

LEXICAL SIGNALLING FROM A SCHEMATIC PERSPECTIVE

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ABSTRACT. *Any discourse contains signals that indicate the relation between its different parts and help the reader interpret the text. This paper discusses various taxonomies of lexical signals and presents a schematic framework for the description of lexical signalling. Drawing on schema theory we propose to analyze lexical signals in terms of the rhetorical structure of the discourse where they occur. A distinction between two types of lexical signals has been established: items that indicate semantic rhetorical organization (e.g. signals of the pattern Problem-Solution) and items that reveal the pragmatic rhetorical development of the discourse (e.g. signals of genre structure).*

KEYWORDS. *discourse analysis, lexical signalling, schemata, rhetorical structure.*

RESUMEN. *Todo discurso contiene señales que indican las relación entre sus partes y ayudan al lector a interpretar el texto. En este artículo se discuten varias taxonomías de señales léxicas y se presenta un modelo para la descripción de estas señales. Me baso en la teoría de los esquemas para analizar las señales léxicas en relación a la estructura retórica del discurso donde aparecen. Se pueden distinguir dos tipos de señales léxicas: las que indican la organización retórico-semántica del discurso (ej. señales de la estructura Problema-Solución) y las que revelan su desarrollo retórico-pragmático (ej. señales de la estructura del género).*

PALABRAS CLAVE. *análisis del discurso, señales léxicas, esquemas, estructura retórica.*

1. INTRODUCTION

The signals that indicate how the different parts of a text contribute to developing a topic facilitate the interpretation of the text by the reader. These signals are used by the writer for several purposes, such as labelling parts of the text, fragmenting a text into segments or evaluating information (Francis 1986). The study of signalling in discourse has been devoted a great deal of attention, specially in connection with the concept of clause relation. The pioneering work in lexical

signalling made by Winter (1974, 1977) was followed by Crombie (1985) and Hoey (1979, 1983, 1991). Hoey (1983, 1993) states the assumptions from which these authors start. First, a coherent text is a network of structured relations of two different types: relations between adjacent sentences and clauses, and relations between the different parts of the text, which create a global structure. Second, any discourse contains linguistic clues that help the reader/listener to perceive the relation between sentences and the structure of discourse. There are lexical items which signal the relation between clauses, sentences, or large fragments of text.

Although the notion of signalling has been studied from different perspectives (e.g. rhetoric, written communication), a systematic analysis of what lexical signalling is remains to be done. The different taxonomies of lexical signals (e.g. Evensen 1990; Kurzon 1985) reveal that there is a large number of aspects that can be signalled, which makes it necessary to establish the criteria according to which a particular group of signals has been chosen for examination. The difficulty in stating clearly what can be considered as a lexical signal derives from the fact that most studies fail to establish those criteria. The underlying idea of most studies is that lexical signals point to some type of formal schema (or superstructure). In this paper we propose to analyze lexical signals from a schematic perspective, focusing on the type of structure they reveal. Before presenting our proposal for the description of lexical signalling we will review briefly the most relevant studies on this linguistic phenomenon.

2. LEXICAL SIGNALLING

The concept of signalling is related both to the question of how the reader interprets the message (i.e. the interaction between the reader and the text) and to the writer's devices to encode this message in the best way (i.e. the interaction between the writer and the reader). As Hoey (1983: 178) suggests, signalling involves a talk between writer and reader: "When a relation is signalled a message is being communicated about the way in which the discourse should be interpreted. The writer/speaker is telling his or her reader to interpret the juxtaposition of the parts of his or her discourse in a particular way".

Some interesting research has been done on the way the patterns of discourse are signalled, paying special attention to lexical signals (Hoey 1983, 1994; McCarthy 1990; Winter 1994). Among the items that signal the *Problem-Solution* pattern (consisting of Situation- Problem- Solution- Evaluation) McCarthy (1990: 58) lists the following: "problem", "drawback" (problem), "approach", "response", "result", "outcome", "solution", "answer" (solution). Another discourse pattern, the *Hypothetical-Real* pattern, is signalled by means of lexical items that occur frequently in argumentative discourse. Some of the signals of this pattern listed by

Winter (1994) are: “assumption”, “claim”, for the hypothetical element, and “contradict”, “confirm”, “evidence”, for the real element. For these authors signalling involves focusing (Hoey 1983: 178), since making a relation explicit is a choice of the writer, who places emphasis on this relation, thus helping the reader to decode it more easily.

Other studies on signalling focus on its metadiscursive nature. Meyer (1975) defines *signalling* as a non-content aspect of the text which emphasizes some aspects of the content or which reveals aspects of the structure of the content. Signalling shows the author’s perspective on the content with which the discourse deals. Meyer distinguishes four major types of signalling:

- (i) the specification of how the relations are structured in the content structure (e.g. “problem”, “solution”, continuing words, like “one”, “other”).
- (ii) anticipation of the information that occurs later on in the text (e.g. “The three types of schools are urban, suburban and rural”. This statement anticipates the discussion of the topic).
- (iii) summary statements of the main point.
- (iv) pointer words, which inform about the author’s attitude or evaluation of the content (e.g. “This is an important point”).

Thus, for Meyer signals are linguistic elements used by the writer to facilitate comprehension. They may inform about the organization of the text or about the writer’s attitude.

Lautamatti (1978: 68) identifies five types of non-topical metadiscourse material, which she calls “markers”:

- (i) metatextual markers, used to comment on the discourse (e.g. “In later chapters I will describe”).
- (ii) illocutionary markers, which make explicit the illocutionary force (e.g. “I argue that”, “We report”).
- (iii) commentary markers (e.g. “This indicates that”).
- (iv) modality markers, which indicate the truth-value of statements (e.g. “They suggest that”).
- (v) attitude markers, which signal the writer’s attitude to the topic discussed (e.g. “I would like to”).

These are markers of the argument which point to the interactive character of the discourse. In this classification, markers are seen as signals that inform about an aspect of a fragment of the discourse (e.g. its illocutionary force) but do not help to locate this fragment within the whole rhetorical structure of the discourse: they are analyzed in relation to the utterance, not in relation to the discourse. Lautamatti does not draw attention to the fact that the same items can signal how the argument

develops through different rhetorical elements. For instance, in addition to signalling that an utterance has a particular illocutionary force, “we report” contributes to signalling a particular move of the rhetorical structure of the research article: the statement of the claim.

Other studies approach signals with a global perspective, considering that any element which operates at the supra-sentential level is a signal. In his attempt to describe supra-sentential text organization Harris (1986: 157) distinguishes four different types of signalling or metastructuring units:

- (i) signals of discourse pattern (e.g. signals of the *Problem-Solution* pattern).
- (ii) connective units with a *Vocabulary 3¹* member (e.g. “condition”).
- (iii) structure glosses, concerned with the organization of the discourse (e.g. “I shall now discuss”, “As you can see in Figure 1”).
- (iv) content glosses, concerned with the organization of the content and with its evaluation in terms of the writer’s view of its significance (e.g. “The first part of the story...”, “The appearance of mould was a fortunate chance”).

The difference between content and structure glosses should be seen in the light of the definition of the concepts *content* and *structure*. For Harris content is “how I view the facts and evaluate them in the text” and structure is “how I am making my text” (Harris 1986: 159).

Evensen (1990) characterizes *pointers* as linguistic items that signal rhetorical superstructure, superstructure being defined as “the macro-level (sequential or hierarchical) result of text strategies employed for some rhetorical purpose” (Evensen 1990: 182). Signals are classified in terms of their use in discourse in the following different categories:

- (i) metatextual deixis (e.g. “this article”, “this book”, “above”)
- (ii) markers of the internal logical structure of part of the discourse. They comprise *enumerators* (e.g. “first”, “second”), *sequential relaters*, which point to the sequential text structure (e.g. “to begin with”, “finally”, “to conclude”), and *lexical dyads* (e.g. “cause”-“effect”, “question”-“answer”).
- (iii) topic markers (e.g. “as for”, “how about?”, “to turn now to”).
- (iv) temporal pointers, which mark episode boundary (e.g. “now”).
- (v) connectors used as pointers.

The concept of signalling has also been paid attention to from ESP (English for specific purposes). In his detailed move analysis of the research article, Swales (1990) comments on the lexical signalling of some moves, that is, he establishes a relation between moves and signals. The following are some examples of this relation in the Introduction, the best studied section:

Move/ Step	Lexical signals
1/1 Establishing a territory/ Claiming centrality	Recently there has been <i>considerable interest</i>
1/2 Establishing a territory/ Making topic generalization(s)	Recently the relationships between (...) <i>have been explored</i>
2/1 Establishing a niche/ Indicating a gap	<i>Yet</i> there is a <i>dearth</i> of information
3/1 Occupying the niche/ Outlining purposes	<i>The purposes of the present study were</i>
3/2 Occupying the niche/Announcing present research	<i>This study attempts to</i> <i>This study is concerned with</i>

(Swales 1990: 162)

Brett (1994) also presents a detailed list of the lexical signals and grammatical realizations associated with the communicative categories (Swales' moves) of sociology research articles. Zeiger (1991), in her analysis of the structure of biomedical research articles based on the move analysis of biomedical research articles, claims that there are some parts in the research article that should always be signalled, specially the sentences that state the question, the answer and the summary of the conclusions.

3. A SCHEMA-BASED MODEL FOR LEXICAL SIGNALLING

As we have seen, most descriptions and taxonomies of lexical signalling define this concept in terms of the rhetorical structure of the text. Since the structure of the text is a reflection of the formal schema in the writer's mind, we aim at providing a schematic framework for the description of lexical signalling.

3.1. *Schemata and rhetorical structure*

Communication is based on the sharing of knowledge between participants, which makes it possible to convey new knowledge. The writer must make sure that the reader understands the meaning he intends to convey. For this purpose he draws on the reader's knowledge of the world and of the language. This kind of knowledge is organized in the form of *schemata*². Schemata are configurations of background knowledge, or, in Widdowson's words, "cognitive constructs which allow for the organization of the information in long-term memory and which provide a basis for prediction" (1983: 34-35). Carrell (1983) makes a distinction between *content* and *formal schemata*. Content schema is defined as "background knowledge about the content area of a text" (Carrell

1983: 84). Formal schema is “background knowledge about the formal, rhetorical, organizational structures of different kinds of text” (*ibid.*).

There is a narrow relationship between the concepts of content and formal schema and those of *macrostructure* and *superstructure* (Van Dijk 1977, 1980). Macrostructure is the global semantic structure of a text and superstructure is the global schematic structure of a text. The latter is a formal structure consisting of ordered categories that must be filled with the content of the semantic macrostructure. Superstructures provide an order for the text and, in this way, they organize the reading and understanding process and create expectations regarding the semantic content. Carrell (1988) states that reading comprehension consists in an interactive process between the reader’s background knowledge and the text. That is, there is an interaction between schemata (cognitive constructs of the reader) and structures (macrostructure and superstructure). The readers’ formal schemata allow them to recognize the rhetorical organization (or superstructure, in Van Dijk’s terms) of the text and, in this way, to process it.

Following Van Dijk’s (1980) distinction between semantic and pragmatic superstructure, we can differentiate between two types of rhetorical organization:

- (i) semantic. Rhetorical structures which organize the content of the text. Examples of this category are, among others: the discourse patterns described by Winter (1977, 1994) and Hoey (1983, 1994) (i.e. *Problem-Solution, Hypothetical-Real*), and Meyer and Rice’s (1982) types of rhetorical organization (*collection, causation, description, problem-solution, comparison*). They are ways of organizing the topic, by establishing different semantic links between the elements of this topic, which represent abstract schemata.
- (ii) pragmatic. Rhetorical structures which organize the interactive development of the discourse³. For instance, in the genre of formal meeting Van Dijk (1980: 197-8) observes the following canonical structure: opening, assessment, topic, discussion, decision, questions. In the field of ESP the generic structure of the research article can be seen as the formal schema underlying the pragmatic structure of the article.

To sum up, when encoding an argument the writer maps some kind of schema onto his discourse. The revelation in the discourse of this schema helps the reader to interpret the argument and enables her to organize the information and recognize the relationships holding in the discourse. There are lexical signals in the linear discourse that function as signposts which make it easier for the reader to discover how the different parts fit together.

3.2. *Types of lexical signals*

Once we have described the macro-level for a systematic description of lexical signalling, we are in a position to discuss the types of lexical signals. The concept of content schemata is not relevant for this discussion since lexical signalling points to the superstructure of the text and not to the macrostructure, which is reflected in the whole semantic configuration of the text.

Taking into account the distinction between semantic and pragmatic rhetorical organization (or superstructure), we can differentiate between two basic types of lexical signals: items that indicate semantic superstructure and items that indicate pragmatic superstructure. In this section we will show how these signals function in discourse.

3.2.1. *Signals of semantic superstructure*

They are lexical items that signal patterns like *Problem-Solution*, *Hypothetical-Real*, *Unexplained-Explanation*, *Question-Answer*, *Comparison-Contrast* or *Cause-Result*, among others. An important point made by Hoey (1994) and Winter (1994) when discussing some of these patterns is the need for signalling, which helps the reader to identify the structure and its components. As we will see, a lexical item on its own cannot be taken as conclusive evidence that a discourse develops by following a specific pattern. A lexical signal operates in conjunction with the other signals of the pattern and with other aspects of the discourse, to help the reader identify a specific discourse pattern. We will select a few patterns to reveal how their signals contribute to structuring the text. The patterns selected are: *Problem-Solution*, *Hypothetical-Real*, *Unexplained-Explanation* and *Comparison-Contrast*.

The *Problem-Solution* pattern consists of two basic parts narrowly related: *problem* and *solution*. They may be preceded by a *situation* part, which establishes the basis for the problem, and followed by an *evaluation* part, which provides the assessment of the solution. The following fragment illustrates how the pattern Problem-Solution is lexically signalled:

Problem	Testing may be for both teachers and students one of the most <i>unpleasant</i> aspects involved in the teaching learning process. It is <i>difficult</i> to choose the right way to do it. Teachers often find that after working long hours to prepare the text they <i>fail</i> to get the best of their students, who, at the same time, feel that the exam was <i>unfair</i> in some way.
Solution	How could I change this? This is one of the questions I put to myself, and I <i>found the answer</i> in a training course for teachers organised by the Department of English Philology (...). We were encouraged to put the students in the role of protagonists in the whole training process, which, of course, included testing (...)

Evaluation Finding themselves in the position of teacher made them aware of the difficulties of producing a test, and they came to a *more thorough understanding* of my role as a teacher. At the same time the work they had to do to prepare the questions for the test was a good way of revising for their final examination. By the end of the experiment we were *all pleased* with the results: the students because they had done something *new, creative and meaningful*; and for me, it was very *rewarding* in terms of motivation.

(Cote 1995)

The pattern *Problem-Solution* is also signalled in the following advert with the use of evaluative words:

Problem When the *tough* get going.

Looking for clear directions for your international employee benefit plans?

Solution Swiss Life is *the way to go* for coordinated global programs and real financial savings.

Evaluation As the world's *leading* international network of life insurance, we are *never far from where you need us*. And every Swiss Life Network Partner is a local leader, with the *expertise, flexibility and service capabilities to meet your most challenging insurance and benefit requirements* (...). It can be tough out there. But with Swiss Life you're never on your own.

(Fortune, May 1996)

The Problem is signalled by words which imply a negative evaluation ("tough") or by words which refer to the existence of a need ("looking for"). The Evaluation element is signalled by words which convey positive evaluation within the context of the communicative event (e.g. "leading", "expertise", "meet your...requirements").

The next pattern selected, the *Hypothetical-Real* pattern, consists of a binary relation between a hypothetical situation and the real element that is presented in the discourse. In connection with this pattern Winter (1994: 64) claims that the writer "has to signal explicitly" that the situation is hypothetical. The following example, which consists of two fragments of a research paper, shows how the signals of this pattern may help to organize discourse.

(INTRODUCTION: HYPOTHETICAL) *We hypothesized that collateral blood flow to the infarct zone is common in patients with acute myocardial infarction* (...). To test these hypotheses, we performed a prospective study of patients with recent myocardial infarction and a totally occluded infarct-related artery.

(DISCUSSION: REAL) *This prospective study demonstrates that collateral-derived residual flow is present in many patients with a recent myocardial infarction.*

(Sabia et al. 1992)

The hypothetical situation presented in the Introduction is signalled by “we hypothesized that”. The real situation in the Discussion presents the results of the investigation and is signalled by “This prospective study demonstrates”.

The *Unexplained-Explanation* pattern consists of the following elements (Adams Smith 1987): Situation (background knowledge which provides a context)- Unexplained or Unknown (a gap in knowledge)- Procedural (the way the explanation is found)- Findings- Interpretation- [Evaluation] (only needed when the explanation is not the author’s own)- Explanation. Adams Smith indicates that this pattern is signalled by items like “examine”, “investigation”, “observation”, “indicate”, “reveal”, “now”, “evidence”, “show” or “mean”. The following fragment consists of a selection of sentences, taken from a research paper, which include the signals of this pattern. Owing to space constraints we cannot reproduce the whole paper here.

Situation	<i>In recent years there has been much interest in hormone replacement therapy and the overall balance of benefits and risks. One benefit of hormone replacement therapy is its proved effect in alleviating menopausal symptoms¹⁹—symptoms which persist for more than one year in over 80% of menopausal women¹⁰.</i>
Unexplained	<i>Few attempts have been made to measure the impact of menopausal symptoms on quality of life or changes in quality of life resulting from use of hormone replacement therapy.</i>
Procedural	<i>Several methods exist to measure quality of life¹². We decided to use two valuation methods and to compare the results obtained from each.</i>
Findings	<i>Table I shows average utility values which were calculated from rating scale scores given in response to the two descriptions.</i>
Interpretation	<i>These values, which indicate a surprisingly low quality of life associated with menopausal symptoms, are comparable across the three subgroups.</i>
Findings	<i>Table II summarises utility values calculated from responses to the time trade off questions (...) Table IV shows measures of agreement between results obtained from the two different methods (time trade off and rating scale) in the form of kappa scores.</i>
Interpretation	<i>Overall, therefore, these findings indicate that the two methods produced results that were poorly related but not contradictory.</i>
Findings	<i>However, the most interesting finding from the work described here is that many women feel that quality of life is severely compromised by the presence of menopausal symptoms.</i>
Evaluation	<i>One limitation of the rating scale method as used in this study was that there were no indicators of severity along the numerical scale (very poor, poor, average, good, very good, etc), with the consequence that occasionally there were discrepancies between replies given by different women.</i>
Explanation	<i>This study suggests that quality of life may be severely compromised by the presence of menopausal symptoms. The use of hormone replacement</i>

therapy to relieve symptoms *may result in* substantial improvements in quality of life.

(Daly *et al.* 1993)

As the previous text shows, the elements of the pattern can recur. The elements Findings and Interpretation occur more than once. Lexical signalling reveals the boundaries between these elements.

The pattern *Comparison-Contrast* involves a *Matching relation*. The underlying semantics of the Comparison-Contrast pattern is *comparative affirmation* and *comparative denial* (Winter 1977: 30). The typical matrix clause of comparative affirmation is “What is true of X is also true of Y” and the typical matrix clause of comparative denial is “What is true of X is not true of Y”. Thus, the notion of repetition is basic for this pattern. Hoey states that repetition links enable the writer to introduce something new connecting it to what is being repeated (Hoey 1991: 52). This view of repetition as a framework for new information is based on Winter’s (1974) notion of *systematic repetition and significant replacement*. For Winter the function of repetition is to “focus upon *replacement* or change within the repetitive structure” (Winter 1986: 92), in such a way that what is presented as new is interpreted in the context of what is repeated. The following example illustrates how the lexical items which hold relations of repetition and replacement signal the Comparison-Contrast pattern:

(1) It *took you a long time* before you could *walk*. (2) Air France will *save you some* when you want to *fly*.

(3) *Your father* must have told you often enough that the best way of *walking* is to put one foot in front of the other. (4) And then backing up his words with action, he helped you *save time* during the slow learning process. (5) The person you can best rely on today for getting around is *Air France*. (6) Going on better than Air Papa, our new “Paris Charles-de-Gaulle 2” hub transfer system gives you access to a worldwide network of 600 long-distance flights every week. (7) *Save time* and earn Miles too while you travel, with our new “Fréquence Plus” frequent flyer program. (8) Today, it seems the best way to travel faster and better is to *put one foot after the other* and enter Air France airliner.

(*TIME*, September 1996)

In the first paragraph “took a long time” is opposed to “save you some” and “walk” to “fly”. In the second paragraph the idea of “save time” is repeated, but “your father”, on whom you relied, is replaced by “Air France”, on whom you must rely.

It should be pointed out that these patterns may organize the whole text or a stretch of text. Thus, lexical signalling is also useful in indicating the boundaries between the patterns, when there are more than one in a single text, and the relations between these patterns. For instance, a text structured by means of the *Problem-*

Solution pattern may have another *Problem-Solution* pattern embedded when the evaluation is negative (Hoey 1986). A negative evaluation implies that the problem has not been solved and therefore a new solution is needed and a new evaluation.

3.2.1. *Signals of pragmatic superstructure*

Among the signals of pragmatic superstructure we can distinguish between those that reveal the sequence of illocutionary acts in a text and those which contribute to the identification of the different moves in a genre. We will comment on each of them in turn.

3.2.1.1. Signals of the sequence of illocutionary acts in a text

Lundquist suggests three types of coherence structures (1989: 135): the thematic, semantic and pragmatic structure, respectively generated by the reference act, the predication act and the illocutionary act⁴. The existence of a type of pragmatic coherence is based on the sequence of illocutionary acts. The pragmatic coherence structure is, according to Lundquist, based on “modal expressions which relate the content directly to the utterance situation, by signalling the presence of the producers, their relation to the textual content and to the receivers and their reference to other works” (1989: 135), in this way showing the line of argumentation. There are lexical items which signal the functional value of the sentences and help to establish the nature of the successive acts. In order to illustrate how lexical signals indicate pragmatic structure we will look at two different genres: the research article and the letters to the editors. The following text is the Introduction of a research paper published in *British Medical Journal*:

Evaluation in obstetrics is *well developed*, and the confidential enquiry into maternal mortality serves as a model for other mortality reviews¹. *The House of Commons Social Services Committee*, however, *has recently repeated its recommendation*, first made in 1980, that epidemiological reviews of perinatal mortality rates should also be abolished¹. *The Department of Health has endorsed this* by requiring regional health authorities to establish epidemiological surveys of all still births and neonatal deaths¹(...)

While *we welcome* the use of such reviews, *it is important* that appropriate comparisons are made so that correct conclusions are drawn from differing perinatal mortality rates. For example, how can the perinatal mortality rate of an affluent part of East Anglia (...) be compared with that of an inner city area in south Wales, where a higher incidence of congenital malformation is combined with social disadvantage?

Since the mid-1970s we have reviewed perinatal mortality rates in Leicestershire to describe the cause and number of perinatal deaths and to use this information to influence local services. *This report describes* the referral patterns of women during pregnancy and the effect this has on the interpretation

of perinatal risk; *compares* crude perinatal mortality rates between different maternity units; *shows* how adjustment for case mix influences the initial rates; and *suggests* ways of making analyses of perinatal mortality rates more relevant for evaluating obstetric and neonatal care.

(Clarke *et al.* 1993)

All the italicized signals reveal how the line of argumentation develops in the Introduction. The lexical signals reveal the argumentative structure which is typical of the Introductions of research articles. First, the authors evaluate the topic they are going to deal with (“well developed”), then they report on how others have approached this topic (e.g. “The House of Commons Social Services Committee, however, has recently repeated...”). “We welcome” and “it is important” reveal the authors’ attitude towards the topic. Finally, “this report describes”, “(this report) compares”, “(this report) shows”, and “(this report) suggests” are illocutionary markers, which indicate the illocutionary force of the acts which are performed in the paper. Since they occur in the Introduction, they have a predictive nature, given that they inform prospectively of subsequent acts. The deictic “this report” stands for “we”, illustrating one of the features of scientific discourse: the use of non-human subjects with verbs which require human subjects, in order to convey the impression of objectivity.

The other type of texts, the letters to the editor, have been chosen because their brevity allows us to include the whole text. The lexical signals of pragmatic structure are italicized in the following letters:

I wonder if this is only the beginning of a nightmare of terrorism in the U.S. Europe is accustomed to terrorism, and has learned how to handle it. *This does not seem* to be the case in the U.S. As one of the most influential countries in the world and a global player in international politics, America is not only vulnerable but a first-class target for extremist forces (...) *I deeply hope* the latest episodes in New York and Atlanta will not represent a turning point in the direction of more terror.

(TIME, August 16, 1996)

You note in “lost magic” that “terror now lurks in the shadows like a stranger.” *I suggest* that brotherhood is there also. The picture accompanying the story shows a wounded white man cradling a more seriously wounded black man in his arms. The world’s salvation lies in such love being more powerful than fear, not in the building of better bomb-detection devices.

(TIME, August 16, 1996)

How can it be that Africa is still dying while the world watches (Aug. 5)? *I’m sure* the U.N is doing its best, but *clearly* its best is not good enough. There are always committees to fight Irish rights, build up Sarajevo, talk peace with Jewish and Arab leaders. *It is a crying shame* that Rwanda and Burundi are torn apart and yet seem to be ignored. *I am not* a racist, but sometimes *I wonder*: is it

because these poor people are not white? If that is the case *I fear* for the future of Africa.

(TIME, August 16, 1996)

The lexical items underlined above signal the presence of the participants in the communicative event (e.g. “I suggest”, “I wonder”, “you note”) and the acts they are performing by means of discourse (e.g. *express surprise, suggest, express opinions*). They also indicate the writer’s degree of commitment towards the truth of the propositions in the discourse (e.g. “seem”, “clearly”) and reflect the writer’s evaluation of the content (e.g. “it is a crying shame”).

3.2.1.2. *Signals of the categories or moves of a genre*

As we have said, the schematic structure of a genre, consisting of functional units called “moves”, is also a pragmatic structure. In linguistics, genre has been defined as “goal-directed communicative event”, “having schematic structures”, being realized in a complete text, with a beginning, a middle and an end (Swales 1990: 42). Thus, one of the features of a genre is that it is made up of a series of functional units or moves which constitute the specific generic structure. There exist genre related signals that mark the different moves within a specific genre. They are signals that indicate how the text develops, since they act as signposts of the steps of the genre. We will exemplify these signals in the two genres used above: research papers, and letters to the editor.

Given that we have shown above some of the items which, according to Swales, signal moves in the Introduction, we will focus on another section of the paper: the Discussion. The following list includes the moves that may be found in the Discussions of research papers (Hopkins and Dudley-Evans 1988; Peng 1987; Swales 1990):

1. *Background information*, used to summarize the main point or remind of the aim of the research.
2. *Location of results*, with the form “X data is presented in Figure A”.
3. *Observation*. It presents a physically visible finding arising from the research.
4. *Statement of results*.
5. *(Un)expected outcomes*.
6. *Reference to previous research* (others’ or the authors’ own research).
7. *Explanation of outcomes*.
8. *Exemplification*.
9. *Claims*. They are the contribution of the writer’s to the ongoing research, which take the form of a generalization deriving from the results (Dudley-Evans 1994: 229).
10. *Limitations of the study*, regarding the findings, methodology or claims.
11. *Recommendation*.

In the Discussion sections the only obligatory move seems to be *Statement of Results*. Thus, the following discussion does not include all the moves listed above:

4. *Statement of results*

Our findings indicate that the discontinuation of digoxin therapy in patients with chronic heart failure in normal sinus rhythm who were receiving diuretic agents and a converting-enzyme inhibitor often resulted in clinical deterioration (...) Even in the patients who were able to complete the study, the withdrawal of digoxin therapy was accompanied by a worsening of symptoms, exercise tolerance, and quality of life. *These observations indicate* that the discontinuation of digoxin carries considerable hazards for patients with heart failure, even those who have mild symptoms, are clinically stable, and are receiving optimal medical therapy.

6. *Reference to previous research*

Our findings do not support the hypothesis that the use of converting-enzyme inhibitors obviates the need for digoxin in patients with chronic heart failure. *In several earlier studies*, the deterioration seen in patients after the discontinuation of digoxin did not occur when converting-enzyme inhibitors were substituted for digoxin.^{6 9 10} (...) However, *the findings of the present study* in patients receiving converting-enzyme inhibitors are similar to those of previous studies carried out in patients who were not receiving converting-enzyme inhibitors³⁻¹¹.

4. *Statement of results*

An interesting finding in the present study is that the clinical deterioration observed after the withdrawal of digoxin in many patients was delayed, frequently occurring weeks after the drug was presumably cleared from the circulation (...).

7. *Explanation of outcomes*

The physiologic explanation for the occurrence of such delayed effects is unknown, but their existence suggests that the usefulness of digoxin in an individual patient with heart failure may require months to assess adequately.

10. *Limitations of the study*

Our study does not permit elucidation of the mechanism by which digoxin produces clinical benefits in patients with chronic heart failure (...). *Unfortunately*, neurohormonal variables were not measured in the present study (...). *The results of the present study raise but fail to resolve* two important issues with regard to the role of digoxin in chronic heart failure. First, (...) *Further studies are needed to* elucidate the dose-response relations of digoxin in patients with heart failure. Second, although we observed serious adverse reactions less frequently in the digoxin group than in the placebo group, *the present study cannot* adequately evaluate the safety of digoxin in

patients with chronic heart failure treated with converting-enzyme inhibitors (...). Furthermore, since the present study was designed to evaluate the effect of digoxin on functional capacity, *we did not observe a sufficient number of deaths to permit any insight into the effect of digoxin on survival.*

9. Claims

In conclusion, the present study demonstrates that the withdrawal of digoxin carries considerable risks for patients with chronic heart failure and impaired systolic function in normal sinus rhythm who are receiving diuretic agents and converting-enzyme inhibitors. These findings support a continuing role for the drug in clinical practice.

(Packer *et al.* 1993)

The letter to the editor is a short text where a dialogical relation between *I-you* is established. This genre has two elements or *moves*: (i) the reference to a prior text; and (ii) the expression of personal opinion about what has been said in the other text. The following text is an example of how these moves may be signalled in the text:

I read with interest Ian Buruma's article "Lost Without Faith" about how the Japanese are looking for new gods (April 3). Buruma has keen insight on the Japanese mentality. However, I don't agree with his opinion that Soka Gakkai members worship Daisaku Ikeda, honorary president of the group, as a monarch. The Soka Gakkai is a grass-roots Buddhist organization whose goal is the establishment of world peace

(TIME, April 24, 1995).

The first move is signalled by "I read...Ian Buruma's article" and "(April 3)" and the second by "I don't agree with".

4. CONCLUDING REMARKS

There are various classifications of lexical signals which differ both in the concept of lexical signalling on which they are based and in the criteria used to distinguish the different types. In this paper we have proposed that since signalling is an element which operates at the level of discourse a systematic analysis of this phenomenon requires taking into account the structures signalled by lexical items. We have drawn on schema theory to put forward the existence of two types of lexical signals: those that indicate semantic rhetorical organization and those that indicate pragmatic rhetorical organization.

The analysis of lexical signalling within this schematic framework has allowed us to draw some interesting conclusions. This study reveals that lexical signals only have a signalling value within a specific context. A lexical item on its own cannot function as a signal of rhetorical structure. It acts in combination with the other signals

of that structure. Hence, the importance of examining lexical signals in terms of the schemata to which they belong. Lexical signals help the reader recognize the relations between the different elements of the rhetorical structure (semantic or pragmatic) which underlies a text. This rhetorical structure corresponds to a specific formal schema in the reader's mind, whose activation is facilitated by lexical signals. In this way, lexical signals contribute to making the processing of texts easier.

NOTES

1. *Vocabulary 3* (Winter 1974, 1977) is a type of vocabulary which encodes intersentential relations. In the sentence "one condition for the success of the team is obvious" "condition" is an item of Vocabulary 3 which signals the relation between this sentence and the following one.
2. There are different names to refer to this kind of structures: *plans, scripts, frames, scenarios, schemata*. Brown and Yule (1983: 236-255) give an account of the different concepts under this terminology.
3. For Van Dijk they are exemplified by everyday conversations, meetings, interviews, court procedures, lectures, among others (Van Dijk 1980: 196).
4. A similar view is that of Sanders, Spooren and Noordman (1992), who state that the relations between different spans of texts may be coherent on semantic or pragmatic grounds. The source of coherence is semantic when the sentences are related in terms of their propositional content and pragmatic when the relation is based on their illocutionary force.

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