend 'El Producto' or 'Garcia y Vega'. All my uncles and my father knew this joke. They never got tired of it. Neither did I.

When the men folk gathered, they would savor cigars in candella wrappers and drink whiskey out of tiny glasses with gold rims, leaning back in their chairs or around the dining room table, luxuriating after a family meal. They might play a spirited game of pinochle while I lolled on the carpet in the living room with the other children, admiring our cigar bands and listening to Fibber McGee and Molly, The Shadow, or The First Nighter on the big floor model radio.

The aunts and my mother would knit, chat and shout good-natured comments back and forth with the card players. These men had survived the hardships and privations of the immigrant experience, worked hard, and now were able to sit at a bought-and paid-for table in the bosom of their family, survey their achievements, enjoy a hand of cards, a good cigar, a glass of Schnapps, and maybe a piece of fruit. The rewards of citizenship in the democracy. At some point, as the evening wore on, invariably one uncle or another would stretch and hook his thumbs in his waistband and sigh, 'Ah, America.'

With so many of my happy childhood memories fragrant with cigar smoke, and my little personal treasures redolent of Havana from being kept in cigar boxes, it was inevitable that I would turn to the leaf when the time came. That time came only this year. I had stunk up my environs with pipes for most of my adult life and some time ago I quit. I thought I was perhaps puffing a bit too much and anticipating possible trouble, I boxed up my beloved briars, tossed out the last of the Balkan Sobranie mixture and went cold-turkey.

Kicking was no problem for a hero like myself. After buying out the candy counter and consuming every sort of mint, caramel, sour ball and chewing gum for a week, the nicotine devil was out of my body. Of course, I was unable to work, sleep or think for weeks and weeks. I growled at my wife, was plagued by morbid thoughts and spent hours drumming with my fingers on the desk top and staring into space, but I was not going to go back to the pipe. I had sworn off and a swear is a

swear.

Fortune decreed that a brochure should arrive in the mail. It was from a discount cigar company. There were pictures of the various products, remarkably the same. A cylinder, round on one end. How do you take a good picture of a cigar? It's a cigar. But the copy—the copy was hypnotic. All about Honduran and Jamaican and Dominican leaf, and creamy brown wrappers of Connecticut shade grown. Maduro cigars, black as coffee, green claros, and all sorts of cigars just as good as Cuban, or grown from seeds smuggled out of Cuba or made by cigar makers who'd learned their trade in Havana. And these things were rare and expensive. I never knew there were cigars that go for $8 or $9 a smoke. I swore off pipes, I didn't swear anything about cigars. Besides, I read somewhere that while pipes are less threatening to health than cigarettes, cigars are less dangerous yet. They're practically good for you. Yes, I phoned in an order for a bundle of generic Hoyo de Monterreys just like the internationally respected brand at half the price. The cigars arrived and I've been smoking one or two each evening. I wasn't sure I liked them at first, but now I'm sure. My hand is steady, my eye is clear. I am able to work again. I don't have desperate thoughts. So what if when I come into my office in the morning, it smells like old men have been playing cards there all night. So what if I have to gargle mouthwash before I can kiss my wife. So what if besides looking like my father, I now smell like him, too. I am myself again and I did not go back to that vile pipe smoking habit.

ACTIVITIES

Habitual past

In this text teachers can exploit the use of *would* to indicate habitual activities in the past with questions such as:

> What in the first paragraph [lines 1-6] indicates the joke was told over and over?
>
> What did the men in the family do whenever the family got together? What did the women do? How do you know that they usually or always did this?

In addition to conducting "noticing exercises," some teachers might want to include production activities. In a paraphrase exercise, learners can rewrite portions of the text using other markers of past habituality (such as adverbs plus simple past, or even *used to* + verb). To compare the use of *would* to express past habitual action with the use of past progressive to express repeated action during a limited period, compare Text 2 (lines 2-15) to Text 1 (lines 101-107).

Temporal Orientation

Because Text 2 is not primarily a narrative, it cannot be analyzed for background-foreground as in Text 1. Neither is the activity on chronological ordering possible. Instead, learners can chart the orientation of the text relative to the time of speaking. Learners group events into "Now/Always" which hold true while the speaker is speaking (present tenses), "After" which will hold true at some time after the speaker finishes (simple present, present progressive, be going to and modal futures), and two "Before" columns which relate states and events before the timing of speaking ("Before" using past and "Before that" using pluperfect.) There are no instances of future in this text, so the following example uses only three columns.

Before That	**Before**	**Now/Always**
	men **would savor** cigars (7)	
	aunts **would knit** (14)	
men **had survived** (15)		A swear **is** a swear (37)
		Cigars **are** less dangerous (51)
		I now **smell** like my father (60)

Text 3. News Report (Interview)

The following report aired less than two weeks after the bombing of the Oklahoma City Federal Building during the search for the second suspect. This text provides examples of the "hot news" present perfect (the use of the present perfect to report events which have just happened). However, because the hot news present perfect has value only in the context of the time in which it is written, it is intended to serve as a model for other texts that instructors might use rather than as a text for direct use in the classroom.

All Things Considered, May 1, 1995

Robert Siegel: And does the fact there's a new drawing mean that there are more and more people whom they're talking to who—who saw Timothy McVeigh with this man? Is that what's happening?

1 Wade Goodwyn: It's hard to say where they've gotten this new drawing
2 from. FBI agent Kennedy said they've gotten over 13,000 phone calls

regarding John Doe number two, and they've got seven million pieces of information they're working on. He talked about this - some high-tech gadgetry they have called the 'rapid start automated case support system,' which is a database of over 30-million bits of information that they are using to correlate all of the evidence they've been gathering, but it doesn't seem to be a whole lot to go on. There are two new pieces of information that we've heard today. One is that FBI agents have cordoned off portions of a state park in Kansas, outside of Junction City. They have sent divers into a lake and are combing through the woods. They believe that the bomb may have been assembled in this state park. They have found a large fuel spill on the ground....

ACTIVITIES

This text also illustrates the use of a series of present perfect verbs to report recent, but unordered events. (This is a use of the present perfect which is almost totally ignored by English language textbooks.) Thus, the events reported in *getting 13,000 phone calls*, *naming the 'rapid start automated case support system*,' and *gathering information* are all unordered with respect to each other in Lines 2-7. Similarly, in Lines 9-13, *cordoning off the park*, *sending divers into the lake*, and *finding a fuel spill* are all recent, but unordered with respect to each other. If these events were reported in simple past, the reader would have no choice but to interpret them as sequential. Notice that since a particular order for the present perfect series cannot be identified, the ordering activities suggested for the other texts are not applicable here.

To illustrate the hot news use of the present perfect, the instructor might bring in a current news report, such as the one above. To compare the use of past tense and present perfect, the instructor or the learners could bring in coverage of the same event several days later and compare the difference in tense use. Newspapers, for example, will rerun stories as background to explain ongoing coverage of major events. Or, learners could compare an immediate report from a daily newspaper or from the television or radio news with a report from a weekly news magazine. Whatever the sources, the more immediate story is likely to use the "hot news" present perfect, while the older story will be written primarily in simple past. As an example, consider the English-language television news reports the day that the verdict in the O.J. Simpson case was handed down. "The verdict in the O.J. Simpson case has been reached" and "the jury has found O.J. Simpson not guilty." In contrast, *Newsweek*, which by virtue of its weekly publishing schedule can almost never report "hot news," wrote:

For 10 minutes last week, America stood still. One hundred and fifty million people watched on TV; phones went silent. After a year in court,

the verdict was abrupt: O.J. Simpson was free." (*Newsweek*, Oct 16, 1995:10, Mark Whitaker)

Whereas the immediate news reports used the present perfect, the delayed report from *Newsweek* used only simple past.

As a production activity once the learners have come to recognize the difference between the use of present perfect and past, they can prepare their own news stories and/or provide temporal perspective on once-current reports which have "gotten cold."

CONCLUSION

The use of texts as context for the study of tense and aspect offers learners (and teachers) the opportunity to discover form-meaning-use associations that are not always apparent in traditional presentations. To give just one example, text-based ordering exercises demonstrate that 1) a past tense series typically reflects the sequence of events; 2) pluperfect does not reflect chronological order; 3) past progressive reflects simultaneity or scene setting; and, 4) a present perfect series reflects unordered but recent events.

I have presented examples of activities which increase learner awareness of form-meaning-use associations. Some teachers may wish to follow these with production activities. As learners create their own texts, the benefits of working with texts for recognition are extended. Learners negotiate meaning as they build a text as well as when they read one. Beyond the benefits to the study of tense/aspect, texts convey meaning, and every encounter with meaning provides an authentic experience in language use. Moreover, the use of text provides continued input to learners on a variety of target-language features, an opportunity for learning no teacher can afford to ignore.

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Notes:

1. The first text was transcribed at Indiana University; the others were available online from Nexis/Lexis.
2. Copyright permission was generously granted by Larry Massett.
3. In addition to chronological order, Dry (1983) argues that a second textual criterion for evaluating the foreground is information value; the information communicated in the foregrounded clause must be new rather than given. It is for this reason that this instance of *said* is in the background; as a reiteration

of *called*, it is given information and cannot be placed in chronological order with respect to *called*. For a fuller discussion of narrative analysis, see Bardovi-Harlig (1995), Dry (1983), and Hopper 1979.

4. David Pinkwater has written over 70 books for children. He is a regular commentator on National Public Radio.
5. These news reports by NPR's Larry Massett and Wade Goodwyn were originally broadcast on National Public Radio's "All Things Considered" on May 1, 1995 and October 6, 1989 and are used with the permission of National Public Radio. Any unauthorized duplication is strictly prohibited.

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Towards a Psycho-Grammatical Description of the English Language

Jean-Rémi Lapaire and **Wilfrid Rotgé**

This paper describes a framework in which sentences are treated as 'constructions' involving 'workings of the mind' or psycho-grammatical operations. Operations are intrinsically dynamic and reflect not only the speaker's linguistic competence but also the way in which the mind functions in a given environment. The paper warns of the dangers of a purely descriptive and 'mimetic' conception of language which confuses word and world and denies the relative autonomy of grammar. Finally, key concepts are surveyed which play a leading role in textual analysis such as contextualization, short, medium and long-term memory, and discourse strategy. These points are illustrated primarily using grammar points which often cause students problems.

FOUNDING PRINCIPLES OF THE PSYCHO-GRAMMATICAL METHOD

Texts are observable linguistic productions, made up of verbal signs[1] which are strung together according to strict *rules of syntax*.[2] As the French linguist Guillaume established as early as 1919 in a challenging theory called *psycho-systemics*[3]—and as Chomsky later contended in *Aspects of the Theory of Syntax* (1965)—sentences are surface structures that originate in the depths of the speaker's mind. The utterances we hear or read are not preassembled constructions that come out of nowhere, but are stretches of discourse that are generated in a given speech situation with specific communicative aims. Sentences may be compared to the finished product coming out on a convey-or belt after an extremely short but complex manufacturing process involving the speaker's mental capacities.

When native speakers produce sentences—or more generally utterances[4] —they unconsciously perform various *operations*[5] like 'noun phrase determination,' 'quantification,' 'predication,' 'extraposition,' 'embedding,' and 'compounding.' Although they may be forced to pay attention to style and wording when circumstances require some degree of formality, speakers are usually unaware of the innumerable *mental operations* involved in the construction of the most trivial sentences.[6] Such *mental operations* are part of their grammatical subconsciousness and may be called *psycho-grammatical* in so far as they imply workings of the mind (*psycho-*) aimed at generating linguistic structures (*-grammatical*).

As Jakobson established in his study of aphasia,[7] the most elementary *operations* performed by any speaker in any language are 'selection' (i.e. choosing the words which are appropriate to the context and which convey the intended meaning of the message) and 'combination' (i.e., placing the words in the adequate sentence or clausal 'slots' and using the right grammatical inflections to mark the relationships between them). *Psycho-grammatical operations*, which are by definition abstract and invisible to the naked eye, may leave concrete 'marks' in discourse. Indeed, most of the 'function words' (e.g., the demonstratives *this* & *that*, the articles *a* & *the*; the auxiliaries *be, have, do*; the relative pronouns *which, who, that*) and all the 'grammatical inflections' may be seen as the codification of *operations*. This is a major shift in perspective which opens up new horizons in syntax, semantics and pragmatics.[8] Grammatical morphemes are no longer treated as mere 'forms' or 'implements' but as markers that signal workings of the mind. A good illustration of this is provided by ***TH***-items.

Standard grammatical accounts of ***TH***-items tend to focus on the distinctive 'uses' and 'meanings' of ***The, This, That, Then, There, Though***, and ***Thus***. The various functional and semantic realizations of these 'function words' are discussed in great detail, but scarce attention is ever paid to the conspicuous presence of ***TH***-, which may be regarded as their common denominator:

TH-e/-is/-at/-en/-ere

The reason why this striking similarity is traditionally overlooked is that **TH-** appears to be little more than a 'mindless morph' deprived of any real significance.

Yet, historical linguistics defines **TH-** as a 'demonstrative stem,' which would suggest that, not so long ago, **TH-** possessed specific grammatical features and was not a meaningless form at all. Have these features evaporated with time?

It is our firm belief that there is no such thing as 'amnesia' in the evolution of languages. Through a metaphorical shift which can be easily formalized and accounted for, **TH-** has come to denote an invariant mental process which may be diagramed as follows:

previous workings.... <---back-pointing movement ---- ***TH***- (summative/recapitulatory) of the mind

All ***TH***- items are retrospective or, more technically, mentally anaphoric: They necessarily 'point back in thought.' ***TH***- presupposes that 'something has gone before.' For example, you cannot say ***Then*** *he laughed* or *Why did he do it* ***then****?* without making reference to some previous statement or event. You cannot say *She's over* ***there*** if you have not initially established your own position as being ***here***.

The retrospectiveness of ***TH***-items owes much to the primitive physical concept of 'pointing.'

Directing a person's attention toward something is not as simple and spontaneous as it seems. We must first use our sense organs and our brains to detect a particular object or phenomenon, collect information and perform some instant 'data-processing.' Only then can we make a pointing gesture. Previous workings of the mind are thus involved, whatever their degree of complexity and variability. What **TH**- has retained of its demonstrative origin is precisely this: the existence of earlier mental operations that may be safely relied upon. The precise nature of the mental operations involved depends both on the situational context and on the other morpheme that **TH**- combines with (e.g. **-EN** in **TH-EN**). Since a whole spectrum of operations is crammed into a single morpheme, **TH**- appears as a highly 'compressive' morpheme.

Not only does our psycho-grammatical account of **TH**- indicate the systematic nature of morphological rules (combinations are never random), but it also enables us:

[a] to discriminate effectively between superficially synonymous constructions (e.g., **WH**- relative clauses vs. **TH-AT** relative clauses. See below.).

[b] to explain why **TH-EN**—when it can be paraphrased by 'after that' (e.g., *We spent a week in Rome and* ***then*** *went to Naples)*—is both forward and back-pointing, and expresses completion ('once event 1 was **over**, event 2 ensued'). ***Then*** is less of a 'continuer' than ***next***, which is truly 'additive' and forward-pointing.

[c] to distinguish between some parallel uses of the so-called 'definite' and 'zero' articles (e.g., *Would you fancy her as a little secretary reading* **the/ø** *fashion magazines*? **The** stresses typicality and conveys a derogatory judgement: 'Of course you know what those magazines are like').

[d] to provide a more sophisticated account of the purely textual uses of ***This*** and ***That,*** when both items 'take up' information that

is retrievable from earlier sentences (e.g., '*He's going to kill himself. Don't you know* ***that?***'). As we demonstrated in "The rhetorics of 'this' and 'that' in fiction":

> If a given topic is treated as an <<open case/file>>, then the chances are that ***This*** will be selected. Conversely, if the topic under consideration is presented as a <<closed case>> or as a <<settled matter>>, ***That*** is more than likely to be used.
> Our corpus-based study suggests that ***This*** is frequently associated with contexts where the speaker's mind <<unseals>>, <<opens>>, <<reopens>>, or <<keeps open>> one of its <<files>>. In that respect, ***This*** may be called mentally imperfective.[9] The most striking cases include:
> - freshly imparted information (whose content may be too complex, problematic, incongruous or surprising to be assimilated instantly)
> - obsessive ideas, topics, facts
> - the reappraisal of past happenings
> - exploratory or introductory strategies.
>
> The same corpus-based study reveals the intrinsic <<terminativeness>> or <<conclusiveness>> of ***That*** (cf. the idioms ***that's that ; that's all ; that's it***). Matters that are over and done with, quickly understood, self-explanatory, obvious, predictable or logical tend to be handled like a <<closed file>> that is easily labeled, referred to and stored away. ***That*** may accordingly be termed mentally perfective[10] and should be regarded as a sign of mental closure. (Lapaire and Rotgé, 1993:84)

Thought processes and mental pathways

When the world-famous American choreographer George Balanchine died, the *New York Times* published an obituary that read:

> [1] George Balanchine was the foremost exponent of 'abstract' or plotless ballet. [...] But ballet ***that*** told no story did not always win favor with the public.

The reporter could well have written *ballet* ***which*** *told no story...* without the slightest difference in meaning. Yet, the choice of ***which*** would have codified a different psycho-grammatical strategy. Whereas ***that*** clearly marks the relative clause for presupposition (*Ballet* ***that*** *told no story* is a rewording of *'abstract or plotless ballet'* already expressed in the text), ***which*** does not treat the information as given. Using ***which,*** the journalist would have 'refreshed the reader's memory' (Bolinger, 1977) or 'gone back to square one' (Lapaire and Rotgé, 1991). ***Which*** has an explanatory, fact-providing role. ***That***, on the other hand, indicates that the speaker regards the postmodification as legitimately pre-established (although it might not be so).

Using the 'source-path-goal' image schema studied by Lakoff (1987) and Johnson (1987),[11] ***which*** and ***that*** may be said to indicate two distinct

'mental pathways' leading to the same 'semantic destination.' What makes the difference is not the 'referential goal' that is eventually reached but the 'journey.' One track is smooth and easy (***that***); the other is slower and a little rougher (***which***). Using ***that*** amounts to getting in the 'fast lane.'

The 'link schema' may also be applied to explain where the difference lies. ***Which*** and ***that*** denote varying degrees of 'compactness' between the relative clause and its antecedent. With ***that***, the clause is 'tightly fastened' to the antecedent. With ***which***, a much lower degree of compactness is achieved and the clause is more loosely tied to the antecedent.

LANGUAGE AND DISCOURSE: LOOKING FOR GENERAL RULES AND STABLE PRINCIPLES BEHIND THE FLUCTUATIONS OF INDIVIDUAL USAGE

Well before Chomsky spoke of the 'infinite' number of 'well-formed sentences' that could be generated with 'finite means,' Guillaume suggested that the principles governing syntax and meaning are restricted in number. He argued that grammatical morphemes like determiners, auxiliaries, verb inflections, conjunctions, prepositions, etc. hold stable properties in language, despite the various functional and semantic realizations they may have in discourse.

Rather than merely list and exemplify the central and peripheral 'uses' of a given form or structure, linguists who follow Guillaume in his search for 'core values' (Fr. *valeurs centrales*) and 'stable properties' (Fr. *invariants*) try to discover the deep unifying principles that govern all the surface realizations of grammatical markers. They posit that unity and stability can be found at the more general level of language, despite the proliferation of contextual meanings attached to a particular form in discourse.

The English modals provide a case in point. The syntax of English modals is quite simple, but their semantics is an endless source of confusion to learners because:

[a] different modal auxiliaries are said to have the same meaning. In ***May/Can*** *I ring again*?, ***Can*** and ***May*** are both used to ask the addressee's 'permission' to perform a specific action. In *Students* ***must*** *vacate their rooms by the end of week 9*, ***must*** expresses 'obligation,' as would have ***shall*** or ***should***).

[b] the same modal auxiliary may have different meanings. Depending on such variables as the sentential context, stress and intonation patterns, ***must*** can express 'self-admonishment' (*I* ***must*** *change my ways*); 'external obligation' (*You* ***must*** *produce proper identification*); 'enthusiastic advice' (*You* ***must*** *read this*!); 'resentment' (*Yes he's gay and unlikely to marry her—if you* ***must*** *know*'); 'exasperation' ([For good-

ness' sake] ***Must*** *you shout so much?*); 'logical necessity' or 'inference' ([In all likelihood] *He* ***must*** *have been mad*).

Point [a] raises the important issue of grammatical synonymy (Can different forms really convey the same meaning?), while point [b] raises the even more crucial issue of grammatical homonymy.[12] Should one consider that ***must*** denoting 'obligation' is a distinct item not to be confused with ***must*** expressing 'exasperation' or 'logical necessity,' in which case one would have to acknowledge the existence of deceptively identical verbs ***must***[1], ***must***[2], ***must***[3]...? Or should the myriad meanings dutifully recorded by grammarians and lexicographers be treated as the possible semantic realizations (Fr. *effets de sens*) of a single auxiliary ***must***? The 'common denominator' we would then be looking for is certainly elusive, since it lies deep inside the 'grammatical subconsciousness' of each native speaker. Yet, we may hypothesize that the stable psycho-grammatical features that can be ascribed to each modal auxiliary are small bundles of semantic and syntactic features. By 'semantic features' we mean notions such as those expressed by the traditional concepts of *necessity* (for ***must***), *ability* (for ***can*** and ***may***), *probability* (for ***shall*** and ***will***), although these are polysemous and leave much to be desired. By 'syntactic features' we mean the relationship between the subject (S) and the predicate (P). The combination of the stable semantic features with variations of syntactic features can provide various surface meanings. The syntactic features can be in:

Perfect agreement (judging by what the speaker knows of the situation, 'S and P go together well,' 'nothing is [was or should be] there to block the undertaking of P by S'). Such is the case with ***Will/Would*** and ***Can/Could***, which we call 'modals of congruence.'[13]

You **can** leave now.
I **could** see the lights in the distance.
He's clever and **will** assume control of things.
She **would** get up early.

The reason why ***can*** is seen as 'less polite' than ***may*** in requests (*Can I use your phone?*) is that the speaker anticipates assent on the part of the addressee ('nothing should stand in the way of my using your phone').

When ***must*** denotes logical necessity, it also bears the feature [+ congruence]:

You ***must*** *be hungry/He* ***must*** *have known all along.*

Imperfect agreement or potential disagreement ('S and P do not go well together,' 'something might get in the way of the execution of P by S'; 'P has to be forced on S'). Such is the case with ***shall/should*** and ***may/might,*** which we call 'modals of incongruence.'

*You **may** go now* (My will is a potential obstacle to your freedom of movement. I have the authority of detaining you.)
*You **may** be right* (I cannot say you are right for sure because new evidence might testify to the contrary.)
***May** he rest in peace* (Who can know for certain that there isn't anything preventing his soul from resting in peace.)
*We **shall** overcome.* (However difficult it is bound to be.)
*Really, I **should stop** harassing him*! (Despite my reluctance to do so.).

Disagreement: Obligational ***Must*** bears the feature [- congruence]:

*Racism in the police force **must** be eradicated once and for all.*
('Many obstacles are likely to get in the way of reform.')

Grammatical structures have a core of stable properties governing the multiple semantic and functional realizations found in discourse. Although it is undoubtedly difficult to identify these core values, a purely taxonomic ('classificatory') approach to grammar yields descriptive accounts of mammoth proportions with limited explanatory force.[14]

WORD AND WORLD: DESCRIBING THE INTERNAL MECHANISM OF LANGUAGE OR DESCRIBING EXTERNAL REALITY

Traditional grammatical labels give the impression that grammatical morphemes function very much like common lexical items: They are linguistic signs that denote extra linguistic notions, entities or processes. According to this view, the main purpose of grammar is to determine the type of spatial, temporal, modal or conceptual information that is typically conveyed by determiners, proforms, verb inflections, auxiliary constructions, prepositions, particles, etc. This leads students to believe that everything in language is subservient to the description of the extra-linguistic reality.

Yet, students who regard language as a carbon copy of reality often overlook the fact that syntax is, to a large extent, a world of its own which is governed by internal laws. Unfortunately, much of the common vocabulary of grammatical description gives precedence to meaning over syntax and describes specific grammatical phenomena in terms of real-world events. This makes it extremely difficult for students of English to understand:

- why the 'present continuous' may refer to a happening that is not 'unfolding at the present moment' (e.g. ***I'm having*** *a party tonight.*) or denote an action that has not started yet (e.g. *If* ***we're going*** *to town, let's get moving.*)

- why the 'past tense' can be used with 'present time reference' (e.g. *I* ***wondered*** *if you* ***knew*** *where he is/was.*)

- why 'pointing signals' expressing 'near' (***this***) or 'not near' (***that***) reference in a spatio-temporal (e.g. ***This here*** *boy is ma son.*) or emotional sense (e.g. ***That*** *man, she thought, that man took.*) can act as purely linguistic substitutes, regardless of distance (e.g. *She always said the Dark One wanted me most of all, and I believed* ***this.***).

- why ***it***, which is centrally defined as a 'pronoun used to refer to animals or objects,' can have no real-world referent as such and function as a purely syntactic device. Such is the case of the 'anticipatory ***it***' of ***It*** *was nice meeting you* and the 'empty ***it*** found in cleft sentences like, ***It*** *was my daughter she wanted to see.* Both denote intra-linguistic—as opposed to extra-linguistic - processes: extraposition of a clausal subject (***Meeting you*** *was nice. -> It was nice* ***meeting you***.) and positional highlighting of a sentence constituent (*She wanted to see* ***my daughter***. *-> It was* ***my daughter*** *she wanted to see.*). Extraposition and positional highlighting are 'syntactic events,' not 'real-world happenings.'

Yet, many language instructors feel that a description of syntax per se is beyond the reach of the average student and that traditional labels like 'demonstrative,' 'progressive,' 'past' should be maintained at all costs. They also believe that the 'concrete' uses of 'function words' should be mastered before students are exposed to more 'abstract' uses of grammatical morphemes, which are viewed as idiomatic constructions that defy understanding. But since even the simplest sentences of ordinary language are full of non-progressive uses of progressive tenses or non-pronominal uses of pronouns, the teacher cannot easily limit students' exposure to these 'exceptions.' Moreover the allegedly 'concrete' uses of grammatical forms are more 'abstract' than one is usually inclined to think.

Let us consider, by way of illustration, some of the ways in which ***there*** can be used. In spontaneous conversation we do indeed come across locative and semi-locative occurrences of ***there***, which may seem rather 'concrete' and 'referential' since they are meant to draw the addressee's attention to a place or an element in the 'real world':

[1] *Look! Tim is just over* ***there***!
[2] ***There*** *goes the bell for dinner*!

In fact, such 'down-to-earth' uses of ***there*** already involve psycho-grammatical operations of a relatively abstract kind. Failure to acknowledge this is prejudicial to a thorough understanding of more problematic yet equally frequent realizations of ***there***. As briefly explained earlier, ***TH-*** signals that some basic information has already been processed by the speaker's brain.

TH- also indicates that the speaker believes that the information should be known to the addressee. If not, it should be easily recoverable or inferable from the situational or general context. The ending ***-ERE*** codifies either direct location in space or refers more loosely to the situation. The psycho-grammatical processes involved can be paraphrased by:

[1] 'We are both standing in a place which you and I would agree to define as ***Here***. I wish to direct your attention to another spot which is clearly not-***Here*** and where I can see Tim' = ***There***

[2] 'I have heard a noise that makes sense to me in the situation (***-ere***) and my bet is that you have as well (***Th-***). (Compare ***There*** *goes the bell* with ***Here*** *goes the bell.*).

When one's chief concern is no longer the referential meaning of morphemes, the supposedly 'abstract' realizations of ***there*** in existential constructions (see [3] & [4] below) and in numerous idioms ([5], [6], [7]) no longer look completely different from the 'concrete' ones discussed above:

[3] ***There*** *isn't a single wall standing in the entire town.*
[4] *Through my window* ***there*** *wasn't much to see—dirt and dead snow.*
[5] ***There's*** *gratitude for you!* [ironical]
[6] ***There*** *you are.* [Used when giving somebody something they have asked for or to show how easy something is]
[7] ***There*** *he goes again*! [Used to criticize a person's predictable behavior]

From our perspective, the psycho-grammatical features that were shown to be active in the concrete, locative uses of ***there*** remain unchanged, in spite of the obvious differences in stress pattern and syntactic arrangement (which will not be discussed in this chapter). Suffice it to say that existential constructions involve the prior acquisition (***TH-***) of situational knowledge (***-ERE***) by the speaker. The idioms listed above are also tied to a given situation (***-ERE***) and earlier observation, experience or reflection (***TH-***).

In short, we recommend paying less attention to meaning and reference ('what sentences describe') and focusing more on psycho-grammatical phenomena. The following recommendations might be made to language teachers:

[a] avoid restrictive and misleading labels like 'progressive' or 'demonstrative,' which lead students to believe that 'incompleteness' and 'pointing' are the defining features of ***be*** + ***-in*** or ***this/that***. All other uses of these morphemes come to be viewed as 'odd,' 'peripheral' or even 'deviant.' It is safer to allow morphology to speak for itself. By using the symbols ***be*** + ***ing***, for instance, teachers open up the possibility of numerous interpretations ('duration,' 'incompleteness,' 'prediction,' 'strong assertion').

[b] try to link the various semantic and functional realizations of a given marker.

[c] make full use of already-existing distinctions such as between extra-linguistic time and grammatical tense or biological sex and socio-cultural/linguistic gender to show that language has its own way of reprocessing concepts.

GRAMMAR IN CONTEXT

As pragmaticians and sociolinguists have clearly established, contextual factors have a significant impact on the way words are chosen and put together. Therefore, it is always advisable to use authentic examples extracted from a genuine corpus of spoken or written English. Printed texts borrowed from fiction and drama provide excellent, inexpensive language material. Not only are all examples attested, but they afford priceless insights into the 'inner life' of speakers:

> What may be lost in freedom and authenticity through the conventions of fiction may be gained in psychological depth and understanding of pragmatic issues: Speakers are seen expressing themselves in a variety of emotional and social contexts, and soon correlations between a specific frame of mind and the selection of a particular word or structure emerge. (Lapaire and Rotgé, 1993: 85-86)

For instance, the distribution of ***A(N)*** in connected narrative or dialogue indicates that the so-called 'indefinite article' is intrinsically addressee-oriented and has an expository ('presentative') or explanatory function:

> 1. (The female narrator brings to the reader's knowledge situational information that she deems relevant.)
> *Her cell was the quietest. There was* ***a crude straw mattress, a tiny book-case with a picture of Saint Francis hanging over it, a ragged palm, a stool for sitting on, a crucifix***. (Louise Erdrich, Love Medicine: 55)

The use of ***A(N)*** depends on the *mental representation* the speaker forms of the addressees, together with the *mental image*s drawn of the contextual environment. In the above example, the narrator assumes that the reader is ignorant of certain details regarding the cell of a nun called Sister Leopolda. ***A(N)*** is thus informative ('fact-providing').

The, on the other hand, signals that the speaker assumes prior knowledge of some basic information on the part of the addressee. The speaker may be wrong in this, but the supposedly known 'facts' can always be explained later, unless they come to be regarded as self-evident. Even in the midst of heated argument, ***The*** is an intimacy-creating device. The 'definite article' promotes speaker-hearer solidarity by setting up a 'bond of knowledge' (*Of course you know—or at least can imagine—what I'm talking about*):

> 2. You were never anything but a hard-working drummer who landed in **the ash-can** like all the rest of them!' (Arthur Miller, *Death of a Salesman*: 105)

> 3. I have come to New York because it is **the most forlorn of places, the most abject. The brokenness** is everywhere, **the disarray** is universal. You have only to open your eyes to see it. **The broken people, the broken things, the broken thoughts.** (Paul Auster, The New York *Trilogy:* 78)

In example 2 Biff is telling his father Willy—a tired sales representative—that he is now old and worthless in a society that values efficiency and metaphorically dumps people into **the ash-can**. Willy is supposed to grasp the metaphor and is forced into accepting its existential implications. In example 3 superlative constructions are first used by the narrator to impose a ready-made judgement on the reader. This process can be paraphrased by 'I have drawn comparisons with other places and come to the conclusion that ...' ***Th-*** indicates prior mental activity: *I have looked around, summed up and judged*—as well as the established nature of the 'facts' under consideration. The truth-value of the statement is beyond discussion and the addressee is pressured into agreeing, i.e., sharing the narrator's views. ***The*** is later used to impose on the reader a vision of New York streets that he or she should find no difficulty accepting. Compare *the brokenness, the disarray, the broken people*, etc., with the more 'neutral' *brokenness...disarray...broken people* obtained by substituting the zero article for ***the***).

Whereas context-free examples often lead to endless speculation about the intended meaning of an anonymous speaker talking to a faceless addressee, stretches of discourse extracted from novels or plays are immediately placed in a specific context. All grammatical distinctions are, by definition, context-sensitive, so students should become used to answering such basic questions as *Who is talking to whom under which circumstances?, What relevant pieces of information have already been supplied?, What do we know of the speaker's communicative intentions and mental make-up?*. Trite as this may sound, there is no better place for studying grammar in context than in texts.

The textual activation of memory

In their landmark study of *Cohesion in English* (1976) M.A.K. Halliday and R. Hasan contrast texts to 'collections of unrelated sentences.' Anaphora, substitution, co-reference, ellipsis, and conjunction, they claim, create 'cohesive ties,' i.e., structural and semantic links that unite words across sentence boundaries and foster an impression of overall unity:

> Suppose we find the following instructions in the cookery book:
> *Wash and core six cooking apples. Put them into a fireproof dish.*
> It is clear that *them* in the second sentence them refers back to (is ***anaphoric*** to) the six cooking apples in the first sentence. This ***anaphoric*** function of *them* gives cohesion to the two sentences, so that we interpret them as a whole; the two sentences together constitute a text. (Halliday and Hasan, 1976: 2)

What the authors fail to discuss in their book, however, is the key role played by memory. Anaphora and substitution are not spatial but mental processes: Anaphoric items and substitutes do not point back to the before-text or replace textual units but call back to memory information that has already been supplied verbally and recorded by the brain. It is only because we remember hearing or reading, *Wash and core six cooking apples,* that we can actually make sense of them in, *Put them into a fireproof dish.* Third person pronouns like ***he, she, it*** and ***them*** activate our short-term memory of what has gone before in the text. They do not 'take up' words but recall data. Interestingly, they are briefly filled up with information, then emptied to accommodate another set of recollections.

> Biff: *His eyes are going.*
> Happy: *No, I've driven with him. He sees all right. He just doesn't keep his mind on it. I drove into the city with him last week. He stops at a green light and then it turns red and he goes.* (Death of a Salesman: 14)

Both Biff and Happy are talking about their father and use the same pronoun ***he*** to conjure up his image. The interpretation of ***he, him, his*** in this excerpt has a certain stability, whereas ***it*** undergoes what might be called 'semantic fueling, defueling and refueling.' The first ***it*** is interpretable by reference to what Happy has just said about driving in the car with his father. Then comes the second ***it***, which is of course identical in form but different in content. The old meaning evaporates instantly, and new meaning takes its place (***It2*** = *the green light*).

Proforms are not alone in involving memory. All ***TH***-items, as already stated earlier, are mentally retrospective. The article ***the***, for instance, indicates that the head noun it determines cannot be interpreted properly without knowledge that has been acquired :

- in the immediately preceding text (short-term memory)
- somewhere else in the before-text (medium-term memory)
- in other circumstances or in the broader cultural context (long-term memory)

For example, in the following sentences, *the bus ticket* and *the reservation* make overt reference to what has been told before by the narrator. Failure to remember the fact that *a young Indian woman*, who lives on *a reservation*, has purchased a bus ticket and is about to leave would make the passage rather cryptic:

> ***The bus ticket*** *would stay good, maybe forever. They weren't expecting her home on* ***the reservation.*** *She didn't even have a man there, except the one she'd divorced.* (Louise Erdrich, *Love Medicine*:3)

Students should be made aware of the decisive role played by memory in language. Not only does language-acquisition depend on the safe 'storage' of forms inside our brains, but successful verbal interaction requires our ability to memorize countless pieces of information. All sorts of linguistic games can be played in class, like reading an excerpt from a book or article, clipping out a sentence containing proforms (i.e. 'substitutes,' 'replacive units' such as ***it, this,*** that, ***so***) and asking students, on the following day, to see if they can still understand what is being said.

CONCLUSION

The complexities of language call for flexible frameworks of analysis that transcend the artificial division of grammar into 'syntax,' 'semantics,' and 'pragmatics.' Grammatical description has much to gain by going beyond the purely taxonomic categorization of items, meanings and structures. Cognitive and mental processes should become essential components of common explanatory procedures, even if the neurological mysteries of the 'black box,' where words mate and sentences spring to life—remain to be solved.

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Notes:

1. Non-verbal signs (facial expressions, body movements, etc.) are an essential part of the business of communication. For want of space, body language will not be dealt with in this paper.
2. Syntax—based on the Greek prefix *sun* 'together' and the verb *tassein* 'to arrange'—means quite literally 'to arrange [words/lexemes morphemes/signs] together in order.' In English, as in most analytic languages, speakers have limited syntactic choice and must go by the 'do's and don't's' of an extremely coercive word-order.
3. *Psychosystématique* or *psychomécanique du langage* in French. Throughout the '40s and '50s, Guillaume (1883-1960) gave weekly lectures at the Ecole des Hautes Etudes in Paris. A transcription has been published jointly by Les Presses Universitaires de Lille (France) and Les Presses de l'Université Laval (Quebec). Volume 8 (1947-48) is probably the best. An English translation of selected excerpts is also available: *Foundations for a Science of Language*. 1984, Amsterdam/Philadelphia: John Benjamins.
4. Some French grammarians have suggested using *utterance* (Fr. *énoncé*) as a generic term which denotes any autonomous sequence of words conveying an identifiable message, irrespective of form and structure.
5. *Operation* is derived from the Latin verb *operari*, which means 'to work.'

Speech-production is an intrinsically dynamic process which requires intense neurophysical activity and involves various 'manipulations' of signs and concepts.

6. This partly accounts for the fact that native speakers are usually at a loss when asked to teach grammar. The syntactic and semantic rules they instinctively apply in spontaneous conversation or informal writing remain covert and are not available for direct examination.
7. *Aphasia* is a disorder of the nervous system characterized by the partial or total loss of the ability to communicate in speech or writing.
8. Syntax, semantics, and pragmatics are conventionally treated as separate subjects. In our view, this separation is detrimental to grammatical inquiry, which has much to gain by showing their interconnectedness.
9. /not completed in the mind/, /not over yet/, /still being processed/.
10. /brought to completion (in the mind)/, /processed/.
11. In more recent works *Women, Fire and Dangerous Things* (Lakoff, 1987) and *The Body in the Mind* (Johnson, 1987) - Lakoff and Johnson have come to explore the way in which we conceptualize mental processes in terms of *paths, goals, forces*, and *obstacles*. For example, the act of understanding is metaphorically associated with vision (*Do you **see** what I mean*?; *This is how the situation is **viewed** by the Pentagon*) and motion (*Do you **follow** me?*, *Are you **with** me?*; *No, I'm afraid I'm **lost***; *I've just **come across** interesting facts*; *We **hit** several **snags** at the planning stage*; *I'm getting **out of my depth***; *I don't know **which way we should go** now*).
12. Homonyms are different words that are spelled and pronounced alike.
13. *Congruence* comes from Latin *congruere* 'to meet together,' 'to agree.'
14. No learner of English as a second language can ever hope to memorize R. Quirk *et al.*'s *Comprehensive Grammar of the English Language*, which is a better reference book than teaching aid because it fails to provide a coherent and synthetic vision of English syntax.

SECTION SIX

FUNCTIONAL GRAMMAR AND READING AND WRITING

16

Using the Concepts of Given Information and New Information in Classes on the English Language

William J. Vande Kopple

This chapter offers definitions of the terms given information and new information that can be useful in classes focusing on writing in English. Several ways are illustrated in which teachers can use these definitions to help students of English analyze and revise written texts.

DEFINITIONS OF *GIVEN* AND *NEW INFORMATION* AND CLASSROOM EXAMPLES

In describing the concepts *given information* and *new information*, I will rely on ideas developed in the theory of Functional Sentence Perspective (FSP). Functional Sentence Perspectivists believe that "the structure of utterances is determined by the use to which they are put and the communicative context in which they occur" (Lyons, 1981: 227). As a result, they analyze "the sentence (by which they generally mean an independent clause) into parts having a function in the total communication process" (Halliday, 1974: 43).[1]

According to the formulation of FSP described in this chapter,[2] a sentence should be analyzed into two parts, one of which bears given information and the other of which bears new information. As Dahl (1976), Chafe (1976), Kuno (1980), Prince (1981), and Halliday (1994) show, several different views of given and new information exist. For my work with writing students, I adopt the view of given information that centers on elements that have appeared prior to a point in a text, that are inferable by the reader from the text or the extralinguistic situation, or that refer to things

that are unique and that are known to all with normal experience of the world.

For example, once a noun phrase such as *the old blue car* appears in a text, when it or a shortened form of it (like *the car*) appears later in that text, that form conveys given information. Or once a writer refers to something that is known to have several parts, the writer can later use references to those parts to convey given information. An essay mentioning *a house* might naturally combine with reference to common parts of houses: *the foyer*, *the floors*, *the curtains*, and *the kitchen.* All of these later references would be treated by readers as conveying given information on the basis of the inferences linking common or probable parts and a whole.

Some inferences can link references in texts to events in the extralinguistic situation. If a college president were to issue a written response to an attempted takeover of the administration building, he or she could refer to *the unfortunate incident yesterday.* Since this reference would appear in a situation in which probably all readers know who is writing to whom about what and for what purpose, readers can treat this reference as given information.

Finally, references to things in the world that are unique and that are known to all those who have normal experience of the world—references to things such as the *sun* and *moon* or to processes such as birth and death—will be treated by readers as conveying given information.

New information is information that has not appeared prior to a particular point in a text, that is not inferable by the reader from the text or the extralinguistic situation, and that does not refer to things and processes in the world that are unique and that are known to all with common experience of the world. If one were to write, *Bill was not at home*, and follow this with, *His home is on the outskirts of Madrid,* readers could say that in the second sentence, *His home* conveys given information, and *is on the outskirts of Madrid* conveys new information.

SOME GENERALIZATIONS ABOUT GIVEN AND NEW INFORMATION

As Chafe (1976: 31) shows,

> The principal linguistic effects of the given-new distinction, in English and perhaps all languages, reduce to the fact that given information is conveyed in a weaker and more attenuated manner than new information.

Halliday (1967) adds that given information is often represented anaphorically, by means of reference (pronominals and demonstratives), substitutes (words like *one* and *do*), and ellipsis (no realization in the text). Moreover, in English sentences, usually the portion bearing given information precedes the portion conveying new information (Quirk, Greenbaum, Leech,

& Svartvik, 1972; Prince, 1978; Chafe, 1979; Kuno, 1980; Fries, 1993). The portion that bears the given information is often the complete subject, and the portion that bears the new information is often the complete predicate. Since given information tends to appear in an attenuated manner, many sentences in English move from a relatively short subject through a longer predicate, a phenomenon that many linguists refer to with the term "end weight" (Quirk, Greenbaum, Leech, & Svartvik, 1985: 1362).

These points are generalizations about tendencies in English, not statements of absolute rules. Occasionally writers will have a good reason to disregard these generalizations. Yet these generalizations can help all who wish to increase their skill in analyzing and revising English texts.

THE GIVEN-NEW STRATEGY OF COMPREHENSION

Sentences in texts which accord with the generalizations presented above facilitate readers' use of what Clark and Haviland call the given-new strategy of comprehension (Clark & Haviland, 1977). After dividing declarative sentences into given and new information, readers view the given as a pointer to a direct antecedent in memory and search for it. When they find it, they attach the new information to it. If they cannot find a direct antecedent, they can try a number of tactics:

a. forming an indirect antecedent by constructing an inferential bridge from something they do know.
b. viewing all the information in the sentence as new and adding a new node or some new nodes to memory.
c. (more rarely) trying to restructure the information in the sentence so that they do have an antecedent for the given information.

Thus a sentence will be relatively easy to process and comprehend if its given information is easy to recognize, matches a direct antecedent in memory, and appears before the new. When new information comes before given, a reader "must hold the new information in abeyance while waiting for the given information and searching for its antecedent. This increases the load on memory and makes comprehension less than optimal" (Clark & Haviland, 1977: 13).

The generalizations given above can help students of English understand many sentence patterns more fully and can undergird useful exercises.

STRATEGIES FOR MOVING WORDS AND PHRASES AROUND WITHIN SENTENCES

Several grammatical structures enable writers to express given information before new information by moving words and phrases around within English sentences.

The Passive Voice

Many students are admonished to avoid passive verbs. Passive verbs almost always lead to longer sentences than corresponding active verbs do, and sentences with passives are often harder to read, since they frustrate a common reading strategy of searching in each sentence for the agent, the action, and the goal of the action, in that order. And sometimes in sentences with passive verbs, references to the agent are omitted *(The valve was left open.)*. Such passives can have ethical implications when those at fault in an illegal and possibly dangerous action describe the action with a passive verb and omit references to themselves. Therefore, writers should be cautious about passives. But they should not avoid them altogether.

Passives are good choices when the agent is either obvious or unimportant. And they often can help writers express given information at the beginning of sentences. The gain in getting given information before new information will usually offset the losses incurred with greater sentence length and with the marked order of goals being expressed before agents. For example, in a sentence from *The Little Drummer Girl* (p. 56), John le Carré focuses on a telegram offering Alastair, an actor, a good part in a movie: "It [the telegram] had come up to the farmhouse on a Lambretta at ten that morning; it had been brought down to the beach by Willy and Pauly. . . ." Le Carré could have written the second clause in the active voice: *Willy and Pauly brought the telegram down to the beach.* But if he had, he would have lost the chance to express the given information about the telegram early in the clause.

Reversals

With some verbs (such as forms of *be, lie, rest, sit, hover,* and *stand),* writers can reverse the position of elements that would ordinarily appear early and late in a sentence. Instead of writing, *A challenge to traditional stylistic analysis was especially noteworthy in the essay,* they could produce, *Especially noteworthy in the essay was a challenge to traditional stylistic analysis.*

Writers often use reversals to mark with extra force the connection between given information and that which the given information connects to. One of my students recently concluded a paragraph on characteristics of the speech of autistic children and then opened the next paragraph with a sentence in which she used a reversal to get the subjective complement *(characteristic)* expressed before the subject *(difficulty)*: *Very characteristic of the speech of autistic children is the difficulty in communicating all but the simplest needs.* My student could have followed the more conventional order by writing *The difficulty in communicating all but the simplest needs is very characteristic of the speech of autistic children.* But if she had, she would have missed the chance to express *Very characteristic of the speech of autistic children* where it is nearest to the discussion of other

characteristics of autistics' speech, and she would not have been able to save the new information in this sentence (*the difficulty in communicating all but the simplest needs*) for the end of the sentence.

Fronts

Sometimes writers take an element that would ordinarily appear fairly late in a sentence and "front" it or move it to the beginning, leaving the order of the rest of the elements undisturbed. For example, they could change *They had wit* into *Wit they had.*

Writers sometimes use fronts to make the connection between the given information in one sentence and what that information connects to in an earlier sentence especially apparent. Note the front that Robert Hughes uses in the second of these sentences from *The Fatal Shore* (p. 11): *The Iora fished from canoes. These they made by cutting a long oval of bark from a suitable eucalypt and binding its ends together to make bow and stern.*

Fronts are perhaps even more common when two or more items have been mentioned and are then contrasted. In *David Copperfield* (p. 266), Mrs. Micawber says that participating in the coal trade on the Medway River requires talent and capital. Then she adds this: *Talent, Mr. Micawber has; capital, Mr. Micawber has not.*

Kinds of Possible Exercises

My colleagues and I regularly ask writing students to identify sentences in texts that could be changed using passives, reversals, or fronts to make the information in them flow from given to new. Students are also instructed to do the following:

a. imitate sentence forms.
b. edit individual sentences, pairs of sentences, and texts according to instructions involving passives, reversals, and fronts.
c. follow instructions involving passives, reversals, and fronts to compose sentences to fit particular contexts.
d. evaluate passives, reversals, and fronts in others' writing.
e. use passives, reversals, and fronts in their own writing and justify their use to us.[3]

SENTENCE PATTERNS THAT CALL SPECIAL ATTENTION TO NEW INFORMATION

Knowledge of given and new information can also help us understand sentence patterns that call special attention to new information.

The Expletive *There*

Although this is another sentence pattern that writers should use with

caution, uses of the expletive ***there*** can be justified, particularly when involving special presentations of new information. Often, for instance, writers use ***there*** to introduce a sentence in which everything or virtually everything after the ***there*** is new information. In effect, writers draw special attention to new information by making it the substance of an entire predication. This is what Walker Percy does in the first sentence of his essay entitled "Symbol, Consciousness, and Intersubjectivity": *There are two interesting things about current approaches to consciousness as a subject of inquiry.* Sometimes writers make all or part of the information that follows a ***there*** in a sentence the focal point for one or more subsequent paragraphs.

The *What*-Cleft

In forming *what*-clefts writers must *cleave* a sentence in two, just after the main verb. They then add a *what* to the beginning of the sentence and a form of *to be* after the original verb. In such constructions, all the elements through the form of *to be* carry given information, and all the elements after the form of *to be* convey new information.

Writers use such forms when they wish to give a strong clarification of an issue or a forceful reply to a question they think their readers might have. In "Literature in the Reader: Affective Stylistics" (p. 77), Stanley Fish uses the following *what*-cleft to clarify what he thinks his readers might be wondering: *What I am suggesting is that there is no direct relationship between the meaning of a sentence (paragraph, novel, poem) and what its words mean.*

Furthermore, *what*-clefts often respond to readers' probable questions by showing contrasts. For example, in *The Act of Reading* (p. 71), Wolfgang Iser asserts that the literary text cannot produce the "expected expectations" that are provided by the prevalent system of thought. Then he uses this *what*-cleft: *What it [the literary text] can and does do is set up a parallel frame within which meaningful patterns are to form.*

The *It*-Cleft (1)

Another sentence pattern that highlights new information (as well as given information to some extent) and that is formed by cleaving a sentence in two is the *it*-cleft.

There are two different kinds of *it*-clefts, each with its own functions. In the first kind the given information placed immediately after *it is* or *it was* refers to someone or something mentioned in a previous sentence. The new information that usually has special significance in context is placed after the *that*.

For example, one of my students uses such an *it*-cleft in an essay on the total physical response method of teaching languages:

In the back of the room, the home base chairs should be positioned. It is in these chairs that the students perform the actions to the commands of the teacher for all the others to see.

The new information is especially significant because performing actions in response to commands is at the center of the total physical response method.

The first kind of *it*-cleft can also signal contrasts. It is as if writers are saying to readers, "Only this given information can be connected to this new information." For example, at one point in *The Act of Reading* (p. 108), Wolfgang Iser argues that readers' understandings of a literary work cannot be completely controlled by that work. He concludes his case with this *it*-cleft... *and, indeed, it is the very lack of control that forms the basis of the creative side of reading.*

The *It*-Cleft (2)

The second kind of *it*-cleft is particularly striking because in it given information does not precede new information. In an *it*-cleft such as, *It was a cat who ate the popcorn,* the words *a cat* carry new information and the structure, *who ate the popcorn* carries given information.

Writers use this kind of *it*-cleft when they are confident that their readers already have the given information in mind but are facing obstacles in understanding the new information. For example, when readers know that something was done but do not know which of several people did it, writers use an *it*-cleft to focus on the appropriate person. P.D. James uses an *it*-cleft for this purpose in *Cover Her Face* (p. 209). At one point, several members of the Maxie family and Detective Dalgleish are having a tense conversation. Stephen Maxie asks how his sister, who had been attacked, is doing. Readers strongly expect someone to answer. But since there are many suspects, some of whom probably do not want to respond since a response might incriminate them, readers cannot tell who it will be. Then James uses the second kind of *it*-cleft: *It was Dalgleish who answered....*

Writers and speakers also use this kind of *it*-cleft to correct mistaken views they suspect that their readers and auditors have. Near the end of *Cover Her Face* (p. 196), Stephen Maxie is talking to a former employer of Sally Jupp. The employer expects Stephen to want to know more about Sally's past and to be concerned primarily with her death. But this is not the case for Stephen, and James has him use an *it*-cleft to set matters straight: *It's the child I'm really worrying about.* With the second kind of *it*-cleft, then, the order of given and new information is the reverse of what it typically is in English sentences. When writers use this form, the urgency they feel to convey the new information justifies expressing the new before the given, especially since the given is usually very nearly apparent.

Kinds of Possible Exercises

My colleagues and I often ask students to do the following:

a. examine uses of the expletive ***there*** in their own drafts and revise those that they cannot justify.
b. examine how other writers use the expletive ***there.***
c. transform sentences into cleft sentences.
d. complete a short paragraph with a kind of cleft sentence that we specify.
e. find some cleft sentences in print, identify what in these sentences is given and new information, and specify how these sentences function in context.

EXPRESSING GIVEN AND NEW INFORMATION IN APPROPRIATE FORMS AND PLACES

Writers can ask themselves several questions in order to check whether they have expressed given and new information in individual sentences in such a way that those sentences facilitate readers' use of the given-new strategy of comprehension.

Is the Given Information in a Sentence Marked Appropriately?

When information appears repeatedly in a text, subsequent appearances will usually take different forms. Some of these forms call more attention to the given information, or mark it with more force, than do others. For instance, *the old car with the dented fender* calls more attention to the car than *the old car* does. And *the old car* calls more attention to the car than *the car* does. Further, *the car* calls more attention to the car than *it* does. It is not necessary to determine precisely where on such a scale each referring expression fits. It is important to realize, however, that such ranges of referring expressions force writers to make a choice each time they refer to something.

Sometimes writers refer to something with too much force. Here are two sentences from an essay in which one of my students examines the language of twins:

> Savic also found some interesting features of twins' language in her study of adult-twin interaction. Savic found that twins tend to direct their utterances toward another person more than non-twins usually do.

In the second sentence I was expecting to find *she* rather than the heavier reference *Savic.*

Sometimes writers do not mark bits of given information with enough force. That is why information that writers apparently treat as given information can be difficult for readers to identify. In the next example, one of my

students marks some given information too lightly: *Finally, when Genie was 13 1/2 years old, Genie's mother sought help for her increasing blindness.* Instead of *her, which* could refer to Genie or her mother, either Genie's first name or words such as *her own* must appear.

As writers face such decisions, they should consider how long it has been since some given information has appeared. If it has appeared in the previous sentence, it usually needs less marking. However, if some given information has been conveyed in several successive sentences with expressions that call little attention to it, before too long that information will probably require an expression that attracts more attention to it. Readers' memories for given information fade slightly with each expression that calls little attention to the information, and after a while their memories have to be renewed. On the other hand, if a bit of given information has not been conveyed in the last page or two, it will require fairly strong marking when it appears again.

The area of marking given information is one in which it is difficult to formulate precise rules. However, writers can learn about tendencies in English, which should help them read others' writing and craft their own with sensitive eyes and ears.

Is All the Information Modifying Given Information Justified?

Linguists have found that readers typically accept the given information in a sentence as something beyond challenging, and—if they are inclined to challenge something—challenge the new information. Once writers realize this, they must resist the temptation to modify given information with information that could or should be challenged.

In a paper about her plans for teaching literature, one of my students states that she has one overall objective. Immediately after that she writes this sentence:

> This ambitious objective grew out of my discussions with some supervising teachers and out of my personal beliefs about literature.

In the subject of this sentence *this* and *objective* clearly carry given information. But *ambitious* has been expressed in such a way as to nudge the reader into accepting it. Had the word appeared in the sentence, *This objective is ambitious,* I would have considered its implications carefully.

But imagine a politician claiming the following: *My extremist and short-sighted opponent has appeared on television twice in a week.* This politician is modifying what is probably contextually given information (there is an opponent) with the words *extremist* and *short-sighted*, words that probably deserve to be debated. And at the end of the sentence the politician expresses information that no one would be likely to challenge. Thus, we can see how the placement of given and new information can manipulate readers or listeners.

Is the Given Information Expressed Before the New Information in Most Sentences?

My students occasionally express the new information in sentences before the given information. Thus I fairly frequently find phrases such as *still another, some of these, the second solution,* and *a similar problem*—all of which clearly convey given information—at the very end of sentences, precisely where the newest information should be. Here are a few examples of such sentences from essays by some of my former students:

> Aphasia occurs at least as often as a result of a lesion in the right as the left hemisphere for **these groups**.
> Speaking to unbelievers through tongues of a known or unknown language and having the speaking interpreted is **another way this can be accomplished**.
> The possibility for children to work and develop at their own pace is **a fourth advantage for home-schoolers.**

All of the example sentences should be revised in order to get the information flowing from given to new.[4]

One reason that the given information in such examples appears last is that, as many people compose, their main concern is to come up with new information, which they then tend to express first in their sentences. Another reason is that writers have heard so often about varying the beginnings of their sentences that they sometimes tend to move bits of given information to the ends of sentences just for the sake of variety.

But if new information comes before given information in a sentence, readers must try to retain the new at the same time that they continue into the sentence in search of the given. When they find the given, they might have to review the new information to remind themselves of its details. Such processes take time and drain the energy available for reading.

Evaluating the status of information as writers compose may impede their flow of thought. Thus, I suggest that they wait to give most of their direct attention to the given-new order of information until they revise their sentences.

Kinds of Possible Exercises

My colleagues and I give our students a sentence followed by a pair of other sentences and ask them to select the one from the pair in which the given information seems marked more appropriately. We may also ask them to find sentences (perhaps from political campaigns or propaganda) in which the given information is modified by information that perhaps is not justified as given information. We give them a sentence followed by a pair of sentences and ask them which sentence in the pair flows from given to new information and not the other way around. Finally, we give

them paragraphs in which some sentences flow from new to given information and have them find these sentences and revise all those they decide should be changed.

EXERCISES ON GIVEN AND NEW INFORMATION IN SENTENCES WITHIN A TEXT

Writers can learn many of the important lessons about given and new information by examining individual sentences or pairs of sentences. However, they generally will put these lessons to use in their writing within paragraphs and entire texts. In this section, therefore, I will present some exercises and analyses that can help writers check on and perhaps improve the flow and formal coherence of paragraphs and texts.

Choosing an Effective Order of Elements Within Some Sentences in a Text

Rei R. Noguchi (1991: 104) asks students to "rearrange the information in the asterisked items . . . in order to come up with the smoothest-reading paragraph":

> *(1) At our school, the football team is one of the few teams to have a well-organized junior varsity program. (2) The school knows it must have a strong j.v. team to field a strong, experienced varsity. (3) */the women's field hockey team/ a prime example of / is / what a strong junior varsity program can do for the varsity program /. (4) */ five separate j.v. hockey teams / the women's field hockey program / three of which / consists of / compete against other schools/. (5) */ as the fourth best team in the nation / because of this program / the varsity finished /. (6) Over and beyond the high ranking, over one hundred girls at the school participate in this single sport. (7) Every sport should be the same.*

Noguchi writes that students will probably come up with a version like this:

> *(1) At our school, the football team is one of the few teams to have a well-organized junior varsity program. (2) The school knows it must have a strong j.v. team to field a strong, experienced varsity. (3) A prime example of what a strong junior varsity program can do for the varsity program is the women's field hockey team. (4) The women's field hockey program consists of five separate j.v. hockey teams, three of which compete against other schools. (5) Because of this program, the varsity finished as the fourth best team in the nation. (6) Over and beyond the high ranking, over one hundred girls at the school participate in*

this single sport. (7) Every sport should be the same. (Noguchi, 1991: 104)

Students who know enough about given and new information to produce such a version have taken a significant step toward understanding formal coherence.

Choosing an Effective Path of Information Through a Paragraph

In the following exercise students select the sentence in each pair that moves from given to new information in the context established by the first sentence and the subsequently chosen sentences:

Climatologists have predicted that the continual warming of the earth's surface, known as the "greenhouse effect," could have dramatic consequences.

1a. The melting of the polar ice caps could be one result.	*1b. One result could be the melting of the polar ice caps.*
2a. This melting would, in turn, cause a rise of the sea level.	*2b. A rise of the sea level would, in turn, be caused by this melting.*
3a. Coastal flooding would occur as the sea level rises	*3b. As the sea level rises, coastal flooding would occur.*
4a. Such disastrous effects might be lessened to some degree by cloud reactions.	*4b. Cloud reactions might lessen to some degree such disastrous effects*

(Jan Frodesen, 1991)

I have also found this exercise useful for ESL writers even at early stages of development.

Revising Paragraphs for Effective Information Flow

The students are asked to find and revise sentences in a paragraph that do not flow from given to new information:

Research Writing is probably the most valuable course for college students. The assignments for this course are three short expository essays and two long research papers. Thus the course requires a great deal of students' time, often too much in their view. But future success in college is almost synonymous with passing Research Writing. Some of the benefits of the course are gaining greater familiarity with the library and developing organizational skills, analytic ability, and smooth writing style. Some of its disadvantages are cramped fingers, bloodshot eyes, and irritability before deadlines. Only first-year students may take Research Writing.

The first sentence that should be revised is the fourth one, which should appear thus: *But passing Research Writing is almost synonymous with future success in college.* The last sentence should also be revised, as follows: *Research Writing may be taken only by first-year students.*

A natural extension of this exercise is to have the students, as individuals or in groups, compose such paragraphs themselves for others to revise.

Examining the Early Portions of Sentences in a Text

When students are revising their texts, a useful exercise is to have them list either the complete grammatical subjects or the first six or seven words from the sentences in their texts. If the students have not expressed given information early in their sentences, they will likely find that the people or things referred to in their lists do not make up a very coherent set of focal points. Here is a paragraph from one of my students, with all the complete grammatical subjects italicized:

> *Light rock-and-roll* can be as comforting to a college student as classical music can be to a professor. *Most radio stations* play light rock-and-roll. *Themes about sex, alcohol, and violence* come up in the lyrics of light rock-and-roll. But *country music* deals with sex, alcohol, and violence too.

The subjects in this paragraph are not radically unrelated, but they fall short enough of constituting an obviously coherent set that my student was led to see that he had missed some chances to express given information in a sentence subject. His revised paragraph had a much more coherent set of sentence subjects, a significant step toward achieving formal coherence:

> *Light rock-and-roll* can be as comforting to a college student as classical music can be to a professor. *Light rock-and-roll* is played on most radio stations. *The lyrics of light rock-and-roll* bring up themes about sex, alcohol, and violence. But *these themes* come up in country music too.

Analyzing and Writing About Others' Prose

Teachers can ask students to read others' prose and to analyze in writing to what extent those writers facilitate readers' application of the given-new strategy of comprehension to that prose. Once my students learn to examine whether sentences in a text convey both given and new information and where this information appears, they make insightful judgments about that text.

For instance, one student recently noted that the given information in the essay he analyzed almost always achieves that status on the basis of explicit connections to references included earlier in the essay. Another stu-

dent noticed how a certain writer often begins a paragraph with a reference to material that appears at the end of the preceding paragraph. Still another complained that the author of a book on German poetry seems to assume more knowledge of German culture on the part of readers than my student felt many actual readers would have. Finally, another student wrote that in some of Kant's writing a progression of given and new information is present but that it can easily get lost among qualifying information expressed in rather unwieldy sentence structures. Comments like these show how perceptive students can be about the structure of texts and about the possible interactions among writers, readers, and texts.

FURTHER WORK

As students become increasingly skilled and comfortable with exercises and analyses such as those presented above, teachers can invite them to explore matters related to given and new information further. For instance, teachers and students could follow Prince's (1992) lead and explore more precise definitions of given and new information or of degrees of given and new information than those I have used here. Such definitions promise to add important nuances to the exercises and analyses described here and promise to suggest new studies: studies of kinds of information in multi-clausal sentences, of patterns of development of information within texts, of processes of development among writers, of different ways of reading, of different kinds of genres, and of ways to characterize prose styles.

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Notes:

1. Not all FSP linguists, however, agree on the number of parts into which a sentence should be analyzed, how the parts are to be distinguished from one another, what the parts should be called, and what functions they have.
2. One can say with some justification that there are three dominant formulations of FSP, one of which provides the foundation for this chapter (see Vande Kopple, 1986, for a description of the other two formulations).
3. Several examples of such exercises appear in my *Clear and Coherent Prose* (1989).
4. Occasionally writers may be able to justify expressing new before given information (as is the case with the second kind of *it*-cleft), particularly if they judge that their readers, because of contextual constraints, simply cannot wait within a sentence to learn the new information.

17

Theme and New in Written English

Peter H. Fries

Teachers often experience difficulties explaining to students how they should order the information in their sentences. Two concepts are helpful in this task: ***Theme*** *and* ***Information Focus****. Theme is the point of departure of the clause as message. In English one can recognize Themes because they occur first in the clause. By contrast, information focus (or New, in more technical terms) is the information which is being presented as newsworthy. It contains the point of the clause, the information which the listener or reader should remember. In written language there is a tendency for New information to be presented at the end of the clause. Thus, in written language there is regularly a periodic motion from Theme (the point of departure of the clause) to the New information (information which is being presented as newsworthy). An advertisement will be examined in detail to demonstrate the operation of Theme and New in written text and implications for teaching will be drawn.*

THE CONCEPTS OF THEME AND RHEME

Both native English speaking and non-native English speaking students have difficulty ordering the words in their sentences. They often ask what the difference is between sentences such as (1) and (2).

1. They left their examinations on the table yesterday.
2. Yesterday, they left their examinations on the table.

Clearly, the answer does not lie in the world being described in the two sentences, but rather in the way that world is presented. We can say, rough-

ly that *yesterday* receives focal attention in sentence 1, while *on the table* receives focal attention in sentence 2. By the same token, in these sentences. *They* and *Yesterday* serve an orienting function; they set up a context in which the remainder of the sentence is to be interpreted. These issues concern the flow of information in a text: how the information presented in a given sentence is to be interpreted and related to its context. That is, they concern the role of the text as message. In this paper, I will discuss the flow of information in text using a theory—Systemic-Functional linguistics—as a framework for that discussion. Systemic functional grammar is a multi-functional view of language in which each metafunction assigns a structure to the clause. Issues concerning the flow of information are addressed in Systemic Functional linguistics under the heading of the textual metafunction.

Chart 1 presents a representative analysis of a spoken clause complex.

<table>
<tr><td></td><td>// 4 If</td><td>he</td><td>brings</td><td>the car</td><td>// 1 we</td><td>can</td><td>use</td><td>it //</td></tr>
<tr><td rowspan="4">Textual Meta-function</td><td colspan="5">Theme 1</td><td colspan="4">Rheme 1</td></tr>
<tr><td>structural</td><td colspan="2">topical</td><td colspan="2"></td><td>topical</td><td colspan="3"></td></tr>
<tr><td colspan="3">Theme 2</td><td colspan="2">Rheme 2</td><td>Theme 3</td><td colspan="3">Rheme 3</td></tr>
<tr><td colspan="4">Given →</td><td>New</td><td colspan="3">Given</td><td>New</td></tr>
<tr><td rowspan="2">Interpersonal Meta-function</td><td></td><td>Subject</td><td>Finite</td><td>Predicator</td><td>Complement</td><td>Subject</td><td>Finite</td><td>Predicator</td><td>Complement</td></tr>
<tr><td></td><td colspan="2">Mood</td><td colspan="2">Residue</td><td colspan="2">Mood</td><td colspan="2">Residue</td></tr>
<tr><td rowspan="2">Ideational Meta-function</td><td colspan="4">Xβ</td><td colspan="4">α</td></tr>
<tr><td></td><td>Actor</td><td colspan="2">Material</td><td>Goal</td><td>Actor</td><td colspan="2">Material</td><td>Goal</td></tr>
</table>

Chart 1: The multifunctional structure of a clause complex.

Each heavy horizontal line separates a metafunction. Chart 1 illustrates a) that each metafunction assigns its own structure, b) that these structures differ in important ways, though they partially overlap, and c) that thematic structure and information structure form part of a complex of interlocking structures. We will turn to thematic structure first (the top three lines of the analysis in Chart 1). Thematic structure assigns the functions Theme and Rheme. The clause complex has one thematic structure as a whole (Theme 1 and Rheme 1 in the top row of the chart), and each clause itself also has a thematic structure (Theme 2 and Rheme 2 in the first clause, and Theme 3 and Rheme 3 in the second clause). In other words for the whole sentence, the dependent clause, *If he brings the car* functions as theme (Theme 1), while each clause has its own clausal

theme. *He* is the theme for the first clause (Theme 2), and *we* is the theme for the second clause.

Halliday defines thematic structure primarily for the clause, but makes it clear that other units such as clause complexes also have thematic structures.[1] Thematic status is signaled in English by initial position in the clause or clause complex. The meaning of Theme is described as the 'point of departure of the message' and as 'that with which the clause is concerned' (Halliday, 1985: 38). Halliday clearly intends these two wordings to be paraphrases; however, the second wording in particular tends to be associated with the notion of Topic. In my view, Topic is a rather different concept. Indeed Fries (1981) and Downing (1991) explicitly attempt to disassociate the definitions of the notions Theme and Topic.[2] In my view a better description of the significance of Theme is that the Theme of a clause provides a framework for the interpretation of the clause. The Theme orients the receiver to what is about to be communicated. This orienting function is nicely described in Bäcklund's (1989) discussion of initial infinitive clauses. She suggests that initial infinitive clauses can be viewed as reflecting questions posed by an imaginary reader. In her words, '... they indicate which potential question the writer has chosen to answer' (p. 297).

In contrast to Thematic structure, Information structure is not directly a structure of the clause, but of the information unit. Information units are signaled in the spoken language by the tone group. Each tone group has some section which expresses information which is presented as New information. The tonic foot (the location of the so-called sentence accent) indicates 'the culmination of what is New' (Halliday, 1985: 275). In addition to information which is presented as New, information units may contain information which is presented as Given, but they do not necessarily do so. New information is information which is presented as 'newsworthy'—as worthy of the listener's attention, while Given information is presented as information which is recoverable in some way. Two points are important here. First, Given[3] and New are functions within language. It is not true that all information which happens to be new (= unfamiliar) to a listener is presented as New, nor is it true that all information which is presented as New is in fact new (= unfamiliar) information for the listener (even taking into account issues concerning differences in the knowledge and beliefs of the speaker and listener). Second, as described above, the functions of New and Given are overtly signaled only in the spoken language. Clearly, written language must present some information as New. One means by which this task is achieved is through the correlation of the tone group with clause structure. A number of linguists (e.g., Chafe 1980:13, 1984:437, 1987:38 and 40, and Halliday 1985: 274) have found

that in spoken English there is an unmarked association of clause structure with unit of information. Further they find a tendency to place New information toward the end of the information unit. (See for example, Clark and Haviland 1977: 13, Chafe 1987: 37.) As Halliday (1985: 276) expresses it, 'The unmarked position for the New is at the end of the information unit.' Indeed many linguists refer to the tendency to place important information toward the end of the clause with the term 'end focus.'

It is often said that writers tend to use this association of placement at the end of the clause with importance to make their written language flow naturally. If this is true, there ought to be a correlation between placement at the end of clauses and information which appears to be the focus of attention. Systemicists therefore have two theoretical constructs: Theme and New. Theme is associated directly with initial position in the clause and functions as orienter to the information which is about to come, while New is associated indirectly with the end of the clause in written English. Information which is presented as New is the focus of attention. It is the newsworthy part of the message. Although systemicists have a term (*Theme*) which refers to the initial constituent of a clause or clause complex, they do not have a term which refers to the final constituent of a clause or clause complex. As a result, I have coined the term *N-Rheme* (for New-Rheme) to provide a convenient way of referring to the last constituent of the clause or clause complex.

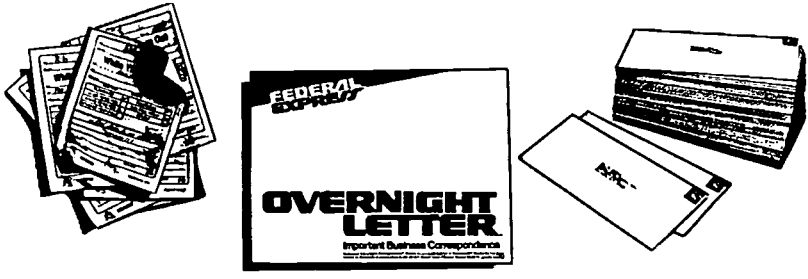
We can use the descriptions of Theme and N-Rheme as the source of hypotheses to predict the placement of information in written language.

1. N-Rhematic information contains the newsworthy information, information which is in focus in that message. As a result the N-Rhemes are likely to contain information which is directly relevant to the goals of the text or text segment.
2. Thematic information serves as orienter for the message which is about to come up. As a result it responds to local issues in the text and is less likely to contain meanings which are directly relevant to the goals and purposes of the text or text segment.

Written advertising appears to be a good place to explore these hypotheses, since much of written advertising is constructed to read as if it were spoken. Rather than provide a statistical analysis of the placement of information in a variety of advertisements, I will examine here the flow of information in one advertisement in some detail.

The advertisement I will examine in detail is the advertisement for MCI Mail reproduced in Figure 1.

THE MOST COSTLY MISTAKES IN BUSINESS.



The way most businesses work today simply isn't working.

Too much time's wasted calling people who can't be reached. So connections aren't made, and deals fall through.

Too much money's spent on overpriced, overnight couriers. That devours your bottom line.

And by the time the post office delivers your bid, someone else could have the job.

That's why there's MCI Mail.

MCI Mail is a new kind of business tool. One that lets you use your personal computer to send and receive information instantly. And inexpensively.

So instead of sending out sales information to customers in days, MCI Mail lets you do it now. You can get leads out, now.

Send sales updates to all your salespeople, instantly. Receive orders the day the deal's signed. And follow up in a flash.

All for less than what you're paying for the hassles and headaches tied to the way you usually communicate.

Start moving your business ahead now – for less. Call 1-800-MCI-2255. In Washington, D.C., call 833-8484.

Now is the time for me to find out about MCI Mail.

Mail to: MCI Mail
Box 1001
1900 M. Street NW
Washington, D.C. 20036

Name_____
Title_____
Company_____
Address_____
City, State, Zip_____
Tel. ( )_____

MCI Mail

NOW IS THE TIME FOR MCI MAIL.

Figure 1

I have typed the text of the advertisement in Text 1, numbering each new punctuated sentence and beginning it on a new line.

1. THE MOST COSTLY MISTAKES IN BUSINESS.
2. The way most businesses work today simply isn't working.
3. Too much time's wasted calling people who can't be reached.
4. So connections aren't made, and deals fall through.
5. Too much money's spent on overpriced, overnight couriers.
6. That devours your bottom line.
7. And by the time the post office delivers your bid, someone else could have the job.
8. That's why there's MCI Mail.
9. MCI Mail is a new kind of business tool.
10. One that lets you use your personal computer to send and receive information instantly.
11. And inexpensively.
12. So instead of sending out sales information to customers in days, MCI Mail lets you do it now.
13. You can get leads out, now.
14. Send sales updates to all your sales people, instantly.
15. Receive orders the day the deal's signed.
16. And follow up in a flash.
17. All for less than what you're paying for the hassles and headaches tied to the way you usually communicate.
18. Start moving your business ahead now - for less.
19. Call 1-800-MCI-2255.
20. In Washington, D.C., call 833-8484
    [[On coupon]]
21. Now is the time for me to find out about MCI Mail
22. Mail to: MCI Mail, Box 1001, 1900 M Street, N.W., Washington D.C., 20036
    [[Coupon also has lines to fill in reader's name and address]]
23. MCI MAIL
24. NOW IS THE TIME FOR MCI MAIL
25. © 1985 MCI Communication Corp.
26. MCI Mail* is a registered service mark of MCI Communications Corp.

Text 1: MCI Mail Advertisement

I would like to focus on the use of word order in this text, showing how word order is used to emphasize certain meanings. Thus, I first need to discuss the meanings expressed in this text. It is obvious that this advertisement goes through several stages. It expresses a request (Sentences 18-20) which is preceded by a motivation for that request (sentences 1-17), and a section which helps the readers comply with the request (sentences 21-23 and the coupon). The motivation section describes a *problem* which is then followed

by a *solution*. Of course this structure is encoded in the language and the visuals of the advertisement. Therefore it is useful to examine the language of the advertisement to see how these meanings are communicated.

As was said above, the first section of the advertisement presents a *problem*. We can ask two questions:

1. What features of the language tell us that there is a problem?
2. What features tell us what that problem is?

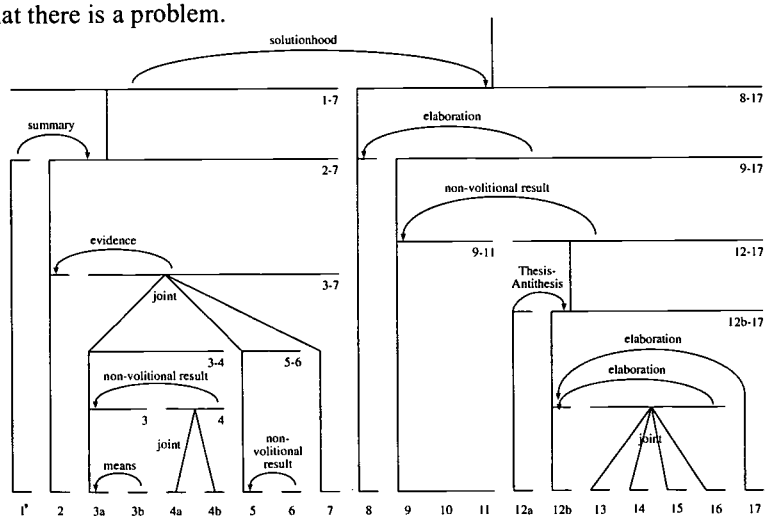
The second question can be answered in a very general way simply by looking at the types of processes used in the motivation section of this ad (See Halliday 1994). If we look at the non-embedded clauses in this text, we see that 17 out of the 20 processes are material processes.[4] That is, they are actions. These seem to be evenly distributed throughout the text. Thus, both the problem and its solution seem to center around a kind of *doing*. This result is hardly surprising, since the advertisement describes a service. However, since the service concerns communication, the absence of clear verbal processes **is** somewhat surprising.

Let us now return to question 1: How do we know that there is a problem? The language of punctuated sentences 1-7 provides a partial answer. One of the most obvious features of this section is the large number of negatives. There are overt grammatical negatives in *isn't working* (2), *can't be reached* (3), and *aren't made* (4). There are the implied grammatical negatives in *too much time* (3), *too much money* (5), and *over-priced* (5). There is the implied negative which arises from contrast [*someone else could have the job* (7) - implying 'not you']. There are lexical negatives in which the dictionary definition of a word includes a negative as in mistake (1),[5] wasted (3),[6] and fall through (4).[7] There is a pragmatic negation in *by the time the post office delivers your bid* (7) which implies that the post office does not deliver your bid until someone else could have the job. Finally, a number of processes describe events which are negatively valued in business. In business, connections should be made (4), deals should not fall through (4), bottom lines should not be devoured (6), nor should other people have the job you bid for (7). In other words, it is tempting to say that we know that this section describes a problem simply because of the pervasive use of negatives. That is, the problem might be one where things are not happening.

However, this is too simple an answer, for many things happen in this section of the text as well. *Most businesses work* (2), people are called (3), *money's spent* (5), *the post office delivers your bid* (7). Also the processes which are negatively valued are expressed in positive sentences. *Time is wasted* (3), *deals fall through* (4), *That devours your bottom line* (6). First it is to be noticed that the events that take place do so in the context of the negations. Thus, calling people is the **means** by which time is wasted. It is true that the post office delivers the bid, but it does so too late. One can say that this *problem* section presents a picture of frustrated activity. One way of getting a better focus on the nature of the problem is to examine the relations

between the processes. I will use a means of discussing these relations called rhetorical structure theory (Mann and Thompson 1988; Mann, Matthiessen and Thompson 1992).

Rhetorical structure theory (= RST) views texts as consisting of hierarchically related text segments. Each relation belongs to one of a limited list of relations such as solutionhood, (in which one text segment presents a problem and a second text segment presents a solution to that problem), non-volitional result (in which one text segment presents a situation that is not a volitional action, and a second presents a situation that caused that situation), or elaboration (in which one text segment provides additional details about some aspect of the situation expressed in a second text segment). Figure 2 presents an RST analysis of the first 17 punctuated sentences of the MCI Mail advertisement—the portion of the ad which expresses the problem and its solution. Again, sentences 1-7 express the problem. Sentence 2 expresses a generalization which describes the current situation as not working. (A negative evaluation of the current situation, and an indication of a problem.) This claim is then supported by three bits of evidence expressed in sentences 3-4, 5-6 and 7. It turns out that the first two text segments (sentences 3-4 and 5-6) express non-Volitional result. That is, the waste of time referred to in (3) is presented as the cause of the connections not being made and deals falling through described in (4). Similarly, the high cost of overnight couriers referred to in (5) is presented as the cause of the bottom line being devoured mentioned in (6). In addition sentence 7 could reasonably be interpreted as at least implying non-volitional result in which *By the time the post office delivers your bid* implies that the post office delays delivering the bid, and this delay is seen as the cause of *someone else could have the job*.[8] If we look at the consequences in this small text segment, each one is one which should not happen. They are negatively valued in the business world. Thus, the negative value attached to the description of the current situation is the indication that there is a problem.



When we turn to analyze the causes of the current situation which are expressed in this section of the advertisement, we see that in (3a) it is the waste of time, in (5) it is spending too much money, and in (7) it is the (implied) delay in time. Of course, it is not true that these factors are the **entire** cause of the problems described. The grammatically prominent use of the lexical items *call, reach, connections, deals, courier*, and *bid*, all indicate that an important part of the problem is communication. Thus, time and money in regard to communication is brought into the reader's attention as an issue—as a **cause** of bad things happening.

Now let us turn to the solution section of the advertisement. How do we know that this section solves the problem presented in sentences 1-7? On the one hand this section is concerned largely with communication. However, communication is expressed largely as 'moving information.' Table 1 presents an analysis of the meanings expressed in each of the messages of this section.

S #	Agent	Actor	Instrument	Material	Goal	Circumstance	Circumstance	Circumstance
	MCI Mail	lets you	use your PC to	send and receive	information		instantly	and inexpensively
12a.	instead of	[you]		sending out	sales	to customers information	in days	
12b.	MCI Mail	lets you		[send out]	[sales information]	[to customers]	now	
13.		you		can get out	leads		now	
14.	[and]	[you]		[can] send	sales updates	to all your sales people	instantly	
15.	[and]	[you]		[can] receive	orders		the day the deal's signed	
16.	and	[you]		[can] follow up			in a flash	
17.		[you]		[can do]	all			for less than what you're paying for ...
[17]		[you]		[commu – nicate]				

Table 1: Cohesive harmony analysis of punctuated sentences 10-17 of MCI Mail advertisement

The major verbs in this section are material processes (actions) such as *send, receive, get out*, and *follow up*. None of these verbs necessarily involve communication by definition; however, when we look at the Goals of the processes—what receives the action of the verb—we see that information is involved. The Goals are *information, sales information, leads, sales updates* and *orders*. Not only does this portion of the advertisement repeat the notion of transferring information, it also repeats the idea that this transfer can be achieved swiftly and cheaply. Every punctuated sentence from 10 through 17 mentions either time or expense. One can also see that MCI Mail is the factor which enables all this to happen, since it is encoded as Agent—the external cause of all these processes.

Of these ideas, which ones receive the greatest emphasis? If we look at sentences 10-17, we can see that the last constituent of each punctuated sentence refers either to time/speed, or money, or both. These expressions regularly take on the grammatical role of Circumstantial Adjuncts placed at the ends of their clauses (i.e., in the N-Rhemes of the clauses). Often they are punctuated as complete sentences, even though they are not grammatically complete. This placement and this punctuation serves to indicate that they are being presented as New information. These are meanings which are being emphasized.

Of course, given the nature of the problem presented in sentences 1-7 (and more specifically, the nature of the **cause** of the problem described in 1-7), we could predict that the notions of time and money should be emphasized in the Solution section. That is, sentences 1-7 brought speed of communications and cost of communication into our attention **as issues**, and sentences 8-17 addressed these issues in the N-Rhemes. By contrast to the information in the N-Rhemes of the clauses, the information placed in the Themes of the Solution section avoid all mention of time or money.

Another way of approaching the issue of the use of thematic and N-Rhematic information is to compare the information placed in the Themes and N-Rhemes of the two sections of the text. Table 2 lists the clause Themes of the clauses in the Problem section and the Solution section of the MCI Mail ad.

	Problem (sentences 1-7)		**Solution (sentences 8-17)**
2.	The way most businesses work today	8.	that
		9.	MCI Mail
3a.	too much time	10.	
3b	calling	11.	
4a	so connections	12a.	instead of sending
4b.	and deals	12b.	MCI Mail
5.	too much money	13.	you
6.	that (= spending too much money)	14.	[you]
7.	By the time the post office delivers your bid	15.	[you]
		16.	[you]
		17.	all

Table 2: Clause Themes in punctuated sentences 2-17 of the MCI Mail advertisement.

Clearly the Themes of the two sections express different information. In the problem section, three of the eight Themes contain evaluations concerning time or money ((3a) *too much time*, (5) *too much money* and (6) *that* (= spending too much money on couriers). One additional Theme mentions time with no obvious evaluation ((7) *by the time the post office delivers your bid*).

Three additional Themes mention concepts which are obviously connected with communication in the business world [(3b) *calling* (4a) *connections*, and (4b) *deals*]. One more Theme [that of (2)] refers to business in a general way. At no point in the Problem section of this advertisement is a reference to time or money made in the N-Rheme of a clause.

When we move to the Solution portion of the advertisement, we see a very different pattern of information. Four of the eight Themes mention *you*. (Note that punctuated sentences 10 and 11 are interpretable only as extensions of sentence 9, and therefore constitute only part of a clause structure which encompasses 9-11 as a whole.) *MCI Mail* is encoded as Theme in one clause, *That* (referring to the entire section 2-7) is Theme of one clause, The Theme of 12a is *sending*, and *all*, the Theme of sentence 17, refers to what you can do using MCI Mail as described in the entire sequence 13-16. None of the Themes in the solution section contains an evaluation or a reference to time or money.

CLASSROOM APPLICATIONS

What relevance do the issues discussed here have for teaching students to read and write? I would like to suggest three ways in which these issues are relevant. First, there is the obvious one of helping students become sensitive to what they write—to the signals they give their readers as to what is important, and how they can orient their readers to what is to come. For example a student of mine once wrote the paragraph given in Text 5:

1. To solve the world hunger problem, agriculturists suggest we should focus on increasing the production and improving the marketing of traditional crops such as rice, wheat, barley, corn, millet, and root crops, or on finding new ways to get more out of domesticated animals.
2. Unfortunately, many agriculturists overlook an important possibility to supplement the current system of food production.
3. A variety of unconventional foods can be used in order to solve the food shortage problem in the third world.
4. By using non-traditional species of plants and animals, many of the world's poorer nations can be fed.

Text 5: student text A

Text 5 was the first paragraph of a paper in which the student wished to discuss alternative food sources. The immediately following paragraph began this discussion by introducing one unusual food source. Here I am primarily interested in sentences 3 and 4. If we ignore the repetition in these sentences, we can see that each one mentions the concept of unconventional food sources. In addition, each one refers to the world-wide food shortage problem which was mentioned earlier. Now these ideas are essential to provide a bridge between the first sentences of the paper and the body of the paper.

However, the student's point is that we need to examine new food sources, while the notion of the food shortage has already been mentioned. Thus, the reference to the new food sources should normally appear at the end of the sentence, while the reference to the food shortage problem should appear as the Theme. This student has ordered the information in her sentences in exactly the opposite way that is required.

A similar instance is provided in Text 6. Again, this is the first paragraph of a student paper.

1. Alcoholism has always been a major problem in the U.S.
2. In the past few years, though, an alarming increase in teenage alcoholics has been found in research studies.
3. Nobody really knows what the reasons actually are, but many believe that young people have a too easy access to liquor.

Text 6: Student Text B

Here sentence (2) illustrates a problem which often arises. The student has placed information which is quite unimportant in the N-Rheme of the clause —a focal position. That is, in this context, it is perfectly obvious that findings are produced in research studies. Indeed, that information can be considered redundant, and the sentence would be improved if the last prepositional phrase were deleted, giving (2b).

2b. In the past few years, though, an alarming increase in teenage alcoholics has been found.

The result of this change is to bring *found* (a much more important idea in this context) into the N-Rheme. Another possible revision would be to move the notion of *teenage alcoholics* (another important meaning in this context) into the N-Rheme position, perhaps by changing the sentence to the active voice as in (2c).

2c. In the past few years, though, research studies have found an alarming increase in teenage alcoholics.

Notice that in (2c), even though *research studies* is still redundant information, it has not been placed in as prominent a position as it was in the original (2) (it is neither Theme nor N-Rheme) and so is not so obtrusive as it was in that version. (Of course another possible wording would be to substitute *researchers* for *in research studies*.) Composition teachers have long known that the beginnings and endings of sentences are important. More recently linguists have investigated the phenomena of placement within the sentence and agree that the two ends are important, but they are important for different reasons. The beginning of the sentence is important because it provides a framework to interpret the message expressed in the remainder of the clause.

The end of the clause is important because it indicates the point of the sentence as message; what one is trying to say.

A second implication for the teacher is that a focus on how text is constructed can help learners become better readers and writers. If a text is interpreted as having a problem-solution structure, then what is it about the language of that text that leads us to interpret it that way? Similarly, if some element is perceived as New information, then what is it about the way that concept is expressed that leads us to interpret it as New? We cannot be satisfied with simply looking at the external situation and saying that in our view as analysts X is a problem or Y is New to the listener. If I can paraphrase the old joke about the baseball umpire "It ain't a problem unless the speaker *presents* it as a problem." "It ain't New unless the speaker *presents* it as New." We must teach our students to be sensitive to the language that writers use as they are presenting their ideas, so that the students become sensitive to the issues which are of primary concern to the writers.[10] The placement of information in the clause and sentence constitutes such a signal, and sensitizing our students to patterns in the placement of information will help them better interpret texts.

Finally, I suggest that advertising be taken seriously as effective writing. Many of us are familiar with the study of advertising as a misleading medium of communication, and many teachers devote significant class time to unraveling the logical fallacies and hidden persuasion in advertising (double speak.) On the other hand, it is obvious that advertising is successful writing in that people are led to buy products by successful advertising campaigns. Looking at advertisements as 'double speak' as is done in the United States will help protect children from the dangers of advertising, but will not address the issues of why advertising is so often successful. To do that it must be taken seriously, and studied carefully.

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Notes:

1. See Fries (1981) and Halliday (1985, 1994) for analyses of Themes at the ranks of clause complex and clause.
2. It is worth noting that in my view these attempts to dissociate the definitions of Theme and Topic are quite consistent with Halliday's view of the notion of Theme.
3. Terms which refer to grammatical functions will be capitalized. Terms which are being used informally will be written normally.
4. See Halliday (1985 and 1994) for descriptions of embedded and non-embedded clauses and for a classification of process types.
5. A mistake is an action of opinion that is incorrect or foolish or that is not what

you intended to do, or whose result is undesirable. (Sinclair et al. 1987)

6. If you waste something such as time, money, or energy, you use too much of it on something that is not important, valuable, or likely to be successful (Sinclair et al. 1987).
7. If an arrangement, plan, deal, etc. falls through, it fails or is unsuccessful before it can be completed (Sinclair et al. 1987).
8. In spite of the comma punctuation, 7 is one clause and not two. In *By the time **the post office delivers your bid,*** the underlined portion is an embedded clause with *time* as the head. Therefore, there is no clausal relation between *By the time the post office delivers your bid* and *someone else could have the job* just as there would not be a non-volitional result relation between *By noon* and *someone else could have the job.*
9. Segment 1 is both a label for the visual image in the advertisement, providing an interpretation for that visual image, and at the same time summarizes the problem which is about to be described in segments (2-7) of the advertisement. Since RST analysis only accounts for the relations between text segments, it takes no account of the important relation between (1) and the visuals.
10. Of course in saying this, I do not mean to imply that the only relevant readings of a text are ones the writer intended. However, readers must be sensitive to the signals provided in the text, and should be aware of the ways information is being emphasized or de-emphasized by the language used.

18

Waves of Abstraction: Organizing Exposition

J.R. Martin

Students are often told to, "tell readers what you are going to say; say it; and tell them what you have said." This paper will look at what this advice actually means in linguistic terms, both with respect to organizing information and in terms of the abstract language needed to construct organization of this kind. I will make use of a number of re-worked versions of a student text to illustrate my points, with reference to Halliday's notions of theme, new and grammatical metaphor.

Once upon a time... when I was still in school in Canada, one of my teachers suggested that in exposition it was important to tell people what you're going to say, say it, and then tell them what you've said. Alongside a little traditional grammar, this was about all that was left of a once rich tradition of teaching in grammar and rhetoric—which the western world inherited from the ancient Greeks. As far as teaching writing is concerned, I doubt that even these impoverished relics of this tradition remain in many Commonwealth schools. But the textual organization they attempted to prescribe is still with us. Here 'for example' is a piece of geography writing from an Australian secondary school (the student is in Year 10, and so about 15 years old).

WHY ANIMALS ARE EXTINCT

Man has been making animals rare and even extinct for thousands of years, and one of the main ways man has achieved this is by the destruction of their habitat. The destruction of a habitat means that the vital balance between an animal and its environment is dis-

> turbed. In ancient times the destruction of habitat and the extinction of animals was quite small. Since then it has rapidly increased. People began to make more use of machines and industrialisation occurred bringing with it changes which would destroy the face of the earth's environment forever. As the demands grew, wood and later coal, supplied the resources needed, this in turn resulted in the destruction of forests and habitats. At the same time that industrialisation was taking place humans were settling in new parts of the world. Whenever they settled, nests were cut down and farms established. This destroyed the habitat of many animals.
>
> The effects of industrialisation and the need of more land due to the growth of population seriously affected wildlife and still is today already half the worlds tropical rainforests have already been destroyed or irreversibly damaged. This reckless ravaging of some of the most amazing habitats on earth means that by the year 2000 the destruction will be complete and the world will be without these areas.

This brief account of ecological disaster is part of a larger text—a geography report on rainforests (including several other texts of a similar size and various images). In broad outline, text 1 follows the rhetorical scaffolding rehearsed above: an account of the destruction is proposed, the account is rendered, and then it is summarized and its significance evaluated.

tell them what you're going to say-

> Man has been making animals rare and even extinct for thousands of years, and one of the main ways man has achieved this is by the destruction of their habitat. The destruction of a habitat means that the vital balance between an animal and its environment is disturbed.

say it -

> In ancient times the destruction of habitat and the extinction of animals was quite small. Since then it has rapidly increased. People began to make more use of machines and industrialisation occurred bringing with it changes which would destroy the face of the earths environment forever. As the demands grew wood and later coal, supplied the resources needed, this in turn resulted in the destruction of forests and habitats. At the same time that industrialisation was taking place humans were settling in new parts of the world.

> Whenever they settled, nests were cut down and farms established. This destroyed the habitat of many animals.

and then tell them what you've said -

> The effects of industrialisation and the need of more land due to the growth of population seriously affected wildlife and still is today already half the worlds tropical rainforests have already been destroyed or irreversibly damaged. This reckless ravaging of some of the most amazing habitats on earth means that by the year 2000 the destruction will be complete and the world will be without these areas.

So in some respects, the advice I received still looks worthwhile. But advice is often easier to give than to practice. How did the writer of text 1 achieve the organization under focus here?

ANALYSIS

Here we will explore this from the point of view of a contemporary theory of text organization, developed by systemic functional linguistics. Part of this theory is concerned with information flow—the way in which information is packaged into clauses, paragraphs and texts as a whole. Halliday (1985/1994) considers the beginning of the English clause to be especially important in this respect, since it encodes the writer's point of departure for the clause in such a way as to relate it to the rest of the text. Consider the 'say it' section of text 1 (with clause Themes underlined, following the principles proposed in Fries 1981/1983):

> In ancient times the destruction of habitat and the extinction of animals was quite small.
> Since then it has rapidly increased.
> People began to make more use of machines
> and industrialisation occurred bringing with it changes which would destroy the face of the earth's environment forever.
> As the demands grew wood and later coal, supplied the resources needed,
> this in turn[1] resulted in the destruction of forests and habitats.
> At the same time that industrialisation was taking place humans were settling in new parts of the world.
> Whenever they settled, nests were cut down and farms established.
> This destroyed the habitat of many animals.

As can be seen, the main function of the Themes (6 out of 9) in this 'say it' stage of the text is to scaffold the unfolding narrative of ecological

destruction—organizing it with respect to location in time. And this 'method of development' was predicted by the 'tell them what you're going to say' section, which announced the text's historical orientation.[2]

Man **has been making** animals rare and even extinct **for thousands of years**

[predicting]

In ancient times
Since then
As the demands grew
this in turn
At the same time that industrialisation was taking place
Whenever they settled,

Subsequently, in the 'tell them what you've said' section, the point of this history of ecological disaster is summarized (*industrialisation and the need of more land due to the growth of population...*) and evaluated (*this reckless ravaging of some of the most amazing habitats on earth...*). Clearly, the rhetorical sandwich outlined above is alive and well in the writing of the more successful of Australia's secondary school apprentice geographers.

The following takes a closer look at the way in which this sandwich was constructed, beginning with the 'say it' stage. One important feature to note is that as the history unfolds, Themes pick up the point of preceding clauses. Thus the Theme *and industrialisation* condenses 'people making more use of machines':

> People began to make more use of machines
> and **industrialisation** occurred bringing with it changes which would destroy the face of the earth's environment forever.

The Theme *as the demands grew* packages the implications of 'changes which would destroy the earth's environment forever':

> People began to make more use of machines
> and **industrialisation** occurred bringing with it changes which would destroy the face of the earth's environment forever.
> As the **demands** grew wood and later coal, supplied the resources needed, this in turn resulted in the destruction of forests and habitats.

And the Theme *at the same time that industrialisation was taking place* consolidates the point of the three preceding clauses, in order to shift the focus of the text from industrialisation to population growth and the need for more land for settlement:

People began to make more use of machines
and **industrialisation** occurred bringing with it changes which would destroy the face of the earth's environment forever.
As the **demands** grew wood and later coal, supplied the resources needed, this in turn resulted in the destruction of forests and habitats.
At the same time that **industrialisation** was taking place humans were settling in new parts of the world.

Significantly, setting up Themes which pick up the point of previous clauses as points of departure for succeeding ones depends on a packaging strategy known as nominalization. Grammatically, words like *industrialisation* and *demands* are nouns, and thus natural candidates for English Theme; semantically on the other hand, these words are processes—processes dressed up a things, but processes all the same.

In the 'tell them what you've said' section of text 1, the pressure to consolidate is even greater, since the point of several clauses has to be summarized and evaluated. The grammar responds to this pressure by drawing even more heavily on nominalization as a packaging device. Consider the Themes of the first and third clauses of the text's final stage:

The **effects** of **industrialisation** and the **need** of more land due to the **growth** of population seriously affected wildlife and still is today...

This reckless **ravaging** of some of the most amazing habitats on earth means that by the year 2000 the destruction will be complete and the world will be without these areas.

In the Theme of the first clause, 4 nominalizations (*effects, industrialization, need*, and *growth*) are strung together in a single nominal group (a super-nominalization). And beyond this, the same nominal group encodes two logical connections as well (the noun *effects,* and the preposition *due to*) —which might have been realized through conjunctions rather than nouns. These alternative connections are outlined below:

[The **effects** of **industrialization**]
people began to use more machines (i.e., to industrialize)
and so they cut down trees and dug up coal to run them,
and thus destroyed the earth's environment...

[and the **need** of more land **due to** the **growth** of population]
and population grew
and so people needed more land

Just as important as the use of nominalization to thematize a summary of the text's narrative is its use to thematize and evaluate what went on. The writer of text 1 evaluates the destruction of habitat as 'reckless ravaging'—a

negative assessment which nevertheless implies that by being more careful, we might have, or might still be able to make amends. Alternatively, the destruction might have been evaluated as arising from bad luck (*tragic*), stupidity (*senseless*), dishonesty (*deceptive*) or greed (*avaricious*)—as outlined below.

[normality] This tragic ravaging of some of the most amazing habitats on earth
[capacity] This senseless ravaging of some of the most amazing habitats on earth
[tenacity] This **reckless** ravaging of some of the most amazing habitats on earth
[veracity] This deceptive ravaging of some of the most amazing habitats on earth
[integrity] This avaricious ravaging of some of the most amazing habitats on earth

Critically, the main resources for evaluations of this kind in English are nominal ones, and so whatever is being evaluated is best nominalized to be interpreted.[3] Consider, for example, the following 'de-nominalized' version of text 1's final section and the problem of succinctly incorporating the 'reckless ravaging' evaluation in it:

> People began to work in factories and there were more people all the time, and so wild animals suffered and still are suffering today. Already half the worlds tropical rainforests have already been destroyed or irreversibly damaged. If we keep going at this rate, by the year 2000 we will have destroyed all our tropical rainforests.

GRAMMATICAL METAPHOR

Halliday (e.g. 1985/1994) offers a general theory of the phenomenon of nominalization, which he refers to as grammatical metaphor. Basically, his idea is that meanings and the ways we word them have unmarked correlations which evolved first in our culture, which we develop first as children, and which tend to unfold first in texts. Some of the most important of these unmarked correlations are as follows:

- nouns encode participants (people, places, things...)
- verbs encode processes (actions, thoughts, feelings...)
- adjectives encode qualities (size, shape, color...)
- conjunctions encode logical relations (time, cause, contrast...)

But as we have seen in text 1, meanings and their wordings do not always correlate in this way. Here's a short checklist of some of the ways in which meanings can be moved around:

a. **'quality' as noun** (instead of adjective)

'unstable' as *instability*

b. **'process' as noun** (instead of verb)

'transform' to *transformation*	[event]
'will/be going to' to *prospect*	[tense]
'try to' to *attempt*	
[phase]	
'can/could' to *possibility/potential*	[modality]

c. **'logical relation' as noun** (instead of conjunction)

'so' to *cause/proof*
'if' to *condition*

d. **'logical relation' as verb** (instead of conjunction)

'then' to *follow*
'so' to *cause*
'and' to *complement*

e. **'logical relation' as preposition** (instead of conjunction)

'so' to *because of/in light of*
'if' to *in the event of*

Halliday interprets these marked codings as metaphors because they have to be read on two levels—literally in terms of the actual grammatical class of the item under question, and figuratively in terms of the 'underlying' meaning that is being encoded. This means that in order to fully understand a nominal group like *the need for more land due to the growth of population*, we have to interpret *need* as a noun linked to the noun *growth* by the preposition *due to*, and in addition interpret *need* as a process which is causally related to the process behind *growth*. So when we unpacked *the need for more land due to the growth of population* as *population grew and so people needed more land above*, we were focussing attention on these two levels of interpretation.

Most of us find the de-nominalized version easier to understand. It is simpler in the sense that its meaning and wording match—nouns encode participants, verbs encode processes and conjunctions encode logical relations. This is the way young children talk, especially before puberty, and the way people in general chat with their friends, in casual conversation. But it is not the way educated people write exposition, where information is packaged differently. Powerful written language in our culture usually involves a great

deal of grammatical metaphor—and one reason for this is that it makes it easier to construct the rhetorical sandwiches illustrated above and to evaluate the significance of their fillings.[4]

SYNTHESIS

What can we do with this, if we want to teach writing, instead of standing back and hoping grammatical metaphor and the organization and evaluation it facilitates will just happen? We will pursue this problem with respect to another text, which does not in fact display the features we focussed on in text 1. The text was written in another Year 10 geography class in another secondary school in Sydney. The text is very typical of those composed by students from migrant backgrounds, only a minority of whom will move on from Year 10 to senior secondary school and university. The student in question is writing in response to the question "Are Governments necessary? Give reasons for your answer."

2. (Original 'spoken English' version; 'writing as you speak')

I think Governments are necessary because if there wasn't any there would be no law people would be killing themselves. They help keep our economic system in order for certain things

If there wasn't no Federal Government there wouldn't have been no one to fix up any problems that would have occurred in the community. Same with the State Government if the SG didn't exist there would have been no one to look after the school, vandalism fighting would have occurred everyday. The local Government would be important to look after the rubbish because everyone would have diseases.

Writing of this kind can be embarrassing for students, and a real worry for their teachers, who may however be hard-pressed to evaluate its shortcomings and show their students how to do better. In Australia, few teachers have been trained to do more than point to errors in what is commonly referred to as 'grammar, punctuation, and usage.' The features of the spoken language that can be identified in this way are easy to 'correct'; this has been carried out for 2' below. Editing of this kind makes the text more presentable; but it does not really improve it as a piece of humanities discourse. It changes the text's status, but not its functionality.

2'. ('WRITTEN ENGLISH' VERSION; revising 'grammar, punctuation & usage')

I think Governments are necessary because if there weren't any there wouldn't be any law: People would be killing themselves. They help keep our economic system in order for certain things.

> If there wasn't any Federal Government, there wouldn't be anyone to fix up any problems that occur in the community. It's the same with the State Government—if the State Government didn't exist there wouldn't be anyone to look after the schools; vandalism and fighting would occur everyday. The local Government is important to look after rubbish, because otherwise everyone would have diseases.

The reason that editing of this kind falls short of the mark is that it does not affect the text's organization. Effective writing is not just a question of good manners - etiquette is not enough. Consider the clause Themes in 2':

2'. ('WRITTEN ENGLISH' VERSION; with Theme analysis)

> I think Governments are necessary
> because if there weren't any there wouldn't be any law: people would be killing themselves.
> They help keep our economic system in order for certain things.
>
> If there wasn't any Federal Government, there wouldn't be anyone to fix up any problems that occur in the community.
> It's the same with the State Government —
> if the State Government didn't exist there wouldn't be anyone to look after the schools; vandalism and fighting would occur everyday.
> The local Government is important to look after rubbish,
> because otherwise everyone would have diseases.

The pattern of Themes displayed here is more like that of spoken than written language—there are 3 pronominal Themes (*I, it, they*), and 3 dependent clauses (*if there weren't any, if there wasn't any Federal Government, if the State Government didn't exist*). Out of the 8 Themes, 5 refer to government. There is no nominalization.[5]

> I
> because if there weren't any (Governments)
> They (Governments)
>
> If there wasn't any Federal Government
> It (the situation)
> if the State Government didn't exist
> The local Government
> because otherwise everyone

This kind of thematic development might have been more appropriate if the teacher had asked for a description of Government, rather than an argument about why governments are necessary. The argument really hinges on the 3 dependent clause Themes, all negative existential condi-

tional clauses which set up a 'no government' scenario with dire consequences. In 2', this rhetorical maneuver is not predicted (as it might have been had the student begun *Imagine what would happen if we had no government!*).

One way of working towards a more 'written' version of text 2 is to revise its choices for Theme, making use of different levels of government to organize the argument. Note that this kind of change can be made without affecting the text's content:

2". (RE-ORGANIZED VERSION; highlighting Theme)

Governments are necessary at different levels for a number of reasons.
They make laws, without which people would be killing themselves,
and help keep our economic system in order.

The Federal Government fixes up problems that occur in the community.

The State Government looks after schools, preventing vandalism and fighting.

The Local Government is important to look after rubbish:
otherwise everyone would have diseases.

Governments at several administrative levels are necessary.

Alongside a change of this kind, it is important to scaffold the logic of the argument. To achieve this in 2", we have made use of some grammatical metaphor to predict and sum up (*a number of reasons, as a result of these factors*).

2" (RE-ORGANIZED VERSION; highlighting conjunction)

Governments are necessary at different levels for **a number of reasons.**
They make laws, without which people would be killing themselves, and help keep our economic system in order.

To begin, the Federal Government fixes up problems that occur in the community.

Similarly, the State Government looks after schools, preventing vandalism and fighting.

Finally, the Local Government is important to look after rubbish: otherwise everyone would have diseases.

As a result of these factors, Governments at several administrative levels are necessary.

As a next step we might consider expanding the first and last sections of the argument so that they predict and sum up more effectively. This involves predicting the organization of the arguments according to levels of government in the 'tell them what you're going to say' section, and summing up the responsibilities of the different levels of government in the 'tell them what you've said' section—as in 2'" below. The nominalizations enabling the prediction and summary are in bold face.

2'". (tell them what you're going to say, say it, tell them what you've said)

I think Governments are **necessary** for a number of **reasons**. These have to do with the special **responsibilities** of Governments at different **administrative** levels—Federal, State and Local.

To begin, the Federal Government fixes up problems that occur in the community...

Similarly the State Government looks after schools; this prevents vandalism and fighting...

Finally the Local Government is important to look after rubbish: otherwise everyone would have diseases...

As a **result** of their **concern** with general **difficulties**, **schooling** and waste **disposal**, Governments at several levels of **administrative organization** are **necessary**.

Next, we might want to develop the arguments for the Federal, State and Local Governments. This would involve setting up a concern with general difficulties (Federal), schooling (State) and waste disposal (Local) as predictive of the elaborations which might follow. We will elaborate just the first argument in detail here, adding content to the text for the first time in this retexturing exercise. Note that 2'"" now has two levels of 'tell them what you're going to say'—one for the text as a whole and one for each of the three main arguments. We have not taken the step of summing up the first argument, though had it been further elaborated, its complexity might have warranted a further layer of 'tell them what you've said.'

2'"". (adding layers of prediction)

I think Governments are **necessary** for a number of **reasons**. These have to do with the special **responsibilities** of Governments at different **administrative** levels—Federal, State and Local.

To begin, the Federal Government is concerned with general **difficulties**

faced by the community. It organises armed forces to defend the country in case it is attacked and to help keep things peaceful in various parts of the world. It tries to improve the economy, helping businesses run more effectively and provide more jobs for people. And it collects taxes which it spends on Medicare, universities and airports.
Similarly the State Government is responsible for **schooling**... this prevents vandalism and fighting...[elaborated]

Finally the Local Government has to look after **waste disposal**... otherwise everyone would have diseases...[elaborated]

As a **result** of their **concern** with general **difficulties**, **schooling** and **waste disposal**, Governments at several levels of **administrative organisation** are **necessary**.

Because nominalizations facilitate prediction and summation, the 'tell them what you're going to say' and 'tell them what you've said' sections of a written expository text are usually more nominalized than are the parts of the text being predicted or summed up. Rhetorically, this has the effect of making a text more credible - since the less nominalized parts of the text sound like real evidence (the cold hard facts) backing up more abstract generalizations. To see how this works in a mature piece of history writing, consider text 3 (Buggy,1988: 224-225), from a senior secondary school history textbook which is especially concerned with teaching students how to deal with primary sources.

3. **The Breakout: 16 October to 25 November**

This most successful phase of the Long March owes a great deal to the diplomatic skills of Zhou Enlai and to the bravery of the rearguard.

Knowing that the south-west sector of the encircling army was manned by troops from Guangdong province, Zhou began negotiations with the Guangdong warlord, Chen Jitang. Chen was concerned that a Guomindang victory over the Communists would enable Chiang Kaishek to threaten his own independence. Chen agreed to help the Communists with communications equipment and medical supplies and to allow the Red Army to pass through his lines.

Between 21 October and 13 November the Long Marchers slipped quietly through the first, second and third lines of the encircling enemy. Meanwhile the effective resistance of the tiny rearguard lulled the Guomindang army into thinking that they had trapped the entire Communist army. By the time the Guomindang leaders realised what was happening, the Red Army had three weeks' start on them. The marching columns, which often stretched over 80 kilometres, were made up of young peasant boys from south-eastern China. Fifty-four per cent were under the age of 24. Zhu De had left a vivid description of these young soldiers:

They were lean and hungry men, many of them in their middle and late teens...most were illiterate. Each man wore a long sausage like a

> pouch...filled with enough rice to last two or three days. (A. Smedley, *The Great Road,* Calder, New York, 1958, pp. 311-12)
>
> By mid-November life became more difficult for the Long Marchers. One veteran recalls:
>
> When hard pressed by enemy forces we marched in the daytime and at such times the bombers pounded us. We would scatter and lie down; get up and march then scatter and lie down again, hour after hour. Our dead and wounded were many and our medical workers had a very hard time. The peasants always helped us and offered to take our sick, our wounded and exhausted. Each man left behind was given some money, ammunition and his rifle and told to organise and lead the peasants in partisan warfare when he recovered. (Han Suyin, *The Crippled Tree,* Jonathon Cape, London, 1970, pp. 311-312)
>
> When entering new areas, the Red Army established a pattern which was sustained throughout the Long March:
>
> We always confiscated the property of the landlords and militarist officials, kept enough food for ourselves and distributed the rest to poor peasants and urban poor... We also held great mass meetings. Our dramatic corps played and sang for the people and our political workers wrote slogans and distributed copies of the Soviet Constitution...If we stayed in a place for even one night we taught the peasants to write six characters: 'Destroy the Tuhao' (landlord) and 'Divide the Land'. (A. Smedley, *The Great Road,* Calder, New York, 1958, pp. 311-12)

Text 3 begins with a very abstract 'tell them what you're going to say' section, which announces that the diplomatic skills of Zhou Enlai and the bravery of the rearguard were in large part responsible for the success of the 'breakout' phase of the Long March. This announcement is built up around a number of grammatical metaphors—essentially involving three nominalizations (*this most successful phase of the Long March, the diplomatic skills of Zhou Enlai* and *the bravery of the rearguard*) connected by the metaphorical realization of cause *owes a great deal to*. Compare a spoken translation such as, *Zhou Enlai was able to negotiate skilfully with Chen Jitang and the soldiers who were left to guard the rear were very brave, so the Red Army successfully escaped.*

level of abstraction 1:

This most successful phase of the Long March owes a great deal to the diplomatic skills of Zhou Enlai and to the bravery of the rearguard.

The next part of the text documents Zhou Enlai's diplomacy and, subsequently, the bravery of the rearguard. This passage contains a number of nominalizations (underlined below), but is not as grammatically metaphorical as the introduction. The text uses this middling level of abstraction to spell out the events which form the basis for the historian's evaluation of the reasons for the success of this phase of the Long March.

level of abstraction 2:

> Knowing that the south-west sector of the *encircling* army was manned by troops from Guangdong province, Zhou began negotiations with the Guangdong warlord, Chen Jitang. Chen was concerned that a Guomindang *victory* over the Communists would enable Chiang Kaishek to threaten his own *independence*. Chen agreed to help the Communists with *communications equipment* and *medical supplies* and to allow the Red Army to pass through his lines.
>
> Between 21 October and 13 November the Long Marchers slipped quietly through the first, second and third lines of the *encircling* enemy. Meanwhile the *effective resistance* of the tiny rearguard lulled the Guomindang army into thinking that they had trapped the entire Communist army. By the time the Guomindang leaders realized what was happening, the Red Army had three weeks' *start* on them. The *marching* columns, which often stretched over 80 kilometers, were made up of young peasant boys from south-eastern China. Fifty-four percent were under the age of of 24. Zhu De had left a vivid *description* of these young soldiers:

Finally the text moves to primary source material by way of providing evidence for the preceding interpretation, drawing on diary records of those actually involved in the fighting:

level of abstraction 3 (exemplified)**:**

> When hard pressed by enemy forces we marched in the daytime and at such times the bombers pounded us. We would scatter and lie down; get up and march then scatter and lie down again, hour after hour. Our dead and wounded were many and our medical workers had a very hard time. The peasants always helped us and offered to take our sick, our wounded and exhausted. Each man left behind was given some money, ammunition and his rifle and told to organise and lead the peasants in partisan warfare when he recovered.

This material contains very little in the way of grammatical metaphor, and so has the rhetorical effect of sounding quite convincing. By and large, participants are realized as nouns, processes as verbs and logical relations as conjunctions.

PARTICIPANTS	**nouns**: enemy forces, we, bombers, us, we, medical workers, peasants, us, man, money, rifle, peasants, he
PROCESSES	**verbs**: pressed, marched, pounded, scatter, lie, get up, march, scatter, lie, helped,

	offered, take, left, given, told, organize, lead, recovered
LOGICAL RELATION	**conjunctions**: when, and, and, and, then, and, and, and, and, when

Of course, the primary source material may bear no more direct a relation to what actually went on than the historian's interpretation. But in terms of abstraction, it sounds as if it bears a more direct relation—and so grounds the argument as an effective piece of historical interpretation.

THEORY OUT OF PRACTICE

At present, we are only just beginning to appreciate the significance of grammatical metaphor for organizing writing and constructing the uncommon-sense knowledge of the institutions in which this writing plays a pivotal role.[6] In the future, I would expect that research in this area will be inspired by the needs of practicing teachers, working in contexts where abstract language has to be taught if students are to progress with their learning. These contexts may be in secondary institutions when students are introduced to specific disciplinary discourse, in tertiary institutions where they have to master English for academic purposes, in various sectors of public administration where they have to take control of English for the purpose of regulating populations, or in other workplace sites as part of their training and retraining. In the meantime, I look forward in particular to learning about teachers' experiences introducing students to grammatical metaphor and the range of function it has evolved to serve—and the development of the new grammar and rhetoric which will frame these ideas for future generations.

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Notes:

1. The conjunctive adjunct *in turn* has been included here as textual Theme, even though it follows the topical Theme *this*—since it clearly reinforces the text's method of development.
2. For more discussion of Theme and text organisation see Fries, 1994; Ghadessy, in press; Martin 1992a, b.
3. See Martin, 1995 for the evaluative framework drawn on here.

4. For further reading on nominalization and grammatical metaphor in general see Halliday and Martin 1993; Martin 1988, 1990.
5. *Government* is the name of an institution here, not a metaphorical encoding of a process.
6. For an overview of abstraction in science and technology and in humanities and bureaucracy, see Martin, 1993b.

REFERENCES

Adamczewski, H. 1982. *Grammaire linguistique de l'anglais, Paris*: Armand Colin.

Adams-Smith, D. 1984. Medical discourse: Aspects of author's comments. *English for Specific Purposes*, 3, 25-36.

Ahlers, E. A. 1991. A discourse analysis of non-referential *there* in academic writing. Unpublished M.A. thesis in teaching English as a second language, University of California, Los Angeles.

Alchain, A. and W. Allen. 1972. *University economics*. Third edition. Boston: Wadsworth.

Allen, J. P. B. and H.G. Widdowson. 1974. Teaching the communicative use of English. *International Review of Applied Linguistics,* 12, 1-20.

Alvermann, D. 1986. Graphic organizers: Cuing devices for comprehending and remembering main ideas. In J. Baumann (Ed.), *Teaching main idea comprehension.* Newark, DE: IRA, 210-238.

Armbruster, B. 1984. The problem of "inconsiderate text." In G. Duffy, L. Roehler and J. Mason (Eds.), *Comprehension instruction.* New York: Longman, 202-217.

Armbruster, B., T. Anderson and J. Meyer. 1991. Improving content area reading using instructional graphics. *Reading Research Quarterly,* 26, 393-416.

Arnaudet, M. L. and M. E. Barrett. 1984. *Approaches to academic reading and Writing.* Englewood Cliffs, NJ: Prentice-Hall.

Auster, P. 1987. *The New York trilogy.* London: Faber & Faber.

Ayckbourn, A. 1985. *Intimate exchanges.* London: Samuel French.

Ayers, G. 1993. A preliminary investigation of abstracts through a genre analysis of the short texts accompanying articles and letters in the scientific journal *Nature*. Unpublished M.A. thesis, The University of Birmingham.

Bäcklund, I. 1989. To sum up: Initial infinitives as cues to the reader. In G. Caie, *et al.* (Eds.), *Proceedings from the fourth nordic conference for English studies,* Helsingør, May 11-13, 1989. Department of English, University of Copenhagen, 289-302.

References

Baker, S. 1979. *The practical stylist* (2nd ed.). New York: Thomas Y. Crowell.

Balajthy, E. and R. Wiesberg. 1990. Transfer effects of prior knowledge and use of graphic organizers on college developmental readers' summarization and comprehension of expository text. In J. Zutell, et al. (Eds.), *Literacy theory and research: Analyses from multiple paradigms.* Rochester, NY: National Reading Conference, 339-345.

Banks, D. 1994. *Writ in waters*: *Aspects of the scientific journal article.* ERLA. Université de Bretagne Occidentale.

Bardovi-Harlig, K. 1992. The relationship of form and meaning: A cross-sectional study of tense and aspect in the interlanguage of learners of English as a second language. *Applied psycholinguistics,* 13, 253-278.

Bardovi-Harlig, K. 1995. A narrative perspective on the development of the tense/aspect system in second language acquisition. *Studies in second language acquisition,* 17(2), 263-291.

Bardovi-Harlig, K. and T. Bofman. 1989. Attainment of syntactic and morphological accuracy by advanced language learners. *Studies in second language acquisition,* 11, 17-34.

Bardovi-Harlig, K. and D.W. Reynolds. 1995. The role of lexical aspect in the acquisition of tense and aspect. *TESOL Quarterly*, 29, 107-131.

Barthes, R. 1976. The rhetoric of the image. In *image - music - text,* trans. Stephen Heath. London: Fontana; original *Communications*, 1964.

Bartolić, L. 1981. Interpretation of information transfer from a Diagram. In L. Selinker, E. Tarone, and V. Hanzeli (Eds.). *English for academic purposes: Studies in honor of Louis Trimble.* Rowley, MA: Newbury House.

Barton, B. and M. Barton. 1993. Ideology and the map: Towards a postmodern visual design practice. In N. Blyer and C. Thralls (Eds.). *Professional communication: The social perspective.* Newbury Park, CA: Sage Publications.

Bastide, F. 1990. The iconography of scientific texts: Principles of analysis. In Michael Lynch and Steve Woolgar (Eds.), *Representation in scientific practice,* (pp. 187-230).Cambridge: MIT Press; original "Iconographie des textes scientifiques." In B. Latour and J. De Noblet (Eds.), 1985. *Les "vues" de l'esprit, ed., Culture Technique,* 14, 133-151.

Bates, M. 1976. Writing *Nucleus*. In R. Mackay and A. Mountford (Eds.), *English for Specific Purposes.* London: Methuen.

Bazerman, C. 1988. *Shaping written knowledge.* Madison, WI: The University of Wisconsin Press.

Bazerman, C. and J. Paradis. 1990. *Textual dynamics of the professions.* Madison, WI: The University of Wisconsin Press.

Beck, I., *et al.* 1982. An instructional redesign of reading lessons: Effects on comprehension. *Reading Research Quarterly,* 17, 462-481.

Belcher, D. 1995. Writing critically across the curriculum. In D. Belcher and G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy.* Norwood, NJ: Ablex Publishing Corporation, 135 - 154.

Benviste, E. 1971. *Problems in general linguistics.* Coral Gables, FL: University of Miami Press.

Bereiter, C. and M. Scardamalia. 1987. *The psychology of written composition.* Hillsdale, NJ: Erlbaum.

Berger, J. 1972. *Ways of seeing.* London: BBC Books.

Berkenkotter, C., and T. Huckin. 1995. *Genre knowledge in disciplinary communication—cognition/culture/power.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Berman, R. and D. Slobin. Eds. 1994. *Relating events in narrative: A crosslinguistic developmental study.* Hillsdale, NJ: Lawrence Erlbaum.

Bhatia, V. K. 1983a. *An applied discourse analysis of English legislative writing,* A language studies unit research report. University of Aston in Birmingham, UK.

Bhatia, V. K. 1983b. Simplification v. easification: The case of legal texts. *Applied Linguistics*, 4, (1), 42-54.

Bhatia, V. K. 1992. Pragmatics of the use of nominals in academic and professional genres. In L. F. Bouton and Y. Kachru (Eds.). *Pragmatics and Language Learning.* Monograph Series Volume 3, (Eds.). University of Illinois at Urbana-Champaign, USA.

Bhatia, V.K. 1993. *Analysing genre — Language use in professional settings.* London: Longman.

Bhatia, V.K. and M. Tay, (Eds.). 1987. *The teaching of English in meeting the needs of business and technology, Volume 1 and 2.* The Report of the UNDP-

Government of Singapore Project, Department of English Language and Literature, National University of Singapore.

Biber, D. 1988. *Variation across speech and writing.* Cambridge: Cambridge University Press.

Bolinger, D. 1977. *Meaning and form.* London: Longman.

Brinton, D. 1994. *Handbook for non-native speakers to accompany Psychology in action* (3rd Ed.). New York: John Wiley & Sons.

Britton, B. and A. Pellegrini (Eds.). 1990. *Narrative thought and narrative language.* Hillsdale, NJ: L. Erlbaum.

Brookes, A. and P. Grundy. 1990. *Writing for study purposes.* Cambridge: Cambridge University Press.

Brown G. and G. Yule. 1983. *Discourse analysis.* Cambridge: Cambridge University Press.

Bruner, J. 1990. *Acts of meaning.* Cambridge, MA: Harvard University Press.

Buggy, T. 1988. *The long revolution: A history of modern China.* Sydney: Shakespeare Head Press (Modern History Series).

Butler, C.S. 1990. Qualifications in science: Modal meaning in scientific texts. In W. Nash (Ed.), *The writing scholar: Studies in academic discourse.* Newbury Park, CA: Sage.

Butler, C.S. (Ed.), 1992. *Computers and written texts.* Oxford: Blackwell.

Butler, R.O. 1992. *A good scent from a strange mountain.* New York: Penguin.

Byrd, P. and B. Benson. 1989. *Improving the grammar of written English: The handbook.* Belmont, CA: Wadsworth Publishing.

Canale, M. 1983. From communicative competence to communicative language pedagogy. In J. Richards and R. Schmidt (Eds.), *Language and communication.* London: Longman.

Cantor, S. 1994. Writer involvement in abstract writing: An analysis of theme in English and Chinese abstracts. Los Angeles: Department of Linguistics, University of Southern California. M.A. Screening paper.

Carrell, P. 1983. Some issues in studying the role of schemata, or background

knowledge. *Readings in a Foreign Language,* 1, 81- 92.

Carrell, P. 1984. The effects of rhetorical organization on ESL readers. *TESOL Quarterly,* 18, 441-469.

Carrell, P. 1985. Facilitating ESL reading by teaching text structure. *TESOL Quarterly,*19, 727-752.

Carrell, P. 1992. Awareness of text structure: Effects on recall. *Language learning,* 42, 1-20.

Carrell, P., B. Pharis and J. Liberto. 1989. Metacognitive strategy training for ESL reading. *TESOL Quarterly*, 23, 647-678.

Carter, R. and P. Simpson (Eds.), 1989. *Language, discourse and literature. An introductory reader in discourse stylistics.* London: Unwin Hyman.

Chafe, W. 1976. Givenness, contrastiveness, definiteness, subjects, topics, and point of view. In C. N. Li (Ed.), *Subject and topic.* New York: Academic Press, 25-55.

Chafe, W. 1979. The flow of thought and the flow of language. In T. Givón (Ed.), *Syntax and Semantics: Vol. 12. Discourse and Syntax.* New York: Academic Press, 159-181.

Chafe, W. L. 1980. The deployment of consciousness in the production of a narrative. In W.L. Chafe (Ed.), *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production,* Norwood, NJ: Ablex, 9-50.

Chafe, W. L. 1984. How people use adverbial clauses. *Proceedings of the tenth annual meeting of the Berkeley Linguistics Society.* Berkeley: Berkeley Linguistics Society, 437-449.

Chafe, W. 1987. Cognitive constraints on information flow. In R.S. Tomlin (Ed.), *Coherence and grounding in discourse.* Amsterdam: John Benjamins, 21-51.

Chedd, G. 1954. On the trail of the first Americans. *Science,* 80, 44-51.

Chomsky, N. 1957. *Syntactic structures.* The Hague: Mouton.

Chomsky, N. 1965. *Aspects of the theory of syntax.* Cambridge, MA: MIT Press.

Christensen, F. 1967. *Notes toward a new rhetoric.* New York: Harper and Row.

Christie, F. 1992. Literacy in Australia. In W. Grabe *et al.* (Eds.), *Annual Review of Applied Linguistics,* 12. NY: Cambridge, 142-155.

Christie, F., *et al.* 1990a. *Exploring procedures.* Sydney: Harcourt Brace Jovanovich. [Levels 1-4 and Teacher's Book.]

Christie, F., *et al.* 1990b. *Exploring reports.* Sydney: Harcourt Brace Jovanovich. [Levels 1-4 and Teacher's Book.]

Clark, H.H. and S.E. Haviland. 1977. Comprehension and the Given-New contract. In R.O. Freedle (Ed.), *Discourse production and comprehension,* Norwood, NJ: Ablex, 1-40.

Clyne, M. 1994. *Intercultural communication at work: Cultural values in discourse.* Cambridge: Cambridge University Press.

Cohen, A. and E. Tarone. 1994. Describing and teaching speech act behavior: Stating and changing an opinion. In L. Barbara and M. Scott (Eds.), *Reflections on language learning.* Clevedon, UK: Multilingual Matters.

Collerson, J. (Ed.), 1989. *Writing for life.* Rozelle, NSW: Primary English Teaching Association.

Comrie, B. 1976. *Aspect.* Cambridge: Cambridge University Press.

Comrie, B. 1985. *Tense.* Cambridge: Cambridge University Press.

Connor, U. and R. B. Kaplan (Eds.), 1987. *Writing across languages: Analysis of L2 text.* Reading, MA: Addison Wesley.

Cook, G. 1994. *Discourse and literature.* Oxford: Oxford University Press.

Cope, W. and M. Kalantzis (Eds.). 1993. *The powers of literacy: A genre approach to teaching writing.* Pittsburgh, PA: University of Pittsburgh Press.

Crismore, A. and R. Farnworth. 1990. Metadiscourse in popular and professional science discourse. In W. Nash (Ed.), *The Writing Scholar: Studies in Academic Discourse.* Newbury Park, CA: Sage.

Cumming, A. 1995. Fostering writing expertise in ESL composition instruction. In D. Belcher and G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy.* Norwood, NJ: Ablex.

Dahl, Ö. 1976. What is new information? In N.E. Enkvist and V. Kohonen (Eds.), Reports on text linguistics: *Approaches to word order.* The Hague: Mouton, 106-128.

Damasio, A. 1994. *Descartes' error.* New York: Morrow.

Davidson, F. 1993. Research issues: Some comments on the social impact of research in TESOL. *TESOL Quarterly,* 27(1), 160-162.

Davies, F.I. 1983. Towards a methodology for identifying information structures based on topic-type: A classroom-based approach to the analysis of texts in specific subject areas. In J.M. Ulijn & A.K. Pugh (Eds.), *Reading for professional purposes: Methods and materials in teaching languages.* Leuven (Belgium): ACCO.

Derewianka, B. 1990. *Exploring how texts work.* Maryborough, Victoria: Australian Primary English Teaching Association.

Dickens, C. 1962. *David Copperfield.* New York: New American Library.

Dixon, J. 1982. The question of genres. In I. Reid (Ed.), *The place of genre in learning: Current debates.* Deakin University, Australia: Typereader Publications, No. 1, 9-21.

Donnelly, C. 1994. *Linguistics for writers.* Albany: State University of New York Press.

Downing, A. 1991. An alternative approach to theme: A systemic functional perspective. *Word,* 42, 119-144.

Dry, H. 1983. The movement of narrative time. *Journal of Literary Semantics,* 12, 19-53.

Dudley-Evans, T. 1986. Genre analysis: An investigation of the introduction and discussion sections of M.Sc. dissertations. In Coulthard, M. (Ed.), *Talking about text.* Birmingham, English language Research, University of Birmingham, U.K.

Dudley-Evans, T. 1994. Genre analysis: An approach to text analysis for ESP. In M. Coulthard (Ed.), *Advances in written text analysis.* London: Routledge, 219-228.

Early, M and P. Wakefield. 1986. *English as a second language. K-12: Resource book, Vol. 1.* Victoria, BC: Ministry of Education, British Columbia.

Ellis, R. 1993. Second language acquisition research: How does it help teachers? *ELT Journal,* 47, 3-11.

Erdrich, L. 1984/1993. *Love medicine.* London: Flamingo.

Fairclough, N. 1989. *Language and power.* London: Longman.

Fairclough, N. 1992. *Discourse and social change.* Cambridge, UK: Polity.

Fand. R.J. 1989. Detecting bias in newspapers: Implications for teaching ESL. *Reading in a Foreign Language,* 6(1), 315-321.

Fathman, A. and C. Kessler. 1993. Cooperative language learning in school contexts. In W. Grabe, *et al.* (Eds), *Annual Review of Applied linguistics, 13.* NY: Cambridge University Press, 127-140.

Fish, S. E. 1980. Literature in the reader: Affective stylistics. In J. P. Tompkins (Ed.), *Reader-response criticism,* Baltimore: The John Hopkins University Press, 70-100.

Fitzgerald, J. 1989. Research on stories: Implications for teachers. In K. Muth (Ed.), *Children's comprehension of text.* Newark, DE: IRA, 2-36.

Flood, J. and D. Lapp. 1990. Reading comprehension instruction for at-risk students: Research-based practice that can make a difference. *Journal of Reading,* 33, 490-496.

Flower, L. 1990. Studying cognition in context. In L. Flower, V. Stein, J. Ackerman, M. Kantz, K. McCormick, W. Peck, *Reading to write: Exploring a cognitive & social process.* New York: Oxford University Press.

Fowler, R. 1986. *Linguistic criticism.* Oxford: Oxford University Press.

Fowler, R. 1991. *Language in the news: discourse and ideology in the press.* London: Routledge.

Fries, P. 1981. On the status of theme in English: Arguments from discourse. *Forum Linguisticum* 6(1), 1-38. [Republished in J. S. Petofi and E. Sozer (Eds.), 1983. *Micro and macro connexity of texts*. Hamburg: Helmut Buske Verlag (Papers in Textlinguistics 45), 116-152.]

Fries, P. 1993. The structuring of information in written English text. *Language Sciences*, 14, 461-488.

Fries, P. 1994. On theme, rheme and discourse goals. M. Coulthard (Ed.), *Advances in written text analysis.* London: Routledge, 229- 249.

Frodesen, J. 1991. Grammar in writing. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign Language.* Boston: Heinle & Heinle, 264-276.

Gee, J.P. 1990. *Social linguistics and literacies.* London: Falmer.

Ghadessy, M. (Ed.),(In press). *Thematic development in English texts.* London: Pinter (Open Linguistics Series).

Gilbert, N. and M. Mulkay. 1984. *Opening Pandora's box.* Cambridge: Cambridge University Press.

Givón, T. (Ed.), 1979. *Syntax and Semantics Volume 12: Discourse and syntax.* New York: Academic Press.

Givón, T. 1983. Topic continuity in discourse: An introduction. In T. Givón (Ed.), *Topic continuity in discourse: A quantitative cross-language study.* Amsterdam: John Benjamins, 1-41.

Goodwyn, W. 1995, May 1. "John Doe number two" still at large. [Radio transcript]. NPR: All things considered [on line]. Available: NEXIS Library: NEXIS File: NPR.

Gosden, H. 1990. Discourse functions of subject in scientific research articles. *Applied Linguistics,* 14(1), 56-75.

Guillaume, G. 1984. *Foundations for a science of language.* Amsterdam/ Philadelphia: John Benjamins.

Guri-Rosenblit, S. 1989. Effects of a tree-diagram on students' comprehension of main ideas in an expository text with multiple themes. *Reading Research Quarterly,* 24, 236-247.

Halliday, M.A.K. 1967. Notes on transitivity and theme in English, part 2. *Journal of Linguistics,* 3. 199-244.

Halliday, M.A.K. 1974. The place of "functional sentence perspective" in the system of linguistic description. In F. Danes (Ed.), *Papers on functional sentence perspective.* The Hague: Mouton, 43-53.

Halliday, M.A.K. 1985. *An introduction to functional grammar.* London: Edward Arnold. [2nd Edition 1994]

Halliday, M.A.K. and R. Hasan. 1976. *Cohesion in English.* London: Longman.

Halliday, M.A.K. and R. Hasan 1985. *Language, context and text: Aspects of language in a social-semiotic perspective.* Oxford: Oxford University Press.

Halliday, M.A.K. and R. Hasan. 1989. *Language, context, and text: A social semiotic perspective.* Oxford: Oxford University Press.

Halliday, M.A.K. and J. Martin. 1993. *Writing science: Literacy and discursive power*. Pittsburgh: The University of Pittsburgh Press.

Halliday, D. and R. Resnick. 1988. *Fundamentals of physics* (3rd Edition). New York: John Wiley & Sons.

Heath handbook. 1986. Boston: Heath Publishing.

Hanania, E. and K. Akhtar. 1984. Verb form and rhetorical function in science writing: A study of MS theses in biology, chemistry and physics. *ESP Journal,* 4, 49-58.

Harvey, A. 1992. Science reports and indexicality. *English for Specific Purposes,* 11 (2), 115-128.

Hasan, R. and J. Martin (Eds.), 1989. *Language development: Learning language, learning culture. Meaning and choice in language: Studies for Michael Halliday.* Norwood, NJ: Ablex.

Hatch, E. 1992. *Discourse and language education.* Cambridge: Cambridge University Press.

Heimlich, J. and S. Pittelman. 1986. *Semantic mapping: Classroom applications.* Newark, DE: IRA.

Herbert, A. 1965. *The structure of technical English.* London: Longman.

Hinds, J. 1987. Reader versus writer responsibility: A new typology. In U. Connor and R. Kaplan (Eds.), *Writing across languages: Analysis of L2 text.* Reading, MA: Addison-Wesley, 141-152.

Hodge, R. and G. Kress. 1988. *Social semiotics*. Blackwell: Polity.

Hoey, M. 1981. *On the surface of discourse.* Discourse Monographs No. 6: Birmingham, England: University of Birmingham.

Hoey, M. 1986. Overlapping patterns of discourse organization and their implications for clause relational analysis of problem-solution texts. In C.R. Cooper (Ed.), *Studying writing: Linguistic approaches.* (Written Communication Annual, 1, 187- 214.)

Hopkins, A. and T. Dudley-Evans. 1988. A genre-based investigation of discussion sections in articles and dissertations. *English for Specific Purposes,* 7, 113 - 122.

Hopper, P. 1979. Aspect and foregrounding in discourse. In T. Givón, (Ed.),

Syntax and Semantics, vol. 12: Discourse and syntax, New York: Academic Press, 213-41.

Hozayen, G. 1994. A study of the discussion section of the medical research article: A genre based approach to text analysis. Unpublished Ph.D thesis, The University of Birmingham.

Huckin, T. and L. Pesante. 1988. Existential *there. Written Communication,* 5 (3), 368-391.

Huddleston, R. 1988. *English grammar.* Cambridge: Cambridge University Press.

Huffman, K., M. Vernoy, M. and J. Vernoy. 1994. *Psychology in action.* 3rd Edition. New York: John Wiley & Sons.

Hughes, R. 1986. *The fatal shore.* New York: Vintage Books.

Hyland, K. 1994. Hedging in academic writing and EAP textbooks. *English for Specific Purposes,* 13(3), 239-257.

Iser, W. 1978. *The act of reading.* Baltimore: The Johns Hopkins University Press.

Jacobi, S., D. Leech, and C. Holten. 1995. A genre-based developmental writing course for undergraduate ESL science majors. In D. Belcher and G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy.* Norwood, NJ: Ablex Publishing Corporation, 351-374.

Jacoby, S. and E. Ochs. (Forthcoming). Co-construction: An introduction. In S. Jacoby and E. Ochs (Eds.), Special Issue, *Research on Language and Social Interaction,* 28(3).

Jakobson, R. 1987. *Language in literature.* Cambridge, MA: The Belknap Press of Harvard University Press.

James, P. D. 1962. *Cover her face.* New York: Warner Books.

Jantzen, P. and J. Michel. 1986. *Life science.* New York: MacMillan Publishing Co.

Johns, A.M. 1985. Summary protocols of underprepared and adept university students: Replications and distortions of the original. *Language Learning,* 35, 495-517.

Johns. A.M. 1986. The ESL student and the revision process: Some insights

from schema theory. *The Journal of Basic Writing*, 5, 70- 80.

Johns, A.M. 1988. Reading for summarising: An approach to text orientation and processing. *Reading in a Foreign Language,* 4, 79- 90.

Johns, A. M. 1995. Teaching classroom and authentic genres: Initiating students into academic cultures and discourses. In D. Belcher and G. Braine (Eds.), *Academic writing in a second language: Essays on research and pedagogy.* Norwood, NJ: Ablex Publishing Corporation, 277-292.

Johns, A. M. and T. Dudley-Evans. 1991. English for specific purposes: International in scope, specific in purpose. *TESOL Quaterly,* 25, 297-314.

Johns, A.M. and P. Mayes. 1990. An analysis of summary protocols of university ESL students. *Applied Linguistics*, 11, 253-271.

Johns, T. and F. Davies. 1983. Text as a vehicle for information: The classroom use of written texts in teaching reading in a foreign language. *Reading in a Foreign Language,* 1(1), 1-20.

Johnson, M. 1987. *Body in the mind: The bodily basis of meaning, imagination, and reason.* Chicago: The University of Chicago Press.

Jolliffe, D.A. and E. M. Brier. 1988. Studying writers' knowledge in academic disciplines. In D.A. Joliffe (Ed.), *Advances in Writing Research, Vol II: Writing in Academic Disciplines.* Norwood, NJ: Ablex Publishing Corporation, 35- 87.

Jones, B.F., J. Pierce and B. Hunter. 1988/1989. Teaching students to conduct graphic representations. *Educational Leadership,* 46, 20-25

Kaplan, R. B. 1966. Cultural thought patterns in intercultural education. *Language Learning,* 16, 1-20.

Kaplan, R. B. 1987. Cultural thought patterns revisited. In U. Connor and R. B. Kaplan (Eds.), *Writing across languages: Analysis of L2 text.* Reading, MA: Addison-Wesley, 9-22.

Kaplan, R. B. 1988. Contrastive rhetoric and second language learning: Notes toward a theory of contrastive rhetoric. In A. C. Purves (Ed.), *Writing across languages and cultures: Issues in contrastive rhetoric.* Beverly Hills, CA: Sage, 275-304. [Written communication annual, 2.]

Kaplan, R. B. 1991. Concluding essay: Applied linguistics and discourse analysis. In W. Grabe, et al. (Eds.), *Annual Review of Applied Linguistics 11,* New York: Cambridge University Press, 199-204. .

Kaplan, R. B., *et al.* (Eds.), 1983. *Annual Review of Applied Linguistics, 3.* Rowley, MA: Newbury House.

Kaplan, R. B., S. Cantor, C. Hagstrom, L. Kamhi-Stein, Y. Shiotani, and C. Zimmerman. 1994. On abstract writing. *Text,* 14(3), 401-426.

Kellerman, E. 1995. Crosslinguistic influence: Transfer to nowhere. In W. Grabe, *et al.,* (Eds.), *Annual Review of Applied Linguistics, 15.* New York: Cambridge University Press, 125-150.

Kim, K-H. 1988. A discourse analysis of cleft and pseudo-cleft constructions in American English. Unpublished M.A. thesis in teaching English as a second language, University of California, Los Angeles.

Kintsch, W. and T.A. van Dijk. 1975. Towards a model of text comprehension and processing. *Psychological Review,* 85, 363-394.

Kramsch, C. 1993. *Context and culture in language teaching.* Oxford: Oxford University Press.

Kramsch, C. (Forthcoming) Stylistic choice and cultural awareness. In L. Bredella and W. Delanoy (Eds.), *The challenges of literary texts in the foreign language classroom.* Tübingen: Gunter Narr.

Kress, G. 1982. Genre in a social theory of language. In I. Reid (Ed.), *The place of genre in learning: Current debates.* Deakin University, Australia: *Typereader Publications,* No. 1, 35-45.

Kress, G. 1988. Language as social practice. In Kress, G. (Ed.) *Communication and culture. An introduction.* Kensington, Australia: New South Wales University Press, 82-129.

Kress, G. 1990. *Linguistic processes in sociocultural practice.* Oxford: Oxford University Press.

Kress, G. and T. van Leeuwen. 1988. *Reading images.* Victoria: Deakin University Press.

Kroll, B. 1977. Combining ideas in written and spoken English: A look at subordination and coordination. In E. O. Keenan and T. L. Bennett [Eds.], *Discourse across time and space.* Los Angeles, University of Southern California. [*S.C.O.P.L.L.*, #5]

Kubui, A. 1988. Aspects of hedging in the discussion of medical research discourse. LSU/ESP Collection. MSc. in TESP Dissertation. University of Aston in Birmingham.

Kuno, S. 1980. Functional syntax. In E.A. Moravcsik and J.R. Wirth (Eds.), *Syntax and Semantics: Vol. 13. Current approaches to syntax.* New York: Academic Press, 117-135.

Lakoff, R. 1987. *Women, fire and dangerous things.* Chicago: The University of Chicago Press.

Lakoff, G. 1972. Hedges: A study in meaning criteria and the logic of fuzzy concepts. *Journal of Philosophical Logic*, 2, 458-508.

Lakoff, G. and M. Johnson. 1980. *Metaphors we live by.* Chicago: The University of Chicago Press.

Lapaire, J.R. and W. Rotgé. 1991. *Linguistique et grammaire de l'Anglais.* Toulouse, France: Presses Universitaires du Mirail.

Lapaire, J.R. and W. Rotgé. 1992. *Réussir le commentaire grammatical des Textes Anglais.* Paris: Ellipses.

Lapaire, J.R. and W. Rotgé. 1993. The rhetorics of 'this' and 'that' in fiction. In *Caliban XXX.* Toulouse, France: Presses Universitaires du Mirail.

Larsen-Freeman, D. 1991. Teaching Grammar. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language.* Boston: Heinle and Heinle, 279-294.

Latour, B. and S. Woolgar. 1979. *Laboratory life: The social construction of scientific facts.* Beverly Hills, CA: Sage.

Latour, B. and S. Woolgar. 1986. *Laboratory life: The construction of scientific facts.* Princeton: Princeton University Press.

Le Carre, J. 1983. *The little drummer girl.* New York: Knopf.

Leech, G. and J. Svartvik. 1994. *A communicative grammar of English.* Second Edition. London: Longman.

Leech, G. 1989. *An A-Z of English grammar and usage.* London: Edward Arnold.

Leki, I. 1991. Twenty-five years of contrastive rhetoric: The state of the art. *TESOL Quarterly,* 25 (1), 123-143.

Lemke, J. 1995. *Textual politics.* London: Taylor & Francis.

Levinson, S. 1983. *Pragmatics.* Cambridge: Cambridge University Press.
Lewin, B. 1993. *Genes V.* Oxford: Oxford University Press.

Lloyd-Jones, M. 1987. A contextual analysis of non-referential *there* in American English usage. Unpublished M.A. thesis in teaching English as a second language, University of California, Los Angeles.

Lux, P. 1991. Discourse styles of Anglo and Latin American college student writers. Ph.D. dissertation. Tempe, AZ: Arizona State University.

Lynch, M. 1985. Discipline and the material form of images: An analysis of scientific visibility. *Social Studies of Science, 15*, 37-66.

Lyons, J. 1981. *Language and linguistics: An introduction.* Cambridge: Cambridge University Press.

Mann, W.C. and S.A. Thompson. 1988. Rhetorical structure theory: A theory of text organization. In L. Polanyi (Ed.), *The structure of discourse.* Norwood, NJ: Ablex.

Mann, W.C., C. Matthiessen, and S. Thompson. 1992. Rhetorical Structure Theory and text analysis. In W.C. Mann and S.A. Thompson (Eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text.* Amsterdam: John Benjamins, 39- 78.

Marshall, S. 1991. A genre-based approach to the teaching of report writing. *English for Specific Purposes,* 10 (1), 3-14.

Martin, J. R. 1988. Secret English: Discourse technology in a junior secondary school. (With P. Wignell, S. Eggins and J. Rothery) L. Gerot, J. Oldenberg and T. Van Leeuven [Eds.], *Language and Socialisation: Home and school.* Sydney: School of English and Linguistics, Macquarie University (Report of the 1986 Working Conference on Language in Education), 143-173. [republished in B. Cope and M. Kalantzis (Eds.) *Genre approaches to literacy: Theories and practices* (Papers from the 1991 LERN Conference, University of Technology, Sydney, 23-24 November 1991). Sydney: Common Ground. 1993. 43-76.]

Martin, J. R. 1989. *Factual writing: Exploring and challenging social reality.* Oxford: Oxford University Press.

Martin, J. R. 1990. Language and control: Fighting with words. In C. Walton and W. Eggington (Eds.), *Language: Maintenance, power and education in Australian Aboriginal contexts.* Darwin, N.T.: Northern Territory University Press, 12-43.

Martin, J. R. 1992a. *English text: System and structure.* Amsterdam: Benjamins.

Martin, J. R. 1992b. Theme, method of development and existentiality – the price of reply. *Occasional Papers in Systemic Linguistics*, 6 (1), 147-184.

Martin, J. R. 1993a. Genre and literacy—modeling context in educational linguistics. In W. Grabe, *et al.* (Eds.), *Annual Review of Applied Linguistics, 13.* Issues in teaching and learning. New York: Cambridge University Press, 141-172.

Martin, J. R. 1993b. Technology, bureaucracy and schooling: Discursive resources and control. *Cultural Dynamics* 6(1), 84-130.

Martin, J. R. 1995. Reading positions/positioning readers: Judgement in English. *Prospect: a journal of Australian TESOL* 10(2).

Mathesius, V. 1929. Zur satzperspektive im modernen Englisch. *Archiv für das Studium der neueren Sprachen und Literaturen,* 155, 202-210.

Mauranen. A. 1993. *Cultural differences in academic rhetoric.* Frankfurt am Main: Peter Lang.

McGroarty, M. 1989. The benefits of cooperative learning arrangements in second language instruction. *NABE Journal, 13,* 127-143.

McKinlay, J. 1982. An analysis of discussion sections in medical journal articles. Unpublished M.A. dissertation, The University of Birmingham.

Meyer, B. 1985. Prose analysis: Purposes, procedures, and problems. In B. Britton and J. Black (Eds.), *Understanding expository text.* Hillsdale, NJ: L. Erlbaum, 269-304.

Meyer, B. 1987. Following the author's top-level organization: An important skill for reading comprehension. In R. Tierney, P. Anders and J. Mitchell (Eds.), *Understanding readers' understanding: Theory and practice.* Hillsdale, NJ: L. Erlbaum, 59-76.

Meyer, B. 1992. An analysis of a plea for money. In W. Mann and S. Thompson (Eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text.* Philadelphia: J. Benjamin, 79-108.

Miller, A. 1949, 1961. *Death of a salesman.* London: Penguin Books.

Miller, K. and J. George. 1992. Expository prose organizers: Models for reading and writing. *Journal of Reading,* 35, 372-377.

Mohan, B. 1986. *Language and content.* Reading, MA: Addison- Wesley.

Mohan, B. 1990. LEP students and the integration of language and content: Knowledge structures and tasks. In C. Simich-Dudgeon (Ed.), *Proceedings of the First Research Symposium on Limited English Proficient Students' Issues.* Washington, DC: OBEMLA, 113-160.

Morgan, J. and P. Whelton. 1986. *See what I mean: An introduction to visual communication.* London: Edward Arnold.

Myers, G. A. 1989. The pragmatics of politeness in scientific articles. *Applied Linguistics,*10, 1-35.

Myers, G. A. 1990a. *Writing biology: Texts in the social construction of social knowledge.* Madison, WI: University of Wisconsin Press.

Myers, G.A. 1990b. Making a discovery: Narrative of split genes. In Christopher Nash (Ed.), *Narrative in culture.* London: Routledge, 102-129.

Myers, G.A. 1990c. Every picture tells a story: Illustrations in E.O. Wilson's *Sociobiology.* In Michael Lynch and Steve Woolgar (Eds.), *Representation in scientific practice.* Cambridge: MIT Press.

Myers, G. A. 1992. Textbooks and the sociology of scientific knowledge. *English for Specific Purposes*, 11, 3-18.

Myers, G. A. 1994a. The narrative of science and nature in popularizing molecular genetics. In Malcom Coulthard (Ed.), *Advances in written discourse analysis.* London: Routledge, 179-190.

Myers, G. A. 1994b. *Words in ads.* London: Edward Arnold.

Nelson, J. R., D. J. Smith and J. M. Dodd. 1992. The effects of teaching summary skills strategies to students identified as learning disabled on their comprehension of science text. *Education and the Treatment of Children,* 15, 228-243.

Nishimura, C. 1995. Demonstratives in academic written discourse. Unpublished M.A. thesis in Teaching English as a Second Language. University of California, Los Angeles.

Noguchi, R. R. 1991. *Grammar and the teaching of writing.* Urbana, IL: NCTE.

Norman, D. 1993. *Things that make us smart.* Reading, MA: Addison-Wesley.

O'Malley, M. and A. Chamot. 1990. *Learning strategies in second language acquisition.* New York: Cambridge University Press.

Oakhill, J. and A. Garnham. 1988. *Becoming a skilled reader.* New York: Basil Blackwell.

Omanson, R., *et al.* 1984. The effects of reading lessons on comprehension: A processing description. *Cognition and Instruction,* 1, 45-67.

Paivio, A. 1986. *Mental representations: A dual coding approach.* New York: Oxford University Press.

Parenti, M. 1993. *Inventing reality,* 2nd ed. New York: St. Martins.

Paris, G. S., B. Wasik and J. Turner. 1991. The development of strategic readers. In R. Barr, *et al.* (Eds.), *Handbook of reading research.* Volume II. New York: Longman, 609-640.

Paz, D. M. 1995a. Summarization strategies of eighth grade science students: An investigation of the effects of English proficiency and topic type. Unpublished M.A. Thesis, San Diego State University, CA.

Paz, D. M. 1995b. Summarization strategies of eighth grade science students: An investigation of formal schemata. Unpublished paper, San Diego State University, CA.

Pearson, P. D. and L. Fielding. 1991. Comprehension instruction. In R. Barr, *et al.* (Eds.), *Handbook of reading research.* Volume II. New York: Longman, 815-860.

Pearson, P. D. and K. Camperell. 1981. Comprehension of text structures. In J. Guthrie (Ed.), *Comprehension and teaching: Research reviews.* Newark, DE: International Reading Association, 27-55.

Pearson, P. D., L. Roehler, J. Dole and G. Duffy. 1992. Developing expertise in reading comprehension. In S. Samuels and A. Farstrup (Eds.), *What research has to say about reading instruction.* Newark, DE: IRA, 145-199.

Peng, J. F. 1987. Organizational features in chemical engineering research. In A. Dudley-Evans (Ed.), *Genre analysis and ESP.* The University of Birmingham: ELR Journal 1, 79-116.

Percy, W. 1975. Symbol, consciousness, and intersubjectivity. The message in the bottle. New York: Farrar, Straus and Giroux, 265-276.

Perez, C. M. 1990. How the knowledge of rhetorical structure helps improve reading and writing skills. Paper presented at the Ninth World Congress of Applied Linguistics, Thessaloniki, Greece.

Pinkwater, D. 1994, October 24. Commentary on the pleasures of cigar smoking. [Radio transcript]. NPR: All things considered [on line]. Avaliable: NEXIS Library: NEXIS File: NPR.

Polanyi, L. 1989. *Telling the American story: A structural and cultural analysis of conversational storytelling.* Cambridge: MIT Press.

Pressley, M., *et al.* 1989. Strategies that improve children's memory and comprehension of text. *Elementary School Journal,* 90, 3-32.

Pressley, M. *et al.* 1992. A researcher-educator collaborative interview study of transactional comprehension strategies instruction. *Journal of Educational Psychology*, 84, 231-246.

Prince, E.F. 1978. A comparison of *wh*-clefts and *it*-clefts in discourse. *Language,* 54, 883-906.

Prince, E.F. 1981. Toward a taxonomy of given-new information. In P. Cole (Ed.), *Radical Pragmatics.* New York: Academic Press, 223-255.

Prince, E.F. 1992. The ZPG letter: Subjects, definiteness, and information-status. In W.C. Mann and S.A. Thompson (Eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text.* Amsterdam: John Benjamins, 295-325.

Prior, P. 1995. Redefining the task: An ethnographic examination of writing and response in graduate seminars. In D. Belcher and G. Braine (Eds.), *Academic writing in a second language: Essays in research and pedagogy.* Norwood, NJ: Ablex Publishing Corporation, 47-82.

Purves, A. C. (Ed.), 1988. *Writing across languages and cultures.* Beverly Hills, CA: Sage.

Quirk, R., S. Greenbaum, G. Leech, and J. Svartvik. 1972. *A grammar of contemporary English.* New York: Seminar Press.

Quirk, R., S. Greenbaum, G. Leech, and J. Svartvik. 1985. *A comprehensive grammar of the English language.* New York: Longman.

Readance, J., T. Bean and R.S. Baldwin. 1992. *Content area reading: An integrated approach,* 4th ed. Dubuque, IA: Kendall Hunt.

Reid, W. 1991. *Verb and noun number in English: A functional explanation.* London: Longman.

Richardson, P.W. 1994. Language as personal resource and a social construct: Competing views of literacy in pedagogy in Australia. In V. Freedman and P. Medway (Eds.), *Learning and teaching genre.* Portsmouth, NH: Heinemann: Boynton/Cook, 117-142.

Richgels, D., L. McGee, R. Lomax and C. Sheard. 1987. Awareness of four text structures: Effects on recall of expository text. *Reading Research Quarterly,* 22, 177-196.

Ricoeur, P. 1981. *Hermeneutics and the human sciences.* Cambridge: Cambridge University Press.

Rudwick, M. 1976. The emergence of a visual language for geological science, 1760-1840. *History of Science,* 14, 149-195.

Rudwick, M. 1992. *Scenes from deep time: Early pictorial representations of the Prehistoric World.* Chicago: University of Chicago Press.

Rumelhart, D.E. 1977. Understanding and summarizing brief stories. In D. LaBerge and S.J. Samuels (Eds.), *Basic processes in reading: Perception and comprehension.* Hillsdale, NJ: Erlbaum, 265-303.

Rumelhart, D.E. 1980. Schemata: The building blocks of cognition. In S. Spiro, B. Bruce, and W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, NJ: Lawrence Erlbaum Associates, 33-58.

Rumelhart, D.E. 1984. Understanding understanding. In J. Flood (Ed.), *Understanding reading comprehension.* Newark, DE: International Reading Association, 1-20.

Sadoski, M., A. Paivio and E. Goetz. 1991. Commentary: A critique of schema theory in reading and a dual coding alternative. *Reading Research Quarterly,* 26, 463-484.

Salager-Meyer, F. 1990. Discoursal flaws in medical English abstracts: A genre analysis per research and text-type. *Text,* 10, 365-384.

Salager-Meyer, F. 1993. Imprecision and vagueness (hedging) in today's medical discourse: Courtesy, coyness or necessity? *The ESPecialist, 14(1),* 1-15.

Salager-Meyer, F. 1994. Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes,* 13(2), 149-170.

Saussure (de), F. 1911, 1966. *Course in general linguistics.* New York: McGraw-Hill Paperbacks.

Scollon, R. 1991. Eight legs and one elbow: Stance and structure in Chinese English compositions. Paper presented at the International Reading Association Second North American Conference on Adult and Adolescent Literacy. Banff. March.

Sharwood Smith, M. 1991. Speaking to many minds: On the relevance of different types of language information for the L2 learner. *Second Language Research,* 7, 118-132.

Shih, M. 1992. Beyond comprehension exercises in the ESL academic reading class. *TESOL Quarterly,* 26, 289-318.

Short, Michael. 1994. Understanding texts: Point of view. In G. Brown, K. Malmkjaer, A. Pollit, and J. Williams (Eds.), *Language and understanding.* Oxford: Oxford University Press, 170-190.

Simpson, P. 1993. *Language, ideology and point of view.* London: Routledge.

Sinclair, J.M. 1987. Collins COBUILD English Language Dictionary: London: Longman.

Singer, M. 1991. *Psychology of language: An introduction to sentence and discourse processes.* Hillsdale, NJ: L. Erlbaum.

Skelton, J. 1988. Comments in academic articles. *Applied linguistics in society.* London: CILT. BAAL.

Skelton, J. (Forthcoming). How to tell the truth in the British Medical Journal: patterns of judgment in the 19th/20th centuries. In H. Schroder *et al.,* (Eds.), *Hedging and vagueness in academic discourse in research.* New York: Mouton De Gruyter.

Slater, W. and M. Graves. 1989. Research on expository text: Implications for teachers. In K.D. Muth (Ed.), *Children's comprehension of text.* Newark, DE: IRA, 140-166.

Smedley, A. 1958. *The great road.* New York: Calder, 311-312.

Spack, R. 1988. Initiating ESL students into the academic discourse community: How far should we go? *TESOL Quarterly,* 22, 29-52.

Steffensen, M. 1986. Register, cohesion, and cross-cultural reading comprehension. *Applied Linguistics* 7(1), 71-85.

Steiner, G. 1978. On difficulty. *On difficulty and other essays.* New York: Oxford University Press, 18-47.

Stubbs, M. 1986. A matter of prolonged field work: Notes toward a modal grammar of English. *Applied Linguistics,* 7(1), 1-25.

Sutton, Clive. 1992. *Words, science, and learning.* Milton Keynes: Open University Press.

Swales, J. M. 1971. *Writing scientific English.* London: Thomas Nelson and Sons Ltd.

Swales, J. M. 1981a. Aspects of article introductions. *Aston ESP Research Report* No.1, Language Studies Unit, University of Aston in Birmingham, Birmingham, U.K.

Swales, J. M., 1981b: Definitions in science and law: A case of subject-specific ESP materials. In *Fachsprache,* 81(3), 106-112.

Swales, J. 1990a. *Genre analysis: English in academic and research settings.* Cambridge: Cambridge University Press.

Swales, J. 1990b. Nonnative speaker graduate engineering students and their introductions: Global coherence and local management. In U. Connor and A. Johns (Eds.) *Coherence in writing: Research and pedagogical perspectives.* Washington, DC: TESOL Publications, 187-208.

Swales, J. M. 1995. The role of the textbook in EAP writing research. *English for Specific Purposes,* 14, 3-18.

Swales, J. M. and C. B. Feak. 1994. *Academic writing for graduate students.* Ann Arbor, MI: The University of Michigan Press.

Sweetser, E. 1990. From etymology to pragmatics: *Metaphorical and semantic aspects of semantic structure.* Cambridge: Cambridge University Press.

Tang, G. 1992. The effect of graphic representation of knowledge structures on ESL reading comprehension. *Studies in Second Language Acquisition,* 14, 177-195.

Tang, G. 1993. Teaching content knowledge and ESOL in multicultural classrooms. *TESOL Journal,* 2 (2), 8-12.

Tannen, D. 1990. *You just don't understand.* New York: William Morrow.

Taylor, B. 1992. Text structure, comprehension, and recall. In S. Samuels and A. Farstrup (Eds.), *What research has to say about reading instruction,* 2nd ed. Newark, DE: IRA, 220-235.

Thomas, L. 1974. *Thoughts for a countdown. The lives of a cell.* New York: Bantam Books, 5-10.

Thompson, D. K. 1993. Arguing for experimental 'facts' in science. *Written communication,* 8, 106-128. *Time* magazine. 1995. May 22 issue, U.S. edition.

Torrance, M. Forthcoming. Is writing expertise like other kinds of expertise? In G. Rijlaarsdam, M. Couzin, and H. van den Bergh (Eds.), *Current trends in writing research: Effective teaching and learning of written composition.* Amsterdam: Amsterdam University Press.

Torrance, M., G. V. Thomas and E. J. Robinson. 1993. Training in thesis writing: An evaluation of three conceptual orientations. *British Journal of Educational Psychology,* 63, 170-184.

Touchstone, E. E. 1995. Language services planning in the banking industry: An example of unplanned language policy. Ph. D. dissertation. Los Angeles: University of Southern California.

Touchstone, E. E., R. B. Kaplan and C. Hagstrom. 1995. Image and reality: Banking in Los Angeles. In J. Ulijn and D. Murray (Eds.), Intercultural discourse in business and technology. [Special issue of *Text* 15 (4)], 427-456.

Van Dijk, T.A. 1977. *Text and context.* London: Longman.

Van Dijk, T.A. 1986. News Schemata. In C.R. Cooper and S. Greenbaum (Eds.), *Studying writing: Linguistic approaches,* vol.1. Beverly Hills, CA: Sage Publications, 155-185.

Van Dijk, T. 1988. *News as discourse.* Hillsdale, NJ: Erlbaum.

Van Dijk, T. 1993. Principles of critical discourse analysis. *Discourse and Society,* 4 (2), 249-283.

Vande Kopple, W. J. 1986. Given and new information and some aspects of the structures, semantics, and pragmatics of written texts. In C.R. Cooper and S. Greenbaum (Eds.), *Studying writing: Linguistic approaches.* Beverly Hills: Sage, 72-111.

Vande Kopple, W. J. 1989. *Clear and coherent prose, a functional approach.* Glenview, IL: Scott, Foresman and Company.

Volle, M. 1974. Une méthode pour lire et commenter automatiquement des grands tableaux statistiques. *Economie et Statistique,* 52, (1), 46-50.

Weaver, C. and W. Kintsch. 1991. Expository text. In R. Barr, *et al.* (Eds.), *Handbook of Reading Research.* Volume II. NY: Longman, 230-245.

Weinrich, H. 1973. *Le Temps.* Paris: Seuil.

Weissberg, R. and S. Buker. 1990. *Writing up research.* Englewoods Cliffs, NJ: Prentice Hall International.

Whitaker, M. 1995 (October 16). *Decision...and division.* Newseek: 10-18.

Widdowson, H. G. 1979. *Explorations in applied linguistics.* Oxford: Oxford University Press.

Widdowson, H. G. 1983. *Learning purpose and language use.* Oxford: Oxford University Press.

Widdowson, H. G. 1984. *Explorations in applied linguistics.* New York: Oxford University Press.

Wilson, K. M. 1989. Book notice on *Focus*: An ESL Grammar. In *TESOL Quarterly,* 23(4), 690-691.

Winter, E. 1977. Replacement as a function of repetition: A study of some of its principal features in the clause relations of contemporary English. Ann Arbor, MI: University Microfilms, nos. 77-70,036.

Yoshikawa, M. 1978. Some Japanese and American cultural characteristics. In M. H. Prosser (Ed.), *The cultural dialogue: An Introduction to inter-cultural communication.* Boston: Houghton Mifflin, 220-230.

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