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

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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 inter-action 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:

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.

Figure 1.
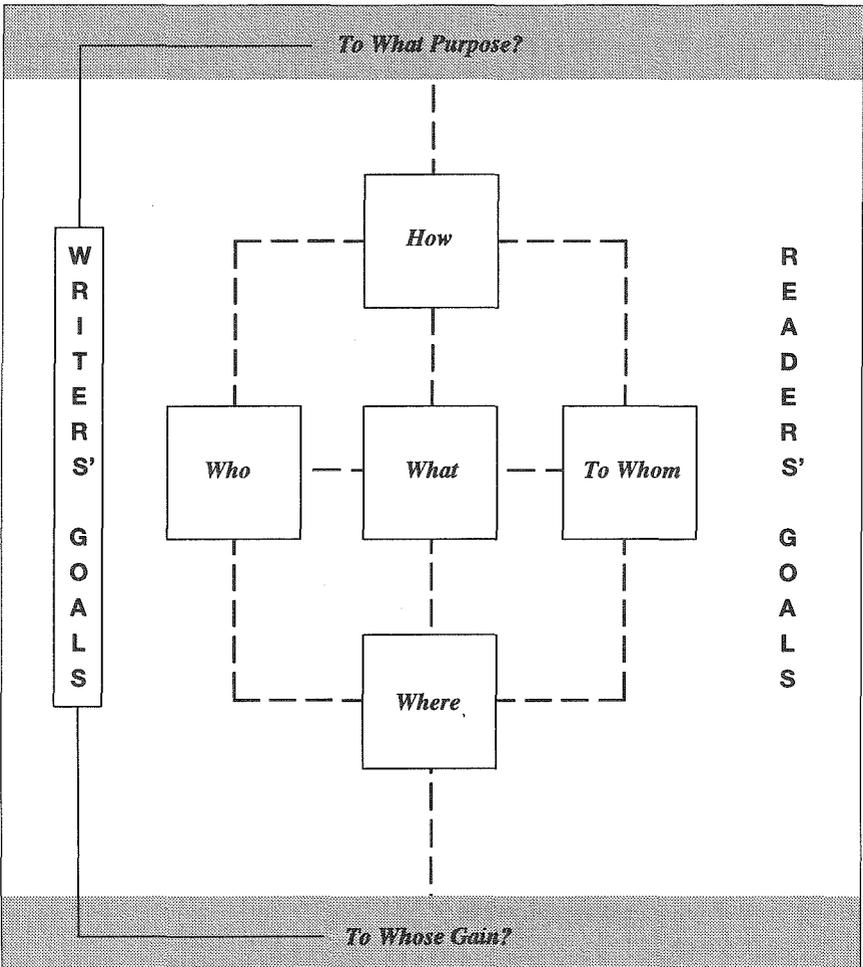
According to our experience, this visual representation is adequate to analyze and characterize texts at different levels of delicacy and to classify texts for various pedagogical and rhetorical purposes. Since it takes into consideration situational elements as well as the network of relations within 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 fulfil 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.

<div align="right">(New Scientist, November 12, 1988)</div>

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 news-papers 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. He/She 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 North American Space Agency (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".

ERM, 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 hypothetize 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 green-

house 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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