

# **EVALUATION IN ACADEMIC RESEARCH ARTICLES**

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BY

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DEDICATED TO THE LOVING MEMORY OF  
MY DEAR FATHER, JOHANNES,  
WHO WILL ALWAYS OCCUPY  
A SPECIAL PLACE IN MY HEART.

## ABSTRACT

This thesis focuses on the study of the interpersonal aspect of evaluation as a category of meaning in discourse. The phenomenon of evaluation is studied in terms of its range of different functions in written discourse, particularly in the academic research article (ARA). The study is situated within a broad field of written discourse as interactive drawing particularly on the semantic theories of discourse of Halliday and Sinclair. In this study the function of evaluation is divided into three dimensions. The first dimension - writer responsibility - is concerned with how far the writer of a text can be held responsible for a proposition in the text. The analysis of writer responsibility is based on whether or not the proposition is averred or attributed, and whether or not it is categorical or modified (i.e. through modality and/or hedging). It is argued that, for example, a non-sourced and categorical proposition is higher in writer responsibility than a sourced and/or modified proposition. The analysis of text for writer responsibility also highlights the complexity of interaction between the two choices - source and modification (see Chapter 3 for the analysis of writer responsibility). The second dimension - parameters of value - is concerned with what things are evaluated in the academic research article and in what terms. The analysis of parameters of value indicates that in the ARA evaluation can be divided into two kinds - that which is content related (TOE) and that which is research process related (ROE). Focusing on the latter type of evaluation, it is found that in the ARA only certain things are evaluated and along certain predictable parameters. Basing the evaluative choices on whether the entity being evaluated is process (i.e. methods) or product (i.e. results), the study indicates that the main parameters of value in the ARA are Fixedness and Worthiness. These parameters of value are discussed in Chapter 4 of the thesis. The third dimension - the textualisation of value - refers to how evaluation is realized in the language. The study finds that the contribution of evaluation to the organisation of discourse can be seen from the perspectives of Scope (which is concerned with the structure of the text) and Harmony (which is concerned with the texture of text). The textualisation of value is discussed in Chapter 5. The three dimensions of value are brought together in Chapter 6 in order to explore how they interact in discourse: this three-dimensional analysis applied to samples of whole texts shows both the complexity of evaluation and the value of the proposed approach in giving a clear picture of the complexity.

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## CHAPTER 1

### INTRODUCTION TO THE STUDY

#### 1.1 Introduction

In this study, I investigate an aspect of interpersonal meaning known as evaluation. The study of evaluation is based within a broad area of written discourse as interactive in which interaction is defined simply as a successful exchange of meaning between the writer and the reader through the text. The study draws its theoretical basis from a combination of several theories of written discourse particularly those broadly consistent with the theory of language as multifunctional in the semantic approaches of Halliday (e.g. Halliday, 1985a, 1989, 1994a) and Sinclair (e.g. Sinclair, 1981, 1985, 1987, 1993). From the multifunctional perspective both paradigmatic and syntagmatic choices from the language system can be used to perform different discourse functions: to “represent patterns of experiences” (Halliday, 1985a: 101) - what Halliday calls the ideational function - and to negotiate interpersonal roles and relationships between interactants - the interpersonal function. In the present study evaluation is seen as an integral part of the interpersonal function of language.

Despite the fact that many of the theories of discourse mentioned above provide a theoretical foundation for the present study, they do not deal specifically with evaluation and therefore the approach used for the investigation of evaluation does not derive directly from them. In this thesis, I am concerned with the function of evaluation in written discourse - how it contributes to both the meaning and

organisation of a written text. This approach is broadly based on the work on evaluation by Hunston (1989) which has since been extended to other investigations (e.g. Hunston, 1993a, 1993b, 1993c, 1994). The approach is discussed in detail in chapter 2 below and is reflected in the analyses carried out in the main body of the thesis (Chapters 3 to 6).

The broad aims of this study are to explore the role of evaluation in written academic discourse, to set up simple categories of evaluation and to apply these categories to the characterisation of the academic research article (ARA). As noted above, the analyses of evaluation set up in this investigation are based broadly on the semantic theories of Halliday and Sinclair, some of whose terminology and analyses of discourse are adapted for the approach to the study of evaluation as set out in this thesis.

To put my study into perspective, in this chapter I will briefly discuss the reasons for the choice of evaluation as a topic of research and the choice of data, as well as the approach used for this research.

## **1.2 The Study of Evaluation**

Many researchers recognise an important role for evaluation in both the meaning and organisation of discourse (e.g. Hunston, 1989; Sinclair, 1986; Thompson, 1996a). Thompson, for example, places evaluation as a category of meaning at the centre of the study of written discourse by arguing that “it is important to note that evaluation is a central part of the meaning of any text and that any analysis of the interpersonal

meanings of a text must take it into account” (Thompson, 1996a: 65). However despite the importance of evaluation in interaction, many discourse analysts make little or no attempt to study evaluation as an aspect of discourse meaning in its own right. Even among those who use the term, there is still a lack of consensus as to what constitutes evaluation in text, that is, its definition, its identification in text and what distinguishes it from non-evaluation, as well as its function in text. One reason for the lack of systematic study of evaluation may in fact be the complex nature of the phenomenon of evaluation itself which appears to defy attempts to classify it into a single linguistic category. Several researchers have mentioned the lack of definitive formal characteristics associated with evaluation. According to Thompson, evaluation “is, in a sense, parasitic on other structural elements” (1996a: 65). In short, in order to evaluate something, the evaluator makes choices from other language systems in the lexicogrammar and other aspects of discourse.

To make clear what is meant by evaluation in this study, it may be useful to look at two main perspectives from which evaluation has been defined. First, evaluation has been associated with a kind of meaning inherent in individual lexical terms used by the speaker/writer to express opinion about the ‘good’ or ‘bad’ of something, for instance, **beautiful** and **horrendous** - such terms have been referred to as attitudinal lexis (e.g. Lyons, 1977; Cruse, 1986; Carter, 1987). The difference between the denotational and evaluative meaning of a word underlies Halliday’s (1985a) distinction between experiential (defining) and interpersonal (non-defining) epithets within nominal groups (see Halliday, 1985a: 163; Martin, 1992: 315). The following

is an example of evaluative meaning from the *Sun* newspaper quoted by Billig, 1988 (emphasis mine):

“It’s **obnoxious!**” Says the Queen. The Queen yesterday described the plan to make a porn film on the sex life of Jesus as ‘**obnoxious**’ (Billig, 1988: 204).

In the context above, the lexical word **obnoxious** is not a defining term for the *plan* referred to by the Queen but an expression of personal opinion based on her perception of good and bad, and hence it is attitudinal/evaluative in function.

The second perspective is that of evaluation as a feature of discourse. In this view, evaluation does not reside in an individual lexical term but is a category of discourse meaning which can be expressed in many different ways. It is a pervasive function of discourse by which the speaker/writer constantly expresses not just content information about the world but the “angle” from which the content needs to be viewed in order to understand how it fits into the ongoing interaction through language.

Several studies on the discourse function of evaluation in written text have shown, for example, how evaluation marks boundaries of meaning such as openings or closures of parts of the text. Sinclair recognises the contribution of evaluation in plane-change (Sinclair, 1981), in paragraph boundaries (1986), in the PRD structure (Sinclair, 1987), and in prospection and encapsulation (Sinclair, 1993). Francis (1986, 1994) also points to the role of evaluation in labelling (see also Hunston, 1989 on relevance markers).

Another example of evaluation as a function of discourse is that found in rhetorical analyses of text in which evaluation is a label for an element in the structure of a text, for instance, Labov's (1972) narrative structure and Hoey's (1979, 1983) Problem-Solution pattern. A simple illustration of this function of evaluation can be seen in the following minimum discourse from Hoey (1979, 1983):

- (1) I was on sentry duty.
- (2) I saw the enemy approaching.
- (3) I opened fire.
- (4) I beat off the attack.

Each of the four sentences marks a stage in the Problem-Solution text - for example, sentence (1) identifies Situation, (2) Problem, (3) Response while (4) expresses Evaluation. Although there is no explicit attitudinal lexis in (4) to signal Evaluation, the element is identifiable on the basis of its meaning in relation to the other three sentences (the role of evaluation in a Problem-Solution text is discussed in detail in Chapter 6).

In addition to the two perspectives above, there is a third perspective which can be seen as transcending the two perspectives - evaluation as an expression of an ideological viewpoint. Carter, for instance, points out that "a choice of words or of one syntactic construction instead of another will function not just in a vacuum but to articulate ideology" (Carter, 1987: 92). Using lexical terms, the author gives examples of how "vocabulary choices are crucial to the expression of a viewpoint which extends beyond personal attitudinal marking towards a more sociopolitical position" (ibid.: 92). One such example is the difference between **freedom-fighter** and **terrorist** where the two terms "articulate opposing viewpoints but retain the same referential identity": the choice of either of the two terms is determined by the

ideological position from which the speaker is looking at the identity of the referent (ibid.: 92).

The argument by Carter above illustrates the inevitable overlap between personal opinion and ideological meaning. For instance, the Queen's negative description above (i.e. **obnoxious**) of the plan to make a pornographic film about Jesus can also be attributed to wider Christian values and it thus has an ideological basis. This ambiguity between personal and ideological meaning partly explains the complexity and pervasiveness of evaluation and the difficulty of pinning it down as a classifiable linguistic category. However, it is equally this ambiguity of language which makes the study of evaluation interesting to discourse analysts.

Following a discourse-based view of evaluation, I make no attempt in this study to categorise evaluation under any single classificatory linguistic system; instead I look at a text (or part of it) as an expression of evaluation - in my analysis of text for evaluation I look at which parts of the text evaluate other parts and how a coherent angle of view is constructed throughout the text. Similarly I make no attempt to separate the two meanings of evaluation - the personal and the ideological: I assume that a text expresses a personal point of view which is derived from the value system of the culture which shapes such a text - the ideology. The use of the ARA as data for the study of evaluation makes it relatively easy to see the interrelatedness of the personal and the ideological meanings of evaluation. In the ARA the writer's choices for evaluation are constrained by the value system of the genre - what things are evaluated and in what terms.



The interdependence of the perspectives to the study of evaluation discussed above is made clear in the approach to the study of evaluation set up in this thesis. At this point the assumptions about evaluation in the present study can be seen in the following three-point summary:

(i) Evaluation is simply an expression of attitude towards - or opinion about - something in terms of how good or bad it is: evaluation can be explicitly signalled (e.g. through explicit evaluative lexicogrammatical terms) or it can be implicit. Instead of suggesting that evaluation resides in an individual lexical item as suggested by lexical semantics, it is more appropriate to say that evaluation is created by the text itself (Hunston, 1989). Thus what is evaluative in one text may be non-evaluative in another.

(ii) Since evaluation is text-dependent, in order to identify it in text, and to distinguish it from non-evaluation, the reader should be aware of the 'goals' of the text which are often spelt out by the writer of the text (see Hunston, 1989: 204, for a detailed discussion of the concept of 'goals'; also see Chapter 2 for a fuller discussion of the present study's approach to evaluation).

(iii) Evaluation has both a personal and ideological basis, with the latter determining the former as has been argued above. In this study ideology is seen as creating the context for evaluation be it explicitly signalled or implicit. In the context of the present study, the ideology of science determines the value system of the scientific-academic genre in that it places constraints on which entities are evaluated and the

terms in which they are evaluated (see Chapter 4 on the characterisation of the value system of the ARA).

It is also important to mention at this point that the term evaluation in this study refers to a very broad category of discourse meaning which has been referred to in alternative terms, for example, point of view (e.g. Simpson, 1993), attitude (e.g. Jordan, 1984), modality (e.g. Stubbs, 1996), stance (e.g. Biber and Finegan, 1989), and many others which refer to the assignment of value to things or the expression of the speaker/writer's perspective on his/her proposition. Some of these alternative terms for evaluation and their relationship to the approach to evaluation set up in this study are discussed in detail in Chapter 2 below.

### **1.3 The Academic Research Article**

It may to some extent appear surprising that I choose to use the academic research article for the study of evaluation which is an interpersonal phenomenon: scientific-academic writing has for a long time been seen as objective and devoid of participant (writer and reader) intervention, often reflected in features of an impersonal style such as passive constructions and formal register. I argue in this study that, despite the perceived objectivity of this genre, the ARA is very interactive. Given the purpose of carrying out research and publishing findings, it is not in fact surprising that the genre is highly evaluative. Commenting on the function of the ARA, Hyland points out that:

The publication of scientific results seeks to accomplish both institutional and individual goals. A research paper not only extends understanding of phenomena and theories that the current paradigm

deems worthy of study, but also helps support or establish the personal reputation of the writer (Hyland, 1996: 435).

This attempt at inducing others to accept one's findings as accurate and worthwhile, and thereby establish one's personal reputation as a valued member of the research community, is done through persuasion which is realized in the construction of knowledge claims (see Chapter 2 on the construction of knowledge in scientific discourse). The role of evaluation in this negotiation of knowledge is observed by Gilbert (1976) who argues that:

Evaluation, the process of weighing up the validity of knowledge claims, is in practice often entwined [sic] with their production, since experimental techniques and candidate theories will usually be assessed by the researcher and his immediate colleagues during the course of the research programme (Gilbert, 1976: 288).

In this study, I argue that, because the ARA is a rigorously edited genre and it follows a set style or format and a specific register, only certain entities are evaluated, in specific predictable terms and with predictable purposes. This predictability of value parameters in the ARA can be illustrated by the following example:

ST1.1: EC39

Simple contemporaneous correlations between one-month ERM interest differentials are presented in the lower half of Table 5. *The correlations are all positive and highly significant*, the lowest being over 0.6 (with standard error of less than 0.03); results for the three-month maturity are similar, as are results for first-differenced data. Analogues for the three-month measures of *g* are tabulated above the diagonal. Again, *the correlations are highly significant and consistently positive*, and conclusions do not change if the other maturity is used, or if the data are first-differenced.

In this example, the entities being evaluated are results/findings represented by *the correlations*, and the terms in which they are evaluated are **highly significant** and **consistently positive**. As will be proposed in this study, Significance (in this case expressed by the term **significant**) and Certainty (expressed by **consistently**) are

two scales used in the evaluation of research results (see Chapter 4 for a detailed categorisation of parameters of value in the ARA). This predictability of desirable values of the ARA makes the genre a very useful candidate for the study of evaluation.

The second reason for the choice of the ARA is pedagogical. I should make clear that my original plan for carrying out this research into evaluation was a pedagogical one - mainly to study the interpersonal function of academic writing in order to improve the writing and reading skills of EAP students at the National University of Lesotho. The motivation for the choice of the ARAs as data for this study is that they are written by professionals in the field - they have also undergone rigorous drafting, rewriting and editing before their final publication - which makes them ideal models on which to base the teaching of academic reading and writing in EAP and ESP classrooms. However, the complexity of the phenomenon of evaluation itself made me shift my focus to the present study which has developed beyond the original aims. The findings of this study therefore do not as yet have an immediate pedagogical application. It is my hope, however, to develop the study further with the long term aim of designing writing and reading materials for EAP teaching in ESL situations like my own.

#### **1.4 Corpus and Methodology**

The study uses a corpus of academic research articles from four different disciplines: Applied Linguistics, Psychology, History and Economics. Taking the view of the ARA as a broad genre (cf. Mauranen, 1993), the choice of multidisciplinary data for

this research was to gain as general a picture of scientific-academic writing as possible. While I am aware of possible differences among various disciplines in terms of ways of carrying out research and presenting findings (for example between History and other disciplines, as discussed in Chapter 6), the differences do not require different models of analysis, as by doing so “we would miss an important generalisation concerning scientific activity” (Mauranen, 1993: 5). A detailed justification of the use of data for this study is given in Chapter 2 below.

For the present study, 50 articles from each discipline have been studied in detail. For the purpose of identification, the sample texts used for the study were labelled as follows: AL for Applied Linguistics (see Appendix 1A), EC for Economics (see appendix 1B), H for History articles (see Appendix 1C) and PSY for Psychology (see Appendix 1D). The sample texts are numbered in order, for example, H1, EC2, AL48 or PSY1.

An attempt has been made to use mainly those articles written (or co-authored) by native speakers of English. The identification of such articles is based on the name of the authors and institutions which the articles bear - for example all the articles were published in British and American journals. The main reason for using articles by native speakers of English is to try and minimise the likelihood of discourse choices which are not entirely native-speaker-like and which, although they might be accepted by editors of the article, might not necessarily be generally accepted as correct in English.

### **1.5 Theoretical Basis of the Study**

As has earlier been mentioned, the present study of evaluation is based on a broad theory of written discourse as interactive, particularly on the semantic approaches to the study of discourse developed by Halliday and Sinclair. As will be seen in Chapter 2 as well as in the rest of the thesis, while Halliday's contribution is that of language choice being influenced by social context and thus allows us to discuss aspects such as register, genre and ideology (see the hierarchical relationship between the three in Martin, 1992), Sinclair's theory of discourse structure emphasises syntagmatic choices as motivated by interactive goals between the writer and the reader. The two studies provide important terminology some of which is adapted to the analysis of the phenomenon of evaluation - for example, from Halliday the three features of register - Field, Tenor and Mode - are used to analyse the context of evaluation in Chapter 7, while from Sinclair, the terms Aversion and Attribution play a significant role in the analysis of writer responsibility in Chapter 3.

An important theoretical basis for the identification of evaluation in text is that of the concept of Goals by Hunston (1989) discussed in Chapter 2 and 4 in this thesis. This concept is based on the view that evaluation is not external to the text but it is created by it (see Hunston, 1989: 204). The concept of Goals has been useful in the identification of implicit evaluation in the texts I am studying, and also in the categorisation of conventionally accepted values in the ARA.

## **1.6 Aims and Organisation of the Thesis**

In this study, evaluation in the ARA is taken, in very basic terms, to be the construction of the angle from which the information in the text is to be viewed. Given the complex nature of evaluation, and given the sophistication of the ARA as a genre, the fundamental question that I am interested in is how the writer goes about the task of guiding the reader, within the accepted generic conventions, towards the intended angle of view. In order to answer this question, evaluation is looked at from three perspectives, outlined below.

The thesis begins in Chapter 2 by reviewing the theories of discourse mentioned above and their contribution to the approach to evaluation in this thesis. By placing the study of evaluation within the broad theory of written discourse as interactive, the chapter prepares the ground for examining the concept of evaluation itself and helps address research questions such as why evaluation is worth studying, how it is expressed in text and what its function is in written discourse. The main body of the thesis is concerned with exploring the phenomenon of evaluation itself. Evaluation is looked at from three dimensions - writer responsibility, parameters of value and textualisation of value in chapters 3, 4 and 5, respectively.

(i) Writer responsibility in Chapter 3 is analysed from the point of view of the factuality and strength of an evaluative proposition - how far the writer accepts responsibility/can be held responsible for the propositions in the text. The propositions themselves might be evaluative or non-evaluative. The chapter investigates the ways in which the writer may increase or diminish the degree to

which (s)he can be held responsible, as well as the discourse function of acceptance of responsibility or rejection of it.

(ii) The second dimension - parameters of value - in Chapter 4 is concerned with the ideological basis of evaluation in scientific discourse: this takes into account the knowledge of the genre and field in which the evaluation is taking place. Here fundamental categories of evaluation are proposed on the basis of the type of entities evaluated and the terms in which they are evaluated. This dimension assumes the predictability of the values of scientific discourse as has been suggested in Section 1.3 above.

(iii) The third dimension - textualisation of value - in Chapter 5 is concerned with the realization of evaluation in the language of the text. The main focus of this chapter is that of the function of evaluation in discourse organisation and text patterning.

The three dimensions of evaluation above are brought together in a three-dimensional analysis of whole texts in Chapter 6 in which I explore the development/cumulative movement of evaluation and how this cumulation helps to express the overall evaluation/purpose of the text.

Chapter 7 concludes the thesis by returning to some of the theoretical issues raised in Chapter 2 and examines how the analyses carried out in the main body of the thesis fit in with these issues - the contribution of the present investigation to existing knowledge in written discourse as interactive. The chapter goes on to explore the possible theoretical and pedagogical implications for the study and makes some recommendations for future research.



## CHAPTER 2

### EVALUATION: APPROACHES AND DEFINITIONS

#### 2.1 Introduction

The present chapter looks at the study of evaluation within a very broad theory of interaction in written text of which evaluation itself is an integral aspect. Interaction in this study simply refers to the exchange of meaning between two interactants engaged in a communicative activity, be it in spoken or written mode. In this chapter I review several approaches to the study of written discourse and explore their contribution to the concept of evaluation as a dynamic resource for signalling interaction in text, specifically the academic research article (hereafter referred to as the ARA). First, I examine Halliday and Sinclair's studies on the notion of multifunctionality in which language is described as a system of meaning choices, for example, for giving information and for establishing/negotiating social roles and relationships among interactants. The notion of multifunctionality is useful for the work on evaluation in this study since the meaning of an evaluative stretch of discourse is based on the interpretation assigned to both paradigmatic and syntagmatic choices made by the writers of the texts used as data. Secondly, I review studies on written language as interactive in which the purpose of a written text is to achieve a communicative goal (i.e. exchange meaning) and as such lexicogrammatical choices made by the writer of the text are motivated by that purpose. Interaction therefore occurs when meaning has been exchanged between the writer of the text and his/her intended reader. The third approach is that of the relationship between language and ideology. From this perspective meanings in a text

are not only constructed by individual writers and readers but are also shaped by shared ideological beliefs and assumptions of the wider society (or culture) in which the text is produced. Thus the choices that the writer makes from the language are 'imposed' on him/her by societal norms and values about what is appropriate in the language. As argued by Fairclough (1992b), appropriateness "belongs to the domain of language attitudes: it is one sort of judgement that is made by members of speech communities about language use" (Fairclough, 1992b: 52). The implication of ideological studies for written text is that meaning is not only personal but societal and therefore the awareness of ideology is central to text production and comprehension (i.e. interaction).

Bringing together ideas from the three approaches to interaction makes it possible for me to explore existing studies on the ARA which is a specialised genre of scientific writing in which interaction between the writer and the reader should be understood from the perspective of its function - it is a forum in which the researcher-writer communicates new information to other researchers. In order to persuade other researchers to accept his/her new findings the writer has to follow conventions of style and format judged to be appropriate in that genre. Finally, the various concepts discussed above - multifunctionality, interaction, ideology and genre - all come together in the description of how evaluation works in written text, particularly in the ARA. The assumption made about evaluation is that it is an integral aspect of interaction which involves both personal judgement and an expression of the ideology (value system) of a particular genre. The assumption about evaluation as an expression of the value system of a particular genre assumes the existence of

different kinds of values for different genres, the point which is beyond the scope of the present study and which is a subject of further investigation.

## 2.2 Language as Multifunctional

The first theory which forms a crucial basis for the study of Evaluation is that of language as multifunctional based on two branches of Firthian tradition - the Systemic-Functional perspective (typically referred to as the Hallidayan approach) based on the work of Halliday and Martin in Sydney and that of Sinclair's work on discourse structure in Birmingham. The two approaches are not mutually exclusive in that they both define language as a system that is describable in terms of both paradigmatic and syntagmatic dimensions (the dimensions of choice and chain). The paradigmatic and syntagmatic relations referred to here are defined by Eggins (1994) in the following terms:

**Syntagmatic relations**, relations along the axis of chain, are relations by which signs can go together in sequences or structures; thus, the relationship between one sign and the signs that can go before or after it. **Paradigmatic relations**, relations along the axis of choice, are the relations by which signs stand in opposition to other signs; thus, the relationship between a sign and the other signs that might have occurred in its place. In language we can define linguistic signs at each strata and rank of the linguistic system in terms of these two kinds of relations (Eggins, 1994: 201).

Despite being based on a common theme of language as a system of chain and choice, Halliday and Sinclair's models of analysing language differ on the question of purpose and emphasis. For instance, while Halliday focuses on the importance of the paradigmatic dimension (system as choice), Sinclair emphasises syntagm (chain or structure). From the analysis of text by each researcher, Halliday's system can be described as basically a model of lexicogrammar, while Sinclair's is basically a

model of text. It is therefore very important to look at how the description of language use is handled in each of the two systems.

## 2.2.1 Halliday's Systemic-Functional Perspective

### 2.2.1.1 System and Metafunctions

The systemic-functional theory is described as “a theory of choice, by which a language, or any other semiotic system, is interpreted as networks of interlocking options: ‘either this, or that, or the other’, either ‘more like the one or more like the other’, and so on.”. (Halliday, 1985a: xiv). This is a sociosemantic theory which presupposes the ‘meaning potential’ of language which is dependent on the speaker/writer’s choices from the lexicogrammar in order to ‘mean’ (Halliday, 1978).

According to this theory, language is a configuration of choices from three different kinds of options or systemic networks which are assignable to three functional components or ‘metafunctions’ - the ‘ideational’ or reflective component, the ‘interpersonal’ or active component and the ‘textual’ component. (Halliday, 1985a, 1994a; Halliday and Hasan, 1989; Berry, 1975; Gregory, 1988; Martin, 1992; Eggins, 1994). According to Halliday (1985a), language is basically used to understand the environment (ideational) and to act on the others in it (interpersonal). The third component, the textual function, constitutes the linguistic realization of the first two functions and, according to Halliday, it “breathes relevance into the other two” (Halliday, 1985a: xiii). Gregory (1988) simplifies the notion of metafunctions by saying that whenever we want to communicate “we have something to say (ideational), somebody to say it to (interpersonal), and we have something to say

before another (textual)” and that the three functions correspond to the “micro-environments of generic situation”:

the dimension of experience relationship corresponds to the ideational function; that of interaction relationship to the interpersonal function; that of medium relationship to the textual function (Gregory, 1988: 305).

According to Halliday, in a text every clause chooses from each of the three functions simultaneously, and this means that separate analyses for the three functions do not imply separate clauses. In short, the systemic network suggests that all clauses are [material], [mental] or [relational] at the same time as they are [indicative] or [imperative] at the same time as they are [theme marked] or [theme unmarked] (see Martin, 1992). Describing the ideational function, Halliday argues that:

A fundamental property of language is that it enables human beings to build a mental picture of reality, to make sense of their experience of what goes on around them (Halliday, 1985a: 101).

This representation of patterns of experience is realized in the text through the system of Transitivity. In this perspective the clause expresses processes or ‘goings-on’: for instance of doing (Material), feeling (Mental) and being (Relational); and the participants acting in those processes, for instance, Actor in the Material process, Senser in the Mental process and Carrier or Identified in the Relational process (see Halliday, 1994a; Eggins, 1994; Thompson, 1996a, on Transitivity analyses).

The interpersonal function, on the other hand, is organised primarily through Mood choices. According to Halliday, Mood choices are grammatical realizations of the semantics of interaction. It is through choices from the Mood system that speech roles or functions are encoded. In Martin’s discourse terms, Mood is defined as a basic resource for negotiating meaning in dialogue (Martin 1992: 31). A clause can

choose from the indicative (declarative or interrogative) or from the imperative mood. The two choices realize four basic speech functions: Offer, Command, Statement and Question (see Halliday, 1985a; Martin 1992 for a detailed discussion). From this perspective, the clause is interpreted in terms of ‘speech roles’ and ‘commodity exchanged’ in the dialogue. The roles realized are those of ‘giving’ and ‘demanding’, and the commodity is either ‘goods and services’ or ‘information’, while the speaker’s position can be that of ‘initiating’ or ‘responding’ (see Mann and Matthiessen, 1985; Matthiessen and Bateman, 1991). The basic mood system is illustrated in Figures 2.1 and 2.2 below:

Commodity exchanged	(a) goods & services	(b) information
Role in exchange		
(i) giving	‘offer’ would you like this teapot?	‘statement’ he’s giving me her teapot
(ii) demanding	‘command’ give me that teapot!	‘question’ what is he giving her?

Figure 2.1: Giving or demanding, goods & services or information (Halliday, 1985a: 69)

		initiation	expected response	discretionary alternative
give	goods & services	offer	acceptance	rejection
demand	”	command	undertaking	refusal
give	information	statement	acknowledgement	contradiction
demand	”	question	answer	disclaimer

Figure 2.2: Speech functions and responses (Halliday, 1985a: 69)

In the clause, the Mood element consists of the Subject, which is normally a nominal group, and the Finite, part of the verbal group; for instance in ‘he might’, ‘he’ is the subject while ‘might’ is Finite (Halliday, 1985a: 72). The finite element expresses both tense (for example, past or present finite) and polarity, which is a choice

between positive and negative as in “is/isn’t, do/don’t” (Halliday, 1985a: 85). In a proposition, polarity functions as asserting (positive polarity) or denying (negative polarity). The choice of polarity, however, is not always based on the two extremes of negative and positive - in between the two extremes lies an important configuration of meaning, what Halliday calls ‘intermediate degrees’ or possibilities - probability, for example, ‘possibly’ - and usuality such as ‘sometimes’, and this is the system of Modality. Modality and its role in evaluation will be discussed in detail in Section 2.7.2 below.

The third component, the textual function, is analysed from the point of view of the structural organisation of the clause; the main elements of the clause structure are Theme and Rheme. Theme is defined by Halliday as “that element which comes in first position in the clause” and it is “the starting point for the message; it is what the clause is going to be about”, whereas Rheme refers to what remains of the clause (Halliday 1985a: 39). According to Halliday, “The theme of any clause ... extends up to (and includes) the ideational element” (ibid.: 56). This is the normal/unmarked theme. In the English clause, typically the unmarked choice of theme is the Subject of the clause. In some cases, however, a circumstantial element can be fronted; that is untypical and therefore constitutes a ‘marked’ theme. Researchers in systemic grammar have shown how various choices from the system of theme can realize various meanings in discourse. For example, Davies (1988) and Gosden (1993) examine the role of thematic choice in expressing the writer’s point of view in academic writing, while Peters (1986) uses theme choice to examine the dominant function in undergraduate writing, and Christie (1986) and Berry (1989) look at what

theme choices and thematic distribution indicate about success or lack of success in children's writing. Research on thematic structure in writing pedagogy ranges from syllabus and material design (e.g. Bernhardt, 1986) to models of writing in early as well as advanced levels in academic writing ( e.g. Brandt, 1986; Martin and Rothery, 1986).

This three-dimensional view of meaning in language is very important to the analysis of evaluation carried out in the present study as it allows a more complete picture to be built up of how evaluation operates and what its function is. Evaluation as a linguistic resource clearly belongs to the interpersonal area of meaning. However, to gain a clearer view of how evaluation works in a text, it is important to look at the concept as a negotiating strategy between interactants (interpersonal perspective), as an expression of the value system of the academic environment (related to the ideational function), and as contributing to the structure of the article (related to the textual function).

#### 2.2.1.2 The Context of Situation

Another important variable in the interpretation of meaning within systemic theory is that of the Context of Situation (including Context of Culture) which according to Halliday and Hasan (1989: 7) is derived from the work of Malinowski - it refers to the environment in which meanings are exchanged. This theory stresses the fact that language takes place in society and one of its main functions is to express the culture of that society, hence the theory of language as "social semiotics". Halliday argues that linguistics is a kind of semiotics because "it is an aspect of the study of meaning"



(Halliday and Hasan, 1989: 4). He defines the use of the term *semiotic* to describe “language as among a number of systems of meaning that, taken all together, constitute human culture” (ibid.: 4). The term *social* is used to indicate the relationships holding “between language and social structure, considering the social structure as one aspect of the social system” (ibid.: 4).

Halliday’s major contribution to the study of Context of Situation is that of the recognition of “systematic correlations between the organization of language itself (the three types of meanings it encodes) and the specific contextual features” (Eggins, 1994: 52). Halliday defines the Context of Situation as consisting of three main aspects - Field, Tenor and Mode. (Halliday, 1985b; Halliday and Hasan, 1989).

1. The FIELD OF DISCOURSE refers to what is happening, to the nature of the social action that is taking place: what is it that the participants are engaged in, in which the language figures as some essential component?

2. The TENOR OF DISCOURSE refers to who is taking part, to the nature of the participants, their statuses and roles: what kinds of role relationship obtain among the participants, including permanent and temporary relationships of one kind or another, both the types of speech role that they are taking on in the dialogue and the whole cluster of socially significant relationships in which they are involved?

3. The MODE OF DISCOURSE refers to what part the language is playing, what it is that the participants are expecting the language to do for them in that situation: the symbolic organization of the text, the status that it has, and its function in the context, including the channel (is it spoken or written or some combination of the two?) and also the rhetorical mode, what is being achieved by the text in terms of such categories as persuasive, expository, didactic and the like.

Source: Halliday and Hasan (1989: 12)

It is the Context of Situation which is seen as influencing choices or realizations in text of the three metafunctions. For instance, the Field of a text is associated with the realization of experiential meanings, Tenor with interpersonal meanings, while Mode

is associated with the realization of textual meanings (Halliday, 1985a; Eggins, 1994). The Context of Situation involves the whole issue of linguistic predictability which is made explicit by Halliday's theory of *register*. The term register is a semantic concept defined as :

a configuration of meanings that are typically associated with a particular situational configuration of field, mode, and tenor. But since it is a configuration of meanings, a register must also, of course, include the expressions, the lexico-grammatical and phonological features, that typically accompany or REALISE these meanings (Halliday and Hasan, 1989: 38-9).

The notion of register described above helps to clarify the interrelationship between language and context by showing the strength of the sensitivity of language to its context of situation. In this way it is possible to predict features such as those of vocabulary and structure in specific texts (sometimes referred to as stylistic variation). Montgomery says that the sensitivity of language to its context of situation "is registered by more than the individual words themselves: what seems to be more crucial is the way in which particular vocabulary is articulated together into utterances and what types of utterances can then result" (Montgomery, 1988: 102). The relevance of register for the present study is made clear by Hunston's notion of evaluation as register-specific: she argues that certain choices of evaluation are typical in ARAs but not typical in other genres; this is demonstrated in her contrastive analysis of non-academic and academic texts (Hunston, 1993a).

Since interpersonal relations (interactive roles) are claimed to be primarily handled through Tenor, it is important to discuss this variable in more detail. Halliday's definition of Tenor is carried further in research by Poynton (1985), Martin (1985, 1992), and Biber and Finegan (1989). According to Martin, Tenor is concerned with

the semiotics of relationships and it mediates these relationships along three dimensions - *Status* (what Poynton (1985) calls *Power*), *Contact* and *Affect*. He defines *Status* as “the relative position of interlocutors in a culture’s social hierarchy” (Martin, 1992: 526). The status/power dimension is concerned with whether there are equal or unequal relationships between participants; these are based on authority, occupational status or even expertise. Status here can be seen as similar to Brown and Gilman’s (1960) concept of ‘power’ in which pronoun forms of address (T and V, derived from French) are determined by equal and unequal relationships: for instance, the T form signals either condescension or intimacy while the V form signals reverence or formality (Brown and Gilman, 1960: 258). *Contact* refers to the interlocutors’ “degree of institutional involvement with each other” (Martin, 1992: 523). Martin argues that *Contact* is determined by “the nature of the fields speakers/listeners are participating in - how much contact they involve, how regularly, whether work or leisure activities and so on” (ibid.: 528 - 29). The difference between *Status* and *Contact* seems to be the equivalent of Hasan’s (1977) *Social role* (*Status*) and *Social Distance* (*Contact*). The third dimension, *Affect*, is defined by Biber and Finegan as “the expression of a broad range of personal attitudes, including emotions, feelings, moods, and general dispositions” (Biber and Finegan, 1989: 94). Martin sees *Affect* as what Halliday calls the “degree of emotional charge” between the participants (Martin, 1992: 525). The three dimensions of *Tenor* according to Poynton and Martin can be summarised by the following diagram:

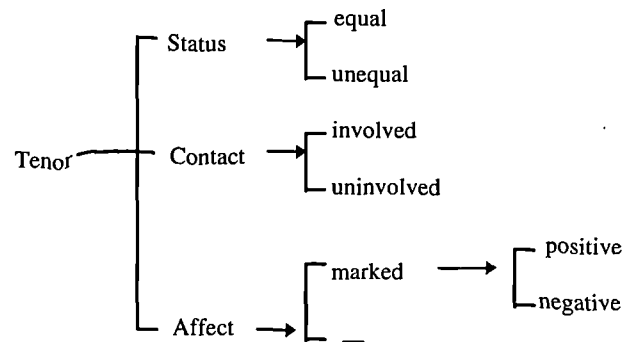


Figure 2.3: Three dimensions of Tenor (Source: Martin, 1992: 526)

The relevance of the concept of Tenor to interaction as described by the Martin/Poynton model is made clearer by Eggins (1994) who says that the dimensions of the Tenor - Power continuum (equal - unequal), the Contact continuum (frequent - occasional) and the Affective involvement continuum (high - low) can be explored through the distinctions between formality and informality of language use. Since Tenor is described in terms of social role relationships played by interactants, we can:

no doubt recognise that the kind of social role you are playing in a situation will have an effect on how you use the language. For example, you do not talk to the greengrocer the same way you talk to your mother (Eggins, 1994: 63).

Eggins argues that language will vary significantly from informal to formal situations. For example, expressions of attitude such as *fantastic*, *shitty* and *unbelievable* are typical of informal situations such as chatting among friends, whereas in formal situations “we tend to keep our attitudes to ourselves, or to express them in apparently “objective” language (*unfortunate*, *surprising*)” (ibid.: 65). This view of the differences between expressions of attitude is consistent with one of the

major assumptions about evaluation in this study: that evaluation is context-specific, a view which will be discussed in more detail in Chapters 5 and 6 of this thesis.

It should be mentioned here that even though evaluation appears in this model to be primarily related to Tenor, this does not mean that other dimensions of register are unimportant. Since the assumption made in this study is that evaluation is register-specific, it can be argued that both Field and Mode are important in order to support the Tenor dimension. For instance, to understand the value system of the ARA, knowledge of the Field (what is going on) plays an important role. To illustrate the relevance of Field, it is suggested that the values of Science, for instance, are different from values in other fields of human activity. This can be seen in the differences in the perception of value between academic discourse and conversation. In academic endeavour, for example, relevance is perceived as value and its importance is emphasised over that of moral goodness. In conversation, on the other hand, moral goodness is more important than relevance. Mode is important in terms of how evaluation is realized in text: it impinges on textualisation - e.g. whether evaluation is expected to be explicitly stated or not. I will return to this issue in the concluding chapters of the thesis.

### 2.2.2 Sinclair and Discourse Structure

It has already been mentioned that while a common perception shared by both Halliday and Sinclair is that of language as a social phenomenon, their approaches to the analysis and interpretation of a text show differences of purpose and emphasis. While Halliday's perception of societal influence on language is described from the

perspective of register (as in Halliday and Hasan, 1989), Sinclair adopts an interactive or dialogical approach to the study of discourse - the negotiation of meaning between the writer and the reader is of paramount importance in text and the desire to communicate determines the structure of the text .

In his theory of interaction in discourse, Sinclair looks at both the spoken and written modes of discourse as interactive but sees the main difference being that of the way in which interaction is managed in each. He argues that, in the spoken mode, there is a tension between personal and social pressures and that this tension is “simultaneously cooperative and face-threatening; it is a step toward the achievement of some personal goal, but it is put together in the knowledge that the goal can only be achieved through the construction of discourse, which by definition requires two participants” (Sinclair, 1985: 13). He goes further to point out that “Because of this fundamental tension, it is easy to see discourse as essentially manipulative, and indeed it is often difficult to find morally reputable terminology for what seems to be going on” (Sinclair, 1985: 13). While admitting that the pressure of timing, turntaking and turn holding is one of the main distinguishing features between spoken and written discourse, he argues that the latter has a unique interactive role in that the success of the interaction or coherence rests primarily with the producer of the text. In Sinclair’s words, “since the main purpose of a text is to be read, its destined role in a series of interactions has a backwash effect upon its composition” (ibid.: 13).

To explain the management of interaction in written text, Sinclair employs what he calls the dynamic model of discourse which is based on the concepts of purposefulness and directionality in discourse and argues that this model “must show how the discourse proceeds from one point to another” and “must show how the components of discourse play their part in the achievement of some purpose” (ibid.: 15).

Sinclair sees a well-constructed text as “a continuous movement from one stage of affairs or *posture* to another”(ibid.: 15). He introduces the concept of purposefulness into the description of the dynamic model and says that “The dynamic view sees discourse as directional, a succession of changing postures; but it must be heading somewhere” (ibid.: 16). Through the concept of *posture* he sees a text not as a sequence of sentences but of units of meaning and argues that a posture can be realized by one or more sentences, or even large stretches of text. He thus points out that one of the major weaknesses of linguistic description is that “linguists are so accustomed to describing small-scale stretches of language that the contribution of each particular to the overall effect may well be missed” (ibid.: 16). In a dynamic model therefore:

it is necessary to continue the directional description until a point is reached where the verbal activity performs in its totality some action that lies outside language. Each successive component has an effect that may be perceptible in passing but is certainly provisional until the artifact is completed and the overall action has been performed and it is no longer negotiable except in terms of a subsequent artifact (Sinclair, 1985: 16).

Sinclair’s dynamic model of discourse in which discourse structure is seen as motivated by interactive factors such as purposefulness, directionality and writer’s

awareness of the reader(s) rests on his three-faceted theory of interaction and discourse structure - *planes of discourse, averral and attribution* and *encapsulation*.

The first facet of interaction in text in Sinclair's approach is that of *planes* of discourse. While Halliday describes meaning in terms of three functions, to Sinclair language has a dual function: "it is both a continuous negotiation between participants, and a developing record of experience" - the interactive and the autonomous planes of discourse (Sinclair, 1981: 71). The negotiating aspect highlights interaction and is called the interactive plane. The interactive plane involves "negotiating our affairs with each other". In defining the function of the interactive plane, Sinclair asserts that: "At any point the decisions about what effect utterances should aim at, what acts they should perform, or what features of the world they should incorporate, are decisions on the interactive plane" (ibid.: 71). In text, the interactive plane is realized by features such as prediction, anticipation, self-reference, discourse labelling, participant intervention and cross-reference, all of which help to present the text interactively.

The autonomous plane, on the other hand, refers to "a stage-by-stage tally of the record of experience" and "it is concerned with language only and not with the means by which it is related to the world outside" (Sinclair, 1981: 72). The discourse on the autonomous plane can thus be seen as related to the content and not to the interaction that is going on. He further describes it as "a string of verbalised content propositions, with appropriate logical connections" (ibid.: 74).



To further distinguish the two planes, Sinclair says that “the interactive segment depicts what is going on in the real world at the time of utterance, while the autonomous segment is a report about something that may include the current state of the real world but is certainly not restricted to it”. (Sinclair, 1985: 21). The following utterance has an explicit indication of the interactive plane: “I promise you that I’ll come tomorrow”: here the performative speech act “I promise you” is on the interactive plane whereas “I’ll come tomorrow” is part of the autonomous plane. (Sinclair, 1985: 20)

Although Sinclair treats the two functions as independent, he points out that in discourse they interact, for example, through an operation of “plane-change”. Plane-change occurs when the discourse which has been constructed on the interactive plane becomes part of the content of the autonomous plane. Sinclair argues that with each successive sentence, the interactive potential of the previous sentence is replaced with a new one which results in the new sentence pushing the preceding sentence down to the autonomous plane, from which its contribution can later be retrieved if needed. In this manner ‘plane-change’ has a major organising function in text. A typical realization of ‘plane-change’ in text is that of paraphrasing or reporting. For example, “by referring to a preceding utterance with discourse labels like question or reply, a speaker or writer encapsulates the old interaction in his new one, and the discourse proceeds, now, in a sense, talking about itself” (Sinclair, 1981: 74).

The relevance of Sinclair's model to the present study is that as has been seen many of features of the interactive plane are evaluative. The concept of plane-change which describes the development of the text in Sinclair is directly relevant to the movement of evaluation in text. For example, during explicit plane-change such as in the case of a report, the evaluation is 'pulled out' into a separate clause which comments on the proposition in the projected clause. In the following example "It may be misleading to run the regression in pooled, 1971, and 1980 data", the evaluative clause 'It may be misleading' comments on the to-infinitive proposition which follows by encapsulating it through the pronoun 'it' into something that can be commented on (the EE) - and hence it is the case of language talking about itself (Sinclair, 1981). Because in the report, the evaluation is carried by the projecting clause, it is the one that carries the dominant evaluation. In the analysis of evaluation in projections, the projecting clause carries the attributed value while the projected clause which is normally carried by the that-clause or the to-infinitive clause constitutes the evaluated entity (see the definitions of value and entity - the AV and EE - in Chapter 4).

Despite the differences between Halliday and Sinclair in terms of the number of language functions (three for the former and two for the latter) the approaches complement rather than contradict each other. For instance, the definition of the autonomous plane as "record of experience" is related to Halliday's experiential function (ideation). However, while one would have expected the interactive plane to be related to the interpersonal function, it appears to encompass both the interpersonal and, at least to some extent, the textual functions. For example, while

some features of the interactive plane are clearly interpersonal, such as Sinclair's exemplification of 'participant intervention'- "It is interesting to note that...", others have a textual function. A good example of this is discourse labelling such as "Heat is defined as...", which is also categorised under the interactive plane. Such a signal according to Crismore and Farnsworth (1990: 123) would be classified as a "code gloss" under textual metadiscourse and not interpersonal metadiscourse (see also Vande Kopple, 1985, on the distinction between textual and interpersonal metadiscourse). In short, many of Sinclair's interactive features can be seen to have both a metadiscoursal and text structuring role. This is consistent with other dialogical approaches which emphasise communicative purpose as a motivating factor for the construction and structuring of text (see Nystrand and Weilmert, 1991, on metadiscoursal elements in ensuring explicitness in text).

The second facet of interaction and discourse structure in Sinclair's approach is that of the concepts of Averral and Attribution (Sinclair, 1987; see also Tadros, 1993). According to the theory, text averral and attribution are basic notions of text organisation. Tadros argues that "the author of a non-fictional artefact...averts every statement in his or her text so long as he/she does not attribute these statements to another source - whether that source is other or self" (Tadros, 1993: 100). Attribution, on the other hand, "is the marked part of the text, marked as belonging to another source i.e. other than that of the text being created at the moment of the utterance" (ibid.: 104). Averral is realized either negatively through the absence of attribution or positively through the use of either personal pronouns or comments

and evaluations (ibid.: 104). Attribution, on the other hand, is typically realized through reporting.

The main contribution of Averral and Attribution in the present study is in the area of writer responsibility discussed in Chapter 3. Here a major claim is that the writer of the text potentially accepts or declines responsibility for evaluation by either averring a proposition or attributing it to a specific source. The avoidance of primary responsibility for a proposition through attribution is consistent with Sinclair (1987) who argues that attributions are reports in the text which have the effect of transferring responsibility for what is being said (compare Hunston, 1989, 1994, on the concept of *status* ).

The third facet of discourse structure and organisation in Sinclair's approach, which can be seen as basically accounting for connectedness of sentences in texture, is the concept of *encapsulation* (Sinclair, 1993, 1994). Sinclair's major argument here is that "a text is represented at any moment by a single sentence" and the default hypothesis is that :

each new sentence encapsulates the previous one by an act of reference. By referring to the whole of the previous sentence, a new sentence uses it as part of the subject matter. This removes its discourse function, leaving only the meaning which it has created (Sinclair, 1993: 7).

Encapsulation in the text is realized, on the one hand, by internal acts of reference such as logical acts ( e.g. 'and', 'also', and 'yet') and deictic acts (e.g. 'this very obvious ethos'). On the other hand, it is handled through features of the interactive plane such as *prospection*. Prospection "occurs where the phrasing of a sentence leads the addressee to expect something specific in the next sentence" (Sinclair, 1993: 12). Prospection in text is realized by, for example, aspects of advance

labelling such as attributions discussed in Tadros (1985, 1989, 1994), (compare Francis, 1994, on labelling). For Sinclair, the act of prospection implies that the writer commits him/herself to the fulfilment of the prospection and that the interactive force of the prospecting sentence extends to the end of the prospected sentence. The implication of this for text organisation is that encapsulation can mark the boundaries (openings and closures) of information units (see also Winter 1977, on prospection). One of the effects which can be attributed to encapsulation in Sinclair's theory is that of *plane-change* : as has been argued above, through explicit plane-change evaluation is pulled out into a separate clause, the 'it' in the evaluative clause encapsulating the projected clause into something that is talked about (i.e. the EE).

The theory of encapsulation is particularly relevant to the present study of the role of evaluation in the organisation of discourse, particularly in Chapters 5 and 6. At certain points in the text where the writer summarises the information, there is a tendency for the summary to coincide with evaluation. Thus while summarising a stretch of discourse, the author also tells the reader the point of view from which such information should be judged. The most important concept here is that of labelling as discussed by Francis (1986, 1994) and illustrated by the following example:

But the recognition that the very explanada of science (i.e. its 'facts') are not objective givens but rather products of social interaction is a more recent phenomenon.//

PROBABLY THE FIRST comprehensive statement of this *insight* was provided in 1935, not by a professional philosopher or historian but by a working scientist, the Polish medical bacteriologist Ludwik Fleck.

Source: Francis (1986: 50).

In the above stretch of text, *insight* expresses anaphoric reference to the information given in the preceding sentence. While it labels a stretch of discourse, it simultaneously evaluates it in positive terms: an *insight* is very important in science as it contributes to knowledge. It will be argued in the study that the writer in the text very often refers forward or backward to information in order to tell the reader what to expect (advance labelling or prospection) or what has gone on before (retrospective labelling) in the text and that this very often coincides with evaluation. In Francis (1986, 1994) and Hunston (1989, 1994) Relevance Markers, particularly retrospective labels, play a major role in encapsulation. It should be noted that, although Sinclair's model is based on sentence level analysis of text, the underlying principle of encapsulation is applicable to units higher than the sentence, for example, whole paragraphs or even whole sections of text. For instance a retrospective label can be an act of reference to a large chunk of information or even a whole text. An example here would be using *insight* as above to refer to a whole paper. This is examined in greater detail in the discussion on Scope and Harmony in Chapter 5.

### **2.3 Writing as Interactive**

The theory of multifunctionality of language provides a foundation on which other approaches to interaction in written discourse can be based. On the one hand, Halliday's Context of Situation shows the important role situations play in the production as well as the interpretation of meaning in a text. Halliday makes interaction central to text creation by arguing that "the essential feature of text, therefore, is that it is interaction. The exchange of meanings is an interactive process,

and text is the means of exchange” (Halliday, 1978: 135). Sinclair’s dynamic model of written text, on the other hand, offers an alternative dimension of emphasising the interactive nature of language by assuming that text structuring is motivated by interpersonal considerations such as purpose and intended reader. With this concept of multifunctionality of language in mind, I now turn to the discussion of three approaches to writing as interactive.

The first approach, the dialogical, to which Sinclair’s dynamic model of discourse is related, can be found in the works of analysts such as Rommetveit (1974), Bakhtin (1981), Chafe (1982) and Nystrand (1982, 1986). In dialogical studies both spoken and written language have a communicative purpose and are thus interactive. While in spoken discourse interaction is managed through aspects such as turntaking, in written discourse interaction is described in terms of meaning exchange between the writer and reader. Nystrand argues that in written discourse:

The interaction of interest is... an exchange of meaning or a transfusion of shared knowledge. In this sense, writers and readers interact every time the readers understand a written text. Conversely, the failure to comprehend means an absence of interaction. (Nystrand, 1986: 40)

It is this dialogical perspective that locates the meaning in texts between the writers and readers - the interactants construct meaning from the text through shared knowledge or ‘the meeting of the minds’, what Nystrand (1982, 1986) sees as *reciprocity*, which is at the heart of interaction. Nystrand further argues that, through *reciprocity*, the writer and the reader are bound by a communication *contract* or *pact* when approaching the text - the writer provides clues to help the reader comprehend

the text while the latter brings shared linguistic and contextual knowledge and interpretive skills to construct meaning out the text.

At the centre of dialogical studies is the argument that meaning in text is affected by the Context of Use which is determined by factors such as situational context, shared knowledge and overlapping purposes of the writer and the reader (see Nystrand, 1986, on the distinction between the context of production and that of use). The effect of context is made clearer by Nystrand and Wiemelt's assertion that meanings in text are:

never entirely 'predetermined'...rather they are continuously constructed by the reader in conjunction with the writer's efforts in some sociological context of use. Meaning, whether written or spoken, is always negotiated (Nystrand and Wiemelt, 1991: 35).

The recognition of the effect of 'the sociological context of use' on meaning by the dialogical approach to writing can be seen to be related to Halliday's Context of Situation. However while Halliday looks at 'context in the text' through the concept of register, dialogical studies focus on what can be seen as 'context for the text'-referring to the world outside the text which influences choices made in the text, such as the intersection of purpose between the writer and reader in the construction of meaning (see Nystrand and Weimelt, 1991: 30, on the effect of *purpose* on context).

A second perspective on written language as interactive is that of clause relations as developed by Hoey and Winter. A clause relation is defined as :

the cognitive process, and the product of that process, whereby the reader interprets the meaning of a clause, sentence, or group of sentences in the context of one or more preceding clauses, sentences, or groups of sentences in the same discourse. It is also the cognitive process and the product of that process whereby the choices the writer makes from the grammar, lexis and intonation in the creation of a clause, sentence, or



group of sentences are made in the context of other clauses, sentences, or groups of sentences in the discourse. (Hoey and Winter, 1986: 123).

This definition of a clause relation is important in that it takes into consideration the roles of both the writer and the reader of the text in the creation of meaning in discourse. At the heart of this approach is the view that a text consists of sentences or clauses which are connected through meaning relations, for instance, Matching relations (e.g. contrast, compatibility, general-example details, etc.) and Logical-Sequence relations (e.g. cause-consequence, evaluation-basis, instrument-achievement, etc.). These connections are often signalled in the text by the writer and/or inferred by the reader in the processing of the meaning of the text. According to clause-relations analysis of text the writer's lexical, grammatical and intonational choices are in part governed by the choices already made as well as those they are planning to make. Because the reader comes to the text with skills such as anticipation and prediction, it is important for the writer to allow for these and make appropriate decisions about what the reader knows which might not need explicit signalling as well as what he does not know which needs explicit signalling (see Hoey, 1983). Failure to make correct anticipation about what the reader knows, does not know, or needs to know can result in mis-signalling, over-signalling or undersignalling by the writer which might hinder comprehension and result in weaknesses such as 'rhetorical ineptness' (Hoey, 1983: 179-80). The main task of the writer in anticipating the reader's questions and signalling accordingly in the construction of the text is seen by Hoey (1988) as "writing to meet the reader's needs". This view of the task of a competent writer is similar to Widdowson's description of his own writing:

As I write, I make judgements about the reader's possible reactions, anticipate any difficulties that I think he might have in understanding and following my directions, conduct, in short, covert dialogue with my supposed interlocutor (Widdowson, 1979: 176).

The clause-relations model is generally useful to a discourse analyst since the writer of the text is normally not there to say what his/her intentions were in structuring the text the way (s)he has. If we assume that the task of a competent writer to be that described by Hoey and Widdowson above, we expect a well-written text to be appropriately signalled so as to express clearly the writer's intended meaning which will be correctly inferred from the text. It should be noted that, while to the analyst, inferring from clause relations is a conscious process, to the reader it is very often an unconscious one. Since the claim made in this study is that evaluation is all-pervasive and cumulative, correct interpretation of the point of the text depends on the interpretation of an evaluative expression in the light of other surrounding evaluations. This is where the clause relational perspective becomes important. The clause relations analysis can be used, for example, to separate dominant evaluation from a less dominant one or solve ambiguities such as those between conflicting evaluations. For instance, in the example below, there are two conflicting evaluations between (1) and (2).

ST2.1: H4 (1) *Age as evidence about why women became Nazis is not as important* for this paper as it is for studies lacking autobiographical data. (2) Yet at the same time *it offers the opportunity* to speculate about subconscious motivations....

In the above stretch, there is a Matching relation of Contrast between evaluations in (1) and (2). The main entity for both sentences *age* is negatively evaluated in (1) as **not important**, yet in (2) it is positively evaluated by **offers the opportunity**. The relation is introduced by the contrastive marker yet which introduces the positive

evaluation. Thus while the first evaluation seems to dismiss the importance of *age as evidence*, the second evaluation mitigates that by giving a positive function of the entity. The awareness of such relations is crucial in the analysis of evaluative movement through the text.

A third approach to interaction in writing is that found in Pragmatic studies on writing. For the purpose of this study, two main perspectives of this approach will be looked at - the Pragmatic and Language Processing principles, on the one hand, and the Speech-Act Theory of writing, on the other. The first approach is based on rhetorical principles guiding both spoken and written text. The first perspective, the pragmatic, is governed by rhetorical principles “motivated by conversational goals and has a problem-solving orientation” (Prideaux, 1991: 115). This is related to Halliday’s three metafunctions (Leech, 1983). Since the ideational is regarded as a grammatical and not a pragmatic phenomenon, only the two functions - interpersonal and textual functions - are found to be relevant. The interpersonal rhetoric, on the one hand, is defined as “a set of pragmatic principles, with their associated maxims, which serve both to express one’s attitudes and to influence the attitudes and behaviors of others” (Prideaux, 1991: 115). Examples of such principles are Grice’s Cooperative Principle, the Politeness Principle, the Irony Principle, and others. The interpersonal rhetoric is seen as more abstract in that it is based on social conventions (Leech, 1983).

The textual rhetoric, on the other hand, is oriented towards the construction and interpretation of text. It is defined as “a set of pragmatic principles ... with their own

maxims, which are invoked to construct a (spoken or written) text” (Prideaux, 1991: 115-6). The kind of rhetoric is governed by principles such as processibility, clarity, transparency, economy and expressibility - all of which are concerned with the cognitive processes which guide paradigmatic and syntagmatic choices in text construction (ibid.: 116-117). Although the textual rhetoric is based on the role of the writer in text production, Prideaux argues that the nature of its principles can also be seen to emphasise the writer’s sensitivity to the needs of the reader, and thus has a social function. In his own words:

the textual rhetoric does have an interpersonal aspect as well since, for example, the way the speaker chooses to encode some piece of information is in part a function of the speaker’s [or writer’s] evaluation of the hearer’s [or reader’s] knowledge as well as the inferences the hearer [or writer] can be expected to make (Prideaux, 1991: 117)

The above view of the pragmatic approach supports other views on writing by putting interaction at the centre of writing. First, the interpersonal rhetoric based on social conventions could be related to aspects of interaction such as ideology and genre: politeness has been used to account for the choice of evaluative features such as modality and hedging in constructing knowledge claims in ARAs (see Myers, 1989, on politeness in the ARA). The textual rhetoric is also consistent with the claims made by dialogical studies and other theories of interaction, for example, writing as a product/translation of cognitive processes - the syntactic and rhetorical choices in the text are based on what the writer’s intentions are as well as his/her anticipation of the reader’s needs.

The second perspective of the pragmatic theory of writing is that which employs Austin’s (1962) and Searle’s (1969) Speech-Act theory. According to this model of

interaction sentences in a written text are seen as utterances performing various speech acts (e.g. Bach and Harnish, 1979; Steinmann, 1982). According to the theory:

Linguistic communication is a cooperative venture between a writer (or a speaker) and one or more readers (or listeners). The writer performs certain speech acts, and the readers interpret them. Linguistic communication occurs when the two conditions are satisfied. First, the writer says something to readers, intends them to take it as a sign that he (or she) has a certain attitude (a certain belief or desire, say), and further intends them to recognize that he has this intention. Second, readers recognize the writer's intentions. (Steinmann, 1982: 298).

In speech-act terms in an utterance (in this case a sentence) the writer performs three speech acts simultaneously - an utterance act, locutionary act and illocutionary act - while the readers infer what the acts are. An utterance act carries the linguistic meaning, a locutionary act carries the operative meaning, and an illocutionary act (whether stating, requesting, promising or apologising) expresses the writer's attitude. A fourth act, the perlocutionary act, although intentional, is not performed but produces an effect upon the reader (see Bach and Harnish, 1979, on the details of how this works). Steinmann argues that the Speech-Act theory has made two major contributions to the study of writing: first it makes a contribution to the theory of effective expression. For example, by distinguishing between communicative effects and perlocutionary effects "speech-act permits a principled distinction between the problem of communicating with readers and the problem of getting them to do something"- the distinction between writing clearly and writing persuasively (ibid.: 307). Secondly, the speech-act model emphasises the role of the intended reader in discourse processing and thus addresses important issues in writing such as that of readability in text (ibid.: 314). The Speech-Act theory has been used by Sinclair

(1981, 1985) as the basis for his distinction between interactive and autonomous planes.

The three approaches to writing above - the dialogical, the clause-relations and the pragmatic perspective - all share a fundamental principle of interaction as meaning exchange between the writer and the reader both of whom share responsibility for the construction of meaning in a text. This principle is expressed by aspects such as the notion of writing as a cooperative venture in pragmatics, reciprocity and communicative pact in dialogical studies, signalling and inference in clause relations, and purposefulness and directionality in Sinclair's dynamic model of writing. The emphasis on the task of appropriate signalling of acts, purpose, or posture by the writer, on the one hand, and the reader's expectations, anticipation and recognition of the writer's intentions, on the other, are crucial to the understanding of the role of evaluation in written text - that of telling the reader what the point of the text is.

## **2.4 Language and Ideology**

The approaches to written text examined so far have defined interaction as a phenomenon that occurs when there is an exchange of meaning between the writer and reader in appropriate contextual situations: on the one hand, the writer has an intended purpose which (s)he expresses in writing - (s)he anticipates the writer's needs and thus signals his/her purpose accordingly to meet those needs. The reader, on the other hand, recognises the writer's intentions and makes inferences to construct meaning from the text.

While this picture of meaning as created by the writer and reader is very useful, it limits the scope of interaction to the level of text construction and interpretation by individual writers and readers. To get a fuller picture of how meanings are exchanged through the text, and in particular to understand how evaluation works, it is important to step back and examine interaction (or meaning exchange) within a larger framework of the social function of the text - to look at the text as a product of a particular ideological persuasion that in itself determines the *why* and *how* of saying in text.

#### 2.4.1 General Overview

There have been many discussions on the ideological determinants of meanings in text (e.g. Halliday, 1987, 1988, 1994b; Taylor, 1990; Fairclough, 1989, 1992b; Martin, 1992; Halliday and Martin, 1993; Hodge and Kress, 1993), but there are different opinions about the exact relationship between ideology, register and text. For the purpose of this study, Martin's (1992) definition of ideology provides a useful context for the approach on which my discussion is based. Martin sees ideology as:

a system of coding orientations which makes meanings selectively available depending on the subjects' class, gender, ethnicity and generation. Interpreted in these terms, all texts manifest, construe, renovate and symbolically realise ideology, just as they do language, register and genre (Martin, 1992: 581).

I would like to include another social variable to the above definition by Martin - that of a 'subculture'. This is because in texts I have used as data the 'coding orientations' are determined by or reflect the subculture of scientific writing (see Hunston, 1993a, on the notion of *subculture*). This will be made clearer by Section 2.4.2 below on the ideology of science and in 2.6.3 on genre-based studies of discourse.

At the heart of studies on the relationship between language and ideology is the recognition of the effects of society on the production and interpretation of meaning in a text. One of these effects is seen by Fairclough as:

the way in which particular languages and language varieties are valued or devalued according to the power of the users within the notion of a 'standard' variety legitimising and naturalising particular valuations. It is helpful to think of these effects as shaping conventions for particular discourse types, such as medical interview genre, which achieve a certain social stability, and which are drawn upon in discourse (Fairclough, 1992: 8 - 9).

The notion of 'power' relations as determinants of ideology mentioned by Fairclough above runs through most of the research on ideology in critical linguistics (e.g. Hodge and Kress, 1993). In fact, Fairclough argues that "power affects such discourse conventions by 'investing' them ideologically in particular ways" (Fairclough, 1992: 9). In his discussion of powerful and dominant social forces which set discourse practices and conventions, he also recognises the existence of less powerful forces which operate at lower levels of social interactions which might reflect variations from the dominant varieties. For instance unlike in tightly controlled power relations holding between doctors and patients emphasised in the standard varieties of medical interview genre, these days doctor-patient interviews are informally conducted such that "the interview is less tightly controlled by the doctor, and ideological assumptions about medical knowledge, and doctor-patient relations and social identities, are different" (ibid.: 9). Fairclough argues that power relations shape conventions in discourse and thus determine lower level linguistic choices such as the phonological and lexicogrammatical, and higher level discourse considerations such as 'appropriateness' (ibid.: 49-52). The role of power in



dominant varieties has already been referred to in this study under Tenor, for example, Brown and Gilman (1960) on ideological influence on T and V personal pronoun forms of address.

From the systemic linguistic perspective, ideology appears to play an important role especially in relation to the concept of Context of Situation and Culture. In his study, Martin suggests that context is expressed by three communicative planes - register, genre and ideology - within a hierarchical relationship. Register is expressed in the language content plane, register in turn expresses genre which in turn expresses ideology (it should however be noted that language is basically an expression form for all the three planes in that in order to analyse a text for genre, for example, we look for common patterns of 'saying'). The following diagram illustrates this hierarchical relationship:

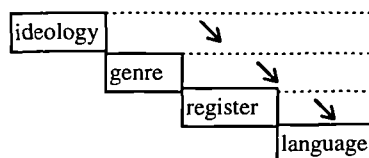


Figure 2.4: The relationship between communicative planes (Source: Martin, 1986: 227).

Hunston (1993b) also makes an important point about the relationship between language and ideology. She gives an example of the term *debt* which is seen in traditional banking terms as a 'bad' thing that should be avoided by reputable banking customers whereas from the perspective of a bank charging high interest rates it is desirable as a way of making profit. She argues therefore that in the latter context, the text from a bank "is unlikely to select the term *debt*, preferring the more

positively-evaluated *credit*" (Hunston, 1993b: 57). In this case, evaluation becomes not only the expression of personal judgement but that of ideologically-based meanings of the text. An important implication for understanding evaluation is that the value system of a particular society or culture influences text comprehension - thus, a text is more comprehensible to "insiders" than "outsiders" (see Dillon, 1992: 32 on these concepts).

Despite the differences of approach and emphasis on the relationship between language and ideology, it is clear that ideology has a major role in influencing meaning choices in language. For example, the fact that conventions and patterns of saying are ideologically motivated is important in interpretation of text as well as differentiating text or discourse types. This view has implications for the study of evaluation. Since evaluation in this study is seen to be register (or genre) specific, and both register and genre are expressions of ideology, it follows that the value system has an ideological orientation: evaluation is therefore not just a matter of personal judgement but also a socially controlled phenomenon. Thus the text will reflect these ideological norms and values through choices of what is being given value and how that value is expressed. The implications for research on evaluation is that the interpretation of evaluative discourse is dependent of awareness of the ideology that shapes such discourse.

#### 2.4.2 The Ideology of Science

Since the present study is based on the specialised genre of academic-scientific writing, the kind of ideology which is directly relevant is that of science, particularly that defined by sociological studies in science found in the works of researchers such

as Mulkey (1972, 1979), Latour and Woolgar (1979), Gilbert (1976), Gilbert and Mulkey (1984) and Bazerman (1988). Central to the ideology of science are issues such as the nature of scientific activity and the construction of scientific knowledge.

#### 2.4.2.1 The Nature of Scientific Activity

In order to understand what is involved in scientific research, it is important to look very briefly at the conventional - or what Mulkey (1979) calls the 'standard'- view of science found in many philosophical and historical writings such as those of Mitchell (1968) and Medawar (1969) in which science is seen as a process of discovery of truth about the natural world. The role of the scientist is simply to investigate the natural phenomena and then to produce an accurate and true account of the results of such investigation. This is the view that emphasises empiricism and objectivity in scientific research - genuine sciences such as astronomy, physics and biology are seen as different from other disciplines in that:

The conclusions of these sciences are derived from the facts, instead of being imposed upon them. Science represents phenomena not in terms of culturally contingent ideas, 'but in terms of their inherent properties' (Mulkey, 1979: 5).

To reflect this empirical nature of science, scientific writing is seen as a simple presentation of "cold, hard facts" (Bernhardt, 1985: 163): reports of scientific discovery therefore should avoid the personal influence of the scientist who, in Gilbert's (1976) terms, is seen as only a messenger relaying the truth from nature. This view of science has been expressed in many characterisations of the nature of scientific prose, such as those summarised by Bazerman (1984) :

1. the scientist must remove himself from reports of his own work and thus avoid all use of the first person;
2. scientific writing should be objective and precise, with mathematics as its model;

3. scientific writing should shun metaphor and other flights of rhetorical fancy to seek a univocal relationship between word and object; and
4. the scientific article should support its claims with empirical evidence from nature, preferably experimental (Bazerman, 1984: 163-4).

Recently, sociological studies such as those by Gilbert, Latour and Mulkey have emerged to give an alternative perspective on studying science. From the sociological perspective scientific research is seen as “a cultural activity rather than as the locus of certain knowledge” (Collins, 1985: 1). In Latour and Woolgar’s terms:

scientific activity is not ‘about nature’, it is a fierce fight to *construct* reality. The *laboratory* is the workplace and the set of production forces, which makes construction possible” (Latour and Woolgar, 1979: 243).

Similarly, Knorr-Cetina (1981) argues that scientific enquiry is constructive in terms of the “decision-laden character of knowledge production” and not descriptive (Knorr-Cetina, 1981: 152). When describing their approach to the study of science, Gilbert and Mulkey, for example, say that it is based on “describing how scientists’ accounts are organized to portray their actions and beliefs in contextually appropriate ways” (Gilbert and Mulkey, 1984: 14). This view can be seen as putting human activity and communication at the centre of scientific investigation by suggesting that research does not take place in a social/cultural vacuum: it is a cultural activity in which human intervention is an integral part.

Sociological studies have also emphasised that the major purpose of carrying out research is to share the findings with the larger community of scientists, which is normally done through the publication of those findings. Mulkey (1972) argues that if the findings of the research were not published, there would be no motivation to carry out research. According to Mulkey, the purpose of scientific research is to find

facts and to share these with the community of researchers so as to gain acceptance and it is this desire for acceptance that motivates the publication of research findings (Mulkey, 1972: 18). This has important implications for the presentation of scientific facts in writing. While the standard view emphasises that in scientific writing facts should speak for themselves, the sociologists disagree by suggesting that scientific facts are presented by researchers:

who control the language and presentation of their papers so as to present their work in a persuasive or favourable light, so as to advance the acceptance of their works and to further their interests as scientists (Bazerman, 1981: 164).

Swales concurs:

any vision we may have of the scientific-researchers working away in the lab or in the field and then returning to a quiet place to type up quickly the experimental report according to some stereotype format is decidedly at odds with reality (Swales, 1990: 117-8).

The view of scientific investigation as a cultural activity whose results should be communicated in a persuasive manner by the researcher to gain acceptance support the argument for focusing on interaction in written text. It is through this interaction among researchers that scientific knowledge is constructed. It is this construction of scientific knowledge which is the subject of the next section.

#### 2.4.2.2 The Construction of Knowledge

According to Meehan (1981), knowledge is constructed as a human creation and not as a characteristic of the world. It arises out of human needs and purposes and is measured against them. In his words he defines the theory of knowledge as based on assumptions about the relations between the individual and the environment:

The assumptions have to do with (1) the relation between human perception and external “reality”, (2) the nature of the words and the

concepts, (3) the character of the patterns that make up the substance of human knowledge, and (4) the ways in which claims to knowledge can be tested. (Meehan, 1981: 8)

Meehan sees knowledge as a human creation which is constructed through shared assumptions about the world (ibid.: 12ff). From this perspective knowledge does not take place out in the natural world but it is a product of people's perceptions and interpretations of the natural world. According to Meehan, knowledge is constructed through consensus which takes place as result of human communication, and in this case, communication between the scientist-writer and the wider community who read the research article. On the sociological view of science, Mulkey (1972) argues that it shows:

how new information is generated by social processes occurring within the research community and how members of this community come to accept or reject the information presented to them (Mulkey, 1972: 8).

The implication of this therefore is that in science knowledge is a social phenomenon - the result of an effort by the researcher to convince the community of scientists of the validity of his/her research. It also indicates the power relations which hold between the scientists and expert members of the community: the latter have the power to accept or reject new information presented to them. It is the consensus of this powerful group that defines scientific knowledge/fact (Myers, 1989).

#### 2.4.2.3 From Knowledge Claim to Scientific Fact

As indicated above, knowledge is constructed through communication between the writer and the community of researchers. This raises the question of the transformation of new information to scientific fact. In the pursuit of knowledge, the

scientists construct theories and models of investigation in order to interpret the natural phenomena and therefore come up with conclusions or interpretations - what are called knowledge claims. Gilbert defines a knowledge claim simply as a conclusion (or a set of conclusions) typically based on a particular model of investigation, and presented in a scientific paper (Gilbert, 1976: 294). Concerning when a claim is judged to be a fact, Myers presents an important goal of scientific investigation:

We can see scientists as building alliances that define what knowledge is: the statement of the individual becomes a fact when it is accepted and used by a consensus of the community (Myers, 1989: 5)

Similarly, Gilbert (1976) says about the transformation of a knowledge claim into scientific fact:

a knowledge claim can only be judged to be knowledge while some group of scientists accepts it as true; when the group disperses it reverts to being just a claim unless some other group also endorses it (Gilbert, 1976: 299 - 300).

This quest for the translation of a claim into knowledge becomes important in the construction of claims expressed in a research paper. Researchers have explored the important decision-making faced by researcher-writers to get their papers published in reputable journals and how the nature of the claim determines acceptance or rejection of such papers (e.g. Myers, 1985a, 1985b). Swales comments on the dilemma faced by writers in choosing the right kind of claim in these words:

The higher the level of the claim, the more likely that it will involve contradicting large bodies of the relevant literature and will challenge assumptions embodied in important ongoing research programs. On the other hand, the lowest level claims may contradict nothing, but may also add very little to what is accepted and established within the given research field (Swales, 1990: 117).

In a text, the level of claim is determined by the linguistic expression which introduces it. For example a fact may be expressed by factual statements whereas claims are expressed by a variety of negotiating statements. Almeida (1992) argues that factual statements express:

true facts about the world if those facts have been accepted as part of a culture's or society's knowledge base, i.e., what is commonly considered to be a fact in this sociocultural grouping. (Almeida, 1992: 237)

Hunston (1989) examines different kinds of claims which can be made in a research article which may be arranged along a cline of facticity based on Latour and Woolgar (1979):

Type 5: a statement 'corresponding to a taken-for-granted fact';

Type 4: an expression of a relationship between A and B which is 'uncontroversial' but which is 'by contrast with type 5 statements, made explicit';

Type 3: statements assessing the certainty or reliability of other statements, by an expression such as 'is assumed to be' or by attribution to sources through references. The acknowledgement of the agent in the process of scientific reasoning denies the independent facticity of the embedded statement.

Type 2: statements which seem to 'construe claims rather than established facts'. They contain 'modalities which draw attention to the generality of available evidence (or lack of it)';

Type 1: 'conjectures or speculations'.

Source: Hunston (1989: 32).

Although Hunston argues that these categories are difficult to apply systematically to knowledge claims, they are potentially useful in the judgement of the strength and reliability of knowledge claims. For instance, a type 5 claim may be expressed by a categorical assertion whereas a type 1 claim may be signalled by using a low certainty expression, or by using self-attribution in a way that is intended to be restrictive (see Chapter 3 in this thesis).



In order to get their claims accepted, there is a need for researchers to link these to established research. This explains why in addition to their own claims, researchers refer to claims by other researchers which have either been accepted as scientific fact or are some way towards being accredited as part of existing knowledge.

## **2.5 The ARA as a Vehicle for Ideology of Science**

Studies on the ideology of science, more especially the sociology of science, have argued for scientific activity as a purposeful activity whose findings or conclusions are meant to be communicated by the researcher to the wider community for recognition and acceptance. It is only with this communication of new information that interaction between the researcher and other scientists takes place and therefore knowledge is constructed. As has been indicated, the presentation of knowledge claims is seen as one of the central activities for academic researchers. The primary means by which such claims are advanced is, of course, the ARA. Before going into the role of evaluation in this genre, it is best to look at how different researchers have investigated the ARA as a vehicle for knowledge claims, as a basis for looking more specifically at evaluation in ARAs in a later section.

Many researchers have argued for the importance of the ARA over other research process genres in terms of its reflection of the ideology of science both linguistically and rhetorically. Commenting on this important role, Swales (1990) says that:

In many scholarly or research-driven discourse communities, the RA is the key genre both quantitatively and qualitatively. There is also little doubt that even in a state of considerable ignorance, we know much more about the RA than other research-process genres (Swales, 1990: 177).

Central among its functions, the ARA is a forum for negotiating knowledge claims through argumentation and debates. As Yearley (1981) points out:

formal research papers should be regarded primarily as contributions to scientific debates. They take the form of arguments, aimed at persuading the reader of the correctness of a specific point of view (Yearley, 1981: 410).

This view explains why the ARA can be seen as a persuasive genre. In its function of constructing knowledge in a highly competitive field in which there is a struggle for recognition through publication, researchers point out that the ARA has to go through a long process of drafting and redrafting until the final version is reached (e.g. Hunston, 1989). From its first draft to its final version, the ARA is seen to emerge from a 'battle' between various authors, readers and critics (see Knorr-Cetina, 1981: 106). For instance, after the struggle of writing the paper, it is first presented to editors and reviewers who act as referees before the final version can be presented to the scientific community who can either accept or reject this new information. Hunston (1989) says that "during this battle, details are removed, claims and evaluations are muted, so that 'the final version is a consistent understatement of the first'"(Hunston, 1989: 34).

This struggle for acceptance has been shown to have a great impact on the final version of the ARA. The researchers at times find themselves having to change their original claims in order that their papers fit in with the existing body of accepted knowledge in the field. This is demonstrated by Myers' (1985a) example of two biologists who in an attempt to get their papers published were faced with the decision of choosing between high-level or low-level claims and eventually had to

settle for low-level claims. Similarly, Mulkey (1972) gives an extreme example how American scientists in the 1960s had to change not only their claims for knowledge but also their selection of problems and methods. He says that the scientists had “to select problems the solutions of which will result in recognition” (Mulkey, 1972: 28). The influence of the scientific community on the writer’s knowledge claims is also expressed by Myers’ reference to other research:

In Latour and Woolgar’s terms [the scientist-writers] have had to add modalities and move their claims away from fact-like status. In Pinch’s terms, the authors, in this evidential context, have to settle for claims of somewhat less externality than those they had first proposed. They have to leave out their models, and this could be a loss to them, because whatever words have been excluded at this point, as the article goes into print, cannot be part of the author’s claims (Myers, 1985a: 623).

This two-way process of knowledge construction between the researcher and the wider community has also been seen in terms of both linguistic and of text organisational features based on conformity by the writer to the demands of acceptable standards of the genre. Bazerman (1984) compares the ARA with what he calls ‘contemporary summary genres’ such as textbooks and abstracts by saying that while the latter are “removed from the struggle of scientific persuasion”, the article is not written within a “free play of persuasive imagination” (Bazerman, 1984: 164). He suggests therefore that all sociological studies of the ARA should recognise:

the role of stylistic and grammatical acceptability which implies conventions that precede any particular article and helps define what constitutes an acceptable scientific paper (Bazerman, 1984: 164).

Similarly, Swales distinguishes between the ARA and other research genres such as grant proposals, abstracts, theses and dissertations, research presentations and speech genres, and shows how the ARA conforms to recognisable conventional patterns which makes it easy to define it in terms of pattern and structure, which is not the

same with other genres (Swales, 1990: 177ff). He however points out that the ARA can be seen as central to research and that it has a dynamic relationship with other research genres. For example, a conference paper may be presented as work in progress which might later be written up as an ARA.

Researchers argue that research articles “follow a conventional style or format” (Gilbert, 1976: 285). The genre determines the way people carry out the research whose findings are later presented in the form of the research article. This is supported by Swales who asserts that:

The fact that the research article initially appears within the covers of a particular journal means, of course, that it is not an independent *sui generis* text - some fixed and inexorable inscription of reality - but rather an end product that has been specifically shaped and negotiated in the author's efforts to gain acceptance. (Swales, 1990: 93)

Conventions of style or format which characterise the ARA are discussed in Section 2.6 below.

Despite so much research by sociologists and linguists alike on the ideology of science, however, most of it has concentrated on the analysis of the ‘hard’ sciences, for example, biochemistry, physics, engineering - with very little work on the human or social sciences (in sociological studies, see, for example, Latour and Woolgar, 1979; Mulkay, 1979, Bazerman, 1981; and in linguistic studies, see, for example, Swales, 1981, 1984; Dudley-Evans, 1986; Myers, 1985a, 1985b, 1989; Hunston, 1989). In this study I make an assumption that the ideology of science can also be applied in the study of non-science ARAs such as those in the human and social sciences, and hence I use this assumption in the analysis of data from four disciplines

- History, Economics, Applied Linguistics and Psychology. In this discussion therefore I talk about the academic research article (ARA) as:

one genre in the scientific world, despite the fact that particular disciplines differ somewhat in their conventional realisations of it. If we insisted that the research community in each discipline has its own separate genres, we would miss an important generalisation concerning scientific activity (Mauranen, 1993: 5).

This view of the research article is supported by Widdowson (1983) who puts ARAs in the same generic category, as a kind of 'macrogenre'. It is on the basis of the above generalisation about the ARA that the ideology of science model becomes an ideological foundation within which the study of evaluation in the present data is based. This assumption is further supported by recent sociological and linguistic research in which the scientific model is used in the study of non-science ARAs. For example, in sociological studies, Knorr-Cetina (1981) finds the criteria for differentiating between natural and social sciences are no longer applicable in that they can be described as 'local idiosyncrasies of research' which can also be used to differentiate between papers of the same discipline such as those within the natural sciences themselves. She argues that:

the situational logic of natural and technological science research appears similar to the situational dynamics inherent in social method, and that the similarity is strengthened by the apparent universality of interpretation in both social and natural science method (Knorr-Cetina, 1981: 358).

This universality of interpretation across ARAs is exemplified in Bazerman's (1981) comparative study of three articles from molecular biology, sociology and literary criticism using the same model of analysis. For Bazerman research-articles irrespective of discipline are knowledge-bearing documents and thus require a common model of analysis (Bazerman, 1981: 364). In linguistics, Hunston (1994)

supports the use of scientific model on a psychology article - the SUTY text - by arguing that:

Although, of course, the nature of the 'object' of investigation in the social sciences is somewhat different from that investigated by scientists, two central concerns remain the same: that models must be tested against observation, and that the language of the article must be objective and impersonal (Hunston, 1994: 192).

The linguistic studies enable us to understand how the persuasion is carried out in the ARA. For example, Thompson (1993) argues that the composing process in science is not merely an application of structural and linguistic devices to a body of experimental data but is underpinned by the need to convince members of the scientific-academic community of the validity of the research methods and findings. Studies of scientific texts therefore reveal the presence of "text acts" (see Bernhardt, 1985, on rhetorical acts). Thompson argues that:

These rhetorical acts...occur at certain junctures in the scientific text that constitute sites of authorial intrusion - places where the scientist/writer feels the need to justify choices, decisions, interpretations, and suggestions (Thompson, 1993: 107).

Situating the ARA within the ideology of science helps to give a clearer picture of written text as interactive. This implies that the type of interactive features which characterise one text is determined by the type of ideology the text is trying to portray. The ideological perspective is very important in the study of evaluation, since the value system of any subculture is an integral aspect of interaction.

## **2.6 Studies of the Academic Research Article from Different Angles in Linguistics**

The linguistic and ideological evidence for written text as interactive presented above has placed the ARA at the centre as a knowledge-bearing and persuasive genre in which knowledge claims are presented in order to influence or change attitudes, and evaluation will be shown to be an integral part of the persuasive function of the ARA. Before looking at evaluation in detail, it is important to review the literature on the ARA in order to examine what is known so far about this specialised genre with the hope of establishing how evaluation fits in to this overall view of scientific-academic writing. The discussion will concentrate on general linguistic and rhetorical studies of the genre.

### **2.6.1 Lexicogrammatical Approaches**

Much research on the ARA has referred to a style of writing peculiar to scientific articles. A common realization of the scientific style is that of lexicogrammatical choices such as a higher proportion of passives and nominalisations than in non-scientific prose (e.g. Swales, 1971; Davies and Greene, 1984; Horsella and Sinderman, 1988; Nida, 1992; Tarone et al., 1981). Other features are sentence length, verb forms and clause types (e.g. Barber, 1962; Huddleston, 1971).

Many of the studies, however, do not offer a systematic way of accounting for these common linguistic occurrences: this makes it difficult to look at these occurrences as a generalisable feature applicable across scientific articles. Much of the research on linguistic features appears to have a pedagogical goal in that it emphasises the use of

such features in devising writing models in ESL (e.g. Swales, 1971; Davies and Greene, 1984).

Some of the research on common lexicogrammatical occurrences in scientific prose, however, has moved on to try and establish motivation for such features. Tarone et al. (1981), for example, suggest that the choice of the active voice in a scientific article may be motivated by the need to express the writer's personal intervention at certain points such as in the description of procedure. The purpose of the active voice at these points is "to indicate points in the logical development of the argument where the writers have made a unique procedural choice" (Tarone et al., 1981: 135).

Another example is that of tense choice which has been associated with the generality of a statement (Lackstrom et al., 1973; Oster, 1981, Swales, 1990). Swales suggests specifically that present-perfect-past in reporting verbs marks increasing distance of the writer from the finding reported (Swales, 1990: 154). A further aspect, that of pre-modification, is seen by Dubois (1981) as indicating what the writer assumes about the knowledge of the reader. Explaining how this is realized in text, Hunston suggests that:

It is acceptable, for example, for a NP to have a definite article and to carry weighty pre-modification, even though its referent is not retrievable from the preceding text, if it describes a 'known fact' (Hunston, 1989: 17).

Some of the research emphasising motivations for lexicogrammatical choices in scientific writing is pedagogically-oriented. Researchers here look at common syntactic features of scientific prose as characterising text in terms of, for example,



register, readability of texts and so on. Among such researchers is Nida (1992) whose analysis of journal articles from Science, Anthropology and Language demonstrates how complex sentence constructions and highly technical language may hinder the reader's comprehension of the text. Another example is that of Carter (1990) who compares reports written by university undergraduates and teachers and lecturers with those in business and industrial contexts. Analysing these in terms of what he calls 'linguistic tendencies' such as passives, tense, personal pronouns, modality forms, and verb forms (i.e. intransitive verbs), he concludes that linguistic and stylistic differences between these two types of writing implies that the writing process in schools and universities barely prepares the student for report writing outside the EAP classroom (Carter, 1990: 189). A further example is that of Barton (1995) who studies contrastive and non-contrastive connectives such yet, of course, however, unfortunately and rather and discovers that these are used as strategies for expressing claims and counter-claims in the ARA, and that these could be included in writing models for ESP classrooms.

Although many researchers on the lexicogrammatical choices in ARAs recognise higher-level discourse goals which motivate these choices, they mostly do not discuss this important point in detail, neither do they provide a systematic way of using these common occurrences to make generalisations about texts beyond those they have used in their data. Except for the works of Nida (1992) and Barton (1995) above, much of the research seems to suggest that the features are conventional - it is the way things are done with virtually no reference to other variables which might affect such choices.

## 2.6.2 Structural Approaches

Besides the general linguistically-oriented studies, there are other studies which focus on the structure of the ARA. According to this approach, the ARA follows a particular conventional style or format. A large body of research in this field comments on the four-part Introduction-Method-Result-Discussion (IMRD) structure of a scientific article (e.g. Hutchins, 1977; Swales, 1981, 1990) each element of which can be used as a model for teaching scientific writing. Within this conventional structure, there are different discourse patterns, for instance, that of ‘oppositions’ found in Hutchins (1977). Hutchins suggests that scientific texts consist of a pattern of oppositions, in his words, “a network of interlocking, embedding, overlaying and underlaying oppositions” which work at various syntagmatic levels, with the first part of the opposition predicting the second:

- (i): Oppositions connected with content, for example, problem-solution, experiment-result, question-answer, etc.;
- (ii): Oppositions connected with semantic progression, for example, condition-consequent, denial-assertion, antecedent-subsequent, etc.; and
- (iii): Oppositions connected with thematic progression, for example, theme-rheme, given-new, topic sentence-commentary, etc.

Source: Hutchins (1977: 35).

Although Hutchins’ model offers an important theoretical insight into text structure, his model of oppositions does not seem to be unique to scientific text. For example, the oppositions are similar to Hoey and Winter’s clause-relations model which has been applied to both scientific and non-scientific texts (see examples of the texts used in Hoey, 1983, and Hoey and Winter, 1986). Another problem with the model is that of the difficulty related to its systematic application across texts. Commenting on this difficulty, Hunston (1989) argues that this abstract approach:

begs some important questions, notably what constitutes a ‘level’ in his terms, how one is to recognise the first part of the pair, whether the

second part is expected to occur immediately or eventually, and whether the movement can be seen in terms of patterns of more than two ‘moves’ (Hunston, 1989: 22).

An interesting model of scientific text structure is that proposed by Hill et al. (1982) which although set within the conventional IMRD structure seems to take on board the discourse function of individual sections of the ARA. Using a paper from psychology, the authors find three major sections of the ARA: Introduction, Procedure (under which Method and Results are subsumed) and Discussion as illustrated by Figure 2.5 below. According to this model, the Introduction section involves reference to the field which is followed by the introduction of the experiment carried out. Describing what takes place in the Introduction section, the authors argue that “research papers make a transition from the general field or context of the experiment to the specific experiment by describing the inadequacy in previous research that motivates the present experiment” (Hill et al., 1982: 335). The Procedure section focuses on the investigation itself whereas the Discussion mirrors the Introduction by moving from specific findings to wider implications for the research. This progression of the ARA is illustrated by the hour-glass diagram in Figure 2.5 below.

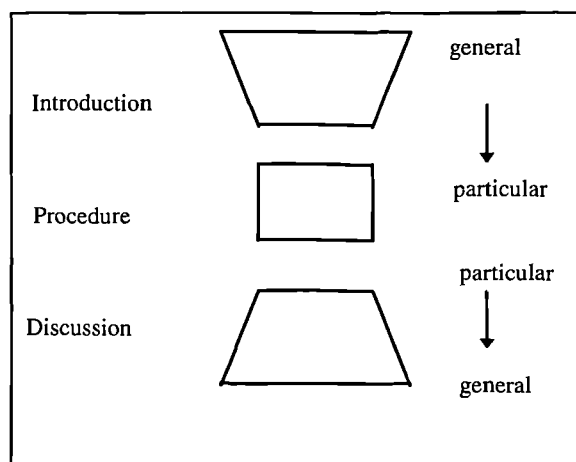


Figure 2.5: The overall organisation of the research paper (Hill et al., 1982: 335)

This 'general- particular - general' pattern of movement of the ARA is echoed by researchers such as Heslot (1981) who, using 16 ARAs from the journal of *Phytopathology*, examines the distribution of verb tense, voice and 'person markers' across the IMRD structure. For instance, he finds that the verbs in the Method and Results sections are typically in past tense form whilst those of the Introduction and the Discussion are distributed equally between the past and present tenses (see also Adams-Smith (1984) on the distribution of 'author's comment' across the IMRD structure in six medical research papers).

Despite some differences in terms of the type of investigation and findings, there appears to be a consensus among many writers who use lexicogrammatical signals to identify functions of different sections of the articles that the Introduction and Discussion sections are discursive whereas the Methods and Results sections concentrate on the presentation of facts. For example, West (1980) claims that that-nominal structures commonly occur in the Introduction and Discussion sections, with very few in Method. He attributes this phenomenon to the fact that "that-nominals are used when making claims about other statements rather than simply making statements" (West, 1980: 486-7).

While the studies above such as those of West (1980), Hill et al. (1982), Heslot (1981) and Adams-Smith (1984) can be seen as rhetorical in approach, they seem to ignore factors other than simple convention which might influence the progression of the research paper. They seem to suggest that it is how things are done in the genre with not much reference to the roles of the writer and reader in the interaction which

takes place through the text. Nevertheless, many of the findings of the structural approach are consistent with the concerns of the present study except that the latter brings an additional dimension of writer-reader presence to the description of what is going on in the discourse and structure of the ARA.

### 2.6.3 Schematic-Rhetorical Approaches

To begin with, it is important to note that I distinguish between the structural studies in Section 2.6.2 and the rhetorical studies in this section mainly on the basis of emphasis and terminology. As has been argued the former studies are also rhetorically-inclined, but they tend to look at structure, for example the IMRD progression of the ARA, in terms of simple convention and in so doing play down or ignore the emphasis on aspects such as 'rationale' and 'communicative purpose' which forms the cornerstone of the studies in this section. Genre-based studies are particularly relevant in providing the basis for one of the major assumptions in the present study, that the ARA is a specialised genre within a broad field of scientific-academic writing, and that the nature of the evaluation as well as its expression in the data used are characteristic of this genre: evaluation is assumed to be genre (and register) specific (see Hunston, 1989).

This section is specifically devoted to those studies which are based on Swales' genre-based theory of analysing text (see Swales, 1981, 1984, 1990). The term genre is defined by Swales as:

a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of

the discourse and influences and constrains choices of content and style.  
(Swales, 1990: 58).

According to Swales, “the rationale behind a genre establishes constraints on allowable contributions in terms of their content, positioning and form” (ibid.: 52) and this “thus determines what Martin (1985) refers to as the schematic structure of the discourse and constrains lexical and syntactic choice” (ibid.: 53).

In the same way as the lexicogrammatical and structural approaches in sections 2.6.1 and 2.6.2 above, the genre-based studies emphasise common occurrences of lexicogrammatical and discourse features among a group of texts, often from the same discipline. However, unlike structural studies, genre-based studies emphasise awareness of audience and purpose as the motivating factors for linguistic and structural features of a text. The most notable research is that of Swales’ (1981) Move Theory. The theory has been used in the analysis of introduction and (to some extent) discussion sections of ARAs (Swales, 1981, 1984, 1990; Dudley-Evans, 1986; Hopkins and Evans 1988; Bhatia, 1993). According to Swales, each stage of the ARA introduction serves a specific rhetorical function or performs a specific rhetorical act. Swales (1981) and Dudley-Evans (1986) identify four basic Moves of the introductory paragraph of the ARA. Move 1 is Establishing the Field, and this can be realized, for example, by showing centrality of the topic or stating current knowledge of the topic; Move 2 is Summarising Previous Research; Move 3 is Preparing for Present Research : it can be done by either indicating the Gap, question raising or extending a finding; and Move 4 is Introducing Present Research: it can be done by either giving the purpose or describing present research. With more

developments in this area, it has been argued that Moves can have either Acts or Steps subsumed under them (see Swales, 1990: 192-3, on the Move-Step Analysis). The Move Theory has now been extended to the Results sections which have for a long time been excluded from the analysis because they have been regarded as “the bastion of “cold” factual reporting” (Thompson, 1993: 107). Some of the researchers in this field are Weissberg and Buker (1990), Thompson (1993) and Brett (1994). The argument for the exploration of the Results section from the rhetorical perspective is that results too have a persuasive purpose because this is where writers “make their knowledge claims through representation, explanation, and interpretation of numerical data” (Brett, 1994: 47-48). In her analysis of biochemistry articles, Thompson (1993) identifies seven moves which she labels as: (1) Methodological justifications, (2) Interpretation of results, (3) Evaluative comments on data, (4) Citing agreement with preestablished studies, (5) Pointing out/explaining discrepancies, (6) Calls for further research and (7) Admitting interpretative perplexities. It is important to note that all the categories identified by Thompson are related to persuasion in one way or another. Brett (1994), on the other hand, divides the results section of Sociology articles into what she calls communicative categories: (1) Metatextual categories, (2) Presentation categories and (3) Comment categories; which are realized by lexical signals. Although Brett’s categories are not as obviously linked to interaction as those by Thompson, the definition and illustration of the first and third categories suggests their interactive nature. For example, Brett defines Metatextual categories as “guiding the reader to other parts of the writing” whereas Comment categories are:

those in which authors offer their own interpretation of, or comment and opinion about the results already presented .... Their use is author-personal, subjective, and not readily suggested by the data, although they

are as important to the argument as the Presentation categories (Brett, 1994: 52).

While metatextual and presentation categories are not directly interactive, the comment categories are clearly interactive and many of the examples given by Brett are evaluative. Examples of comment categories are:

- (i) *I suspect* ex-offenders are more aggressive *because...*
- (ii) *Consistent with* Kleper, Nagin and Tierney (1983) ...
- (iii) *As expected*, occupational dissimilarity has a significant positive relationship...
- (iv) This *implies* that such women's satisfaction might *decline over time*.  
Brett (1994: 53 -54).

Judging from the above examples, comment categories are metadiscoursal in function and in fact some such as 'I suspect', 'consistent with', 'as expected' and 'implies' are evaluative in the sense of fitting in with the values and entities used in science (see Chapter 4 on the categories of value).

The notion of rhetorical functions - whether they are referred to as Moves, Acts or Communicative categories - represents a top-down processing of meaning in a text. By assuming the concept of common communicative purpose as motivating common linguistic occurrences in a specific group of texts, the analyst is able to look at how such a purpose (or function) is reflected in the language of such texts. (S)he is therefore able to devise a systematic way of handling the analysis of a large number of texts by making generalisations about the characteristics of the genre of those texts. For instance, assuming the existence of the genre of the ARA has enabled me to look at frequent occurrences of certain evaluative features across articles used as data and such occurrences have been interpreted as characterising the value system of the genre.



## 2.7 The Study of Evaluation

The review of various approaches to the study of written discourse ranging from linguistic to ideological viewpoints makes it possible to establish a framework for looking at evaluation in this study as both an expression of personal judgement as well as a societal or ideologically-driven feature of interaction. Before reviewing relevant literature on evaluation, I begin by using a working definition of evaluation as an expression of attitude (or giving opinion) about something. This is based on Hunston (1994) who says that “to evaluate something is to have an opinion about it, particularly in terms of how good or bad it is” (1994: 191) or that evaluation is “anything which indicates the writer’s attitude to the value of an entity in the text” (1993b: 58).

Taking the concept of evaluation as attitude, I will then look at various views of how attitude is expressed in language. There are three basic views on evaluation: evaluation as ‘good’ or ‘bad’, evaluation as modality (what may be called the narrow view of modality) and evaluation as a combination of modality and ‘good’ or ‘bad’ (what may be called the broad view of modality). These three basic views are discussed in turn in order to make clear exactly what will be counted as included in ‘evaluation’ for the purposes of the present study.

### 2.7.1. Evaluation as ‘Good’ or ‘Bad’

The notion of evaluation as ‘good’ or ‘bad’ is defined by Jordan (1984) who sees the terms as referring to:

any information about something ... that tells us how good or bad that thing is, or that is an expression of personal assessment. Evaluation tells us how ‘good’ or ‘bad’ something is in respect of its features, such as: its ability to overcome a defined problem, its importance, its solvability (of

a problem), its clarity (of an essay), its efficiency (of an engine), its effectiveness (of a law), and so on. That is, everything has certain attributes specific to the class of thing to which it belongs ... and an evaluation of it can contain information about any of these attributes to tell us how 'good' or 'bad' it is, often in comparison with other similar things (Jordan, 1984: 89).

From this perspective, evaluation in language has often been seen as primarily a lexical matter, more especially in the field of lexical semantics.

### 2.7.1.1 Lexical Semantics

Semanticists have argued that one of the main meanings or senses in language is that of attitudinal or affective meaning. Words which carry such meaning are often described by the term 'attitudinal lexis' (see Cruse, 1986; Leech, 1981, 1983; Lyons, 1977, 1981). From this perspective, words express positive or negative feelings, for instance anger, dislike, joy and so on. An example given by Leech (1981) is that of the '-isms', for example, 'capitalism' and 'communism', which were associated with either negative or positive feelings depending on whether one was from the Eastern or Western Block country during the Cold War era .

Attitudinal lexis is also discussed by systemic linguists such as Halliday (1985a) and Poynton (1985). Halliday discussed the term very briefly under attitudinal epithets within the nominal group. According to Halliday, epithets serve as modifications of the Head/Thing within the nominal group structure by indicating the quality of something. He distinguishes between those epithets which are potentially defining by expressing an objective property of something (which he calls experiential epithets) such as the word *long* in 'a long train' and those which are non-defining but are "an

expression of the speaker's subjective attitude" towards that thing such as in *mighty* in 'along came a *mighty* train' (Halliday, 1985a: 163). He calls the latter type attitudinal epithets and says that they "represent an interpersonal element in the meaning of the nominal group" (ibid.: 163). Poynton (1985) also examines words in English which encode not only the denotative meaning but also reflect the speaker's particular world views, what Martin (1988) calls 'lexical conspiracies'. Examples of these are words which reflect sexism such as the diminutive address forms and the type of address forms characterising men and women (Poynton, 1985). Both Halliday and Poynton's studies are based on explicit signalling of attitude.

Another important dimension to the notion of attitude as 'good' or 'bad' is that found in two models of rhetorical structure and discourse patterning - Labov's narrative structure and Hoey's Problem-Solution pattern. Although these two approaches share a common view of evaluation as 'good' and 'bad', they however differ from lexical semanticists above in that they do not restrict evaluation to simple lexical expressions but also accept a much wider view of what counts as evaluation. It is to these approaches that I now turn.

#### 2.7.1.2 Evaluation in Narrative Discourse

In narrative studies pioneered by Labov (1972), evaluation is described as one of a series of stages in the production of a story. Labov suggests that a fully formed oral narrative of personal experience has a six part structure: Abstract-Orientation-Complicating Action-Evaluation-Resolution-Coda. These parts can be seen as answers to audience questions as illustrated by Figure 2.6 overleaf.

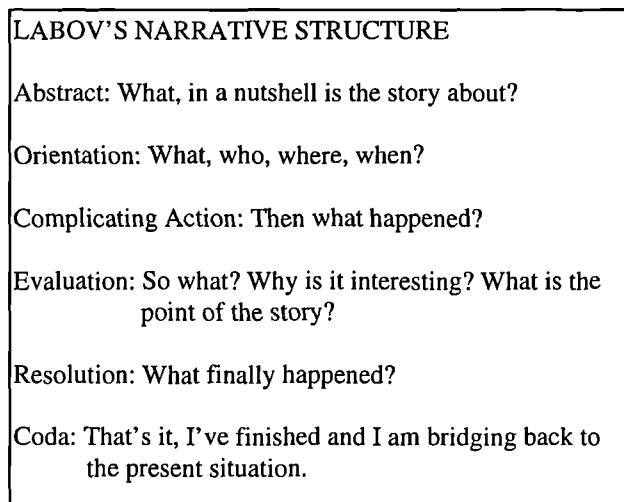


Figure 2.6: Source: Harris, J. (1993: 34)

According to Labov, evaluation is a label for a stage in the schematic structure of the narrative and it very often forms part of the Resolution. This element is seen by Labov as “perhaps the most important element in addition to the basic narrative clause” (ibid.: 366) and he defines it as:

the means used by the narrator to indicate the point of the narrative, its *raison d'être*: why it was told, and what the narrator is getting at (Labov, 1972: 366).

Labov argues that at certain stages in the narration process, a competent storyteller will suspend the story by telling the reader the point of the story - to evaluate it. For Labov, therefore, evaluation represents the non-narrative part of the story. In a narrative text evaluation is realized by:

a number of evaluative devices which can be distributed at various points throughout a narrative, although they are commonly positioned before the Result. The Evaluation is a kind of self-Receipt through which the speaker gives the meaning of the narrative. It is a signal as to how the teller intends that others should receive the telling (Cortazzi, 1993: 46-7).

Among these devices are comparators, intensifiers, correlatives, explicatives, which can be distributed at various points throughout the narrative although they tend to concentrate on the evaluation part of the narrative text (Labov, 1972).

For most of the researchers on narrative structure evaluation is marked by 'deviant' lexicogrammatical structures. This view is expressed in Polanyi's (1978) definition of evaluation as:

anything which departs from the norm of the text acts evaluatively by drawing attention to itself and also to the material which surrounds it. For example, a descriptive interlude, event, or series of events may act evaluatively in a largely monologic or dialogic text because differing from the reported speech norm of the text, it calls attention to itself and the information it encodes (Polanyi, 1978: 38).

According to this view "What is functioning evaluatively in a given text is the language which stands out from the rest of that particular text" (ibid.: 40). This concept of the deviant nature of evaluation is carried further by Hunt and Vipond (1986) who describe evaluation from the reader's perspective. These authors describe the evaluativeness of text elements in terms of their evaluative force which is "a consequence of things not quite 'fitting' " (Hunt and Vipond, 1986: 58). They emphasise the importance of the interpretive skills that the readers use for comprehending the story - the readers prepare 'mental spaces' into which incoming information will fit; if it does not fit then there is an experience of surprise, and of expectations not fulfilled. To the reader, therefore, what is evaluative "is that which is not normally expectable; the unpredictable, surprising, inconsistent, or incongruous" (Hunt and Vipond, 1986: 57). Although Hunt and Vipond identify signals of evaluation in lexical terms, for instance with discourse evaluations - metaphor, simile, metonymy, parallelism, hyperbole - they argue that:

none of these devices are evaluative *per se*, however: their evaluative force derives from the way they are used in a given context; that is, from their relationship to the local norm of the text (Hunt and Vipond, 1986: 59).

The authors give three ways in which a discourse may deviate from the 'norm':

- (i) Discourse evaluations: stylistic patterns, rhetorical figures, diction - that are incongruous with respect to the local norm of the text;
- (ii) Story evaluations: when an incongruous element in a narrative is part of the story-world - that is an event, setting, or character;
- (iii) Telling evaluations: instances in which the narrator makes meta-narrative comments concerning the storyworld or the act of narrating. Such comments are made from outside the storyworld, and therefore, by definition, are incongruous with respect to the 'normal', narrating of events and states.

Hunt and Vipond (1986: 58-59).

Although the actual realization of evaluation by Hunt and Vipond might be different from the one used in this study, theirs is a broad view of evaluation which is in many ways consistent with one of the main assumptions about evaluation used by the present study - that of evaluation as context-specific. For example, the definition of telling evaluations as consisting of meta-narrative comments could be related to the concept of writer responsibility: comments such as "I suppose my mother ... I only remember ... I know I find it very odd ..." (ibid.: 64) could be seen as equivalent to the kind of hedges which are used a great deal in the measurement of writer certainty and commitment to claims in the ARA as will be seen both in the discussion on hedging in Section 2.7 below and the analysis of writer responsibility in Chapter 3.

Narrative studies of evaluation have an important contribution to the concept of evaluation as used in the present study. The definition of evaluation as 'the point' of telling the story is consistent with evaluation as indicating the 'point' of the ARA

emphasised by the present study and it corresponds in many ways to Hunston's (1989, 1994) evaluation of Relevance which is measured along the important-unimportant scales (also see Chapter 5 for a similar view on textualisation of value).

### 2.7.1.3 Evaluation as a Discourse Element

Another model based on the schematic structure of a text - the Problem-Solution pattern - has its roots in Clause Relations Analysis as developed by Winter (1977; 1982); Hoey (1979; 1983); Jordan (1984); Hoey and Winter (1986). This is usually used for the analysis of expository texts in English. In this approach evaluation plays a part as an element in the schematic structure and discourse patterning of the text. The Problem-Solution pattern is based on the general assumption that "discourses and passages of discourse are organised" (Hoey, 1983: 32), and the analysis of text from this perspective explores a combination of relations between/among clauses/sentences and how these relations organise the discourse. In a problem-solution text, the relations appear to be organised in a more or less hierarchical four-part structure - Situation-Problem-Solution-Evaluation.

In this information structure lexical signalling plays a central role in the signalling/identification of the evaluative part of the text. In fact, Winter says that the term evaluation is used "to describe a kind of language, a choice of lexis and grammatical structure which is made in order to indicate what the writer thinks of the facts being presented" (Winter, 1982: 9). In the same way as in Labov's model, various stages of the text can be identified by answering the audience's questions as illustrated by the figure overleaf.

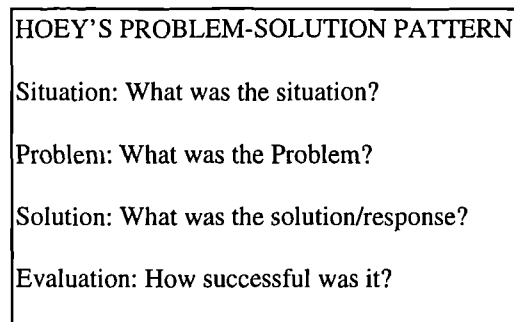


Figure 2.7: Source: Harris, J. (1993: 34)

The following is a very simple model of the Problem-Solution text:

Situation: I was on sentry duty.  
 Problem: I saw the enemy approaching.  
 Solution/Response: I opened fire.  
 Evaluation: I beat off the enemy attack.  
 Source: Hoey (1979, 1983).

The above simplified model of the Problem-Solution assumes the presence of clauses/sentences in the text which signal the four main stages of the text. In the model explicit signals of evaluation are important, more especially in the signalling of Problem and Evaluation. Problem is typically signalled by negative evaluation whereas Solution is signalled by explicit positive evaluation. For instance, the Problem-Solution pattern “is only felt to be complete if the evaluation and/or result is not negative. If negative, a further response is expected, since negative evaluation itself signals a problem” (Hoey and Winter, 1986: 132).

In a similar way to Labov, Hoey's Problem-Solution pattern has already moved a long way from simple lexical expression of evaluation to embrace wider concerns such as the role of evaluation in marking and predicting the occurrence of particular stages of the pattern (the term *prediction* is used in Tadros', 1985, 1989, 1994,



terms). For instance, in a Problem-Solution text, one expects Problem to be signalled by negative evaluation whereas Response is signalled by positive evaluation; one also expects Problem to predict Response to come later in the text. In the present study, the Problem-Solution pattern has been used as a basic model for explaining the underlying conceptual patterning of the ARA.

Taking into account the distinction between lexical semanticists, on the one hand, and broader views of 'good' and 'bad' exemplified in studies by Hunt and Vipond, Labov and Hoey, on the other, it is important to briefly look at the limitations of the description of evaluation based solely on attitudinal language.

#### 2.7.1.4 Some Limitations of Attitudinal Language as Evaluation

The expression of 'good' or 'bad' about something based solely on attitudinal language seems to run into problems, partly because of the difficulty of defining and identifying attitudinal language. In his research on the expression of language as an expression of social reality in Tagalog, Martin (1988) does not deny Poynton's existence of such attitudinal words but sees grammatical expressions of reality - what he calls 'grammatical conspiracies' - as a more realistic way of signalling or identifying attitude (based on culture) in language. Martin finds lexical evidence very difficult to prove. He argues that attitudinal lexis is problematic to define in that:

Lexis is far more flexible than grammar, adapting more quickly to specific changes in the social environment of a community .... Lexis is simply so unstable that it is hard to demonstrate just how it could determine or somehow condition the view of social reality (Martin, 1988: 289).

The problem of defining attitudinal lexis observed by Martin above has implications for the nature of evaluation. For instance, Halliday's identification of interpersonal epithets such as *splendid*, *silly*, *fantastic* (Halliday, 1985a: 163) is based on their lack of objective meaning. It has been observed by many researchers, however, that differentiating between experiential and interpersonal functions is not always an easy task as in many contexts the two very often overlap. For instance, Hunston points out that depending on one's view of the police, they may be identified as either *the pigs* or *the boys in blue* - and that "each nominal express[es] both experiential and interpersonal meaning" (Hunston, 1989: 67). The second problem with attitudinal language is that it assumes the presence of explicit lexical signalling of evaluation. This view ignores the fact that evaluation in a text is not always explicitly signalled. In the ARA, specifically, there are many stretches of language which function as evaluative even though they are not explicitly signalled as such. Hunston argues that in scientific articles evaluation is not always explicit. She accounts for the existence of implicit evaluation through the concept of Goals. Goals are stated by the writer of the text, and anything which helps towards the achievement of such goals is positive, whereas anything that detracts from such goals is negative (Hunston, 1989: 204). Thirdly, studies in attitudinal language assume context-free attitudinal meaning. In her discussion of evaluation in A-Nouns, Francis (1986) argues that such meaning is problematic in that these nouns:

may signal different attitudes in different contexts, and that their meaning may change according to *whose* proposition they are labelling, amongst other factors connected into the writer's goals and beliefs and the reader's moment-by-moment-interpretation of those (Francis, 1986: 54).

Hunston carries this argument of evaluation as context-dependent further by saying that the text itself instantially creates evaluation (Hunston, 1989: 68). This view suggests that a word may be evaluative in one text but non-evaluative in another, hence the problem of identification of evaluation based on attitudinal lexis. A related argument about the role of context in evaluation is that the interpretation of an evaluative expression is dependent on the surrounding evaluations. The following example illustrates the point:

ST2.2: H3

In particular, hypotheses that linked fertility change with nuptiality and migration were quite extensively considered and there is some **relevant**, if rather **inconclusive**, *discussion* in some of the earlier monographs.

In the above example, taken individually **relevant** can be seen as expressing positive value while **inconclusive** expresses negative value. It would therefore be wrong to suggest that the sentence has either positive or negative value on the basis of either evaluation. It is necessary to take into consideration both these conflicting values in order to understand the kind of evaluation propounded by the whole sentence. As it is, the term *discussion* cannot be seen as wholly positively evaluated on the basis of **relevant**, as **inconclusive** undermines the positiveness. At the same time, the grammatical subordination of 'if rather inconclusive' indicates that the positive evaluation is not entirely contradicted. The fact that evaluation is context-dependent also suggests that it is cumulative (see Francis, 1986 and Hunston, 1989 on evaluation as cumulative). The concepts of Scope and Harmony in Chapter 5 provide a detailed analysis of accounting for contradictory evaluations as well as demonstrating the cumulative nature of evaluation.

### 2.7.2 Modality as Separate from 'Good' or 'Bad' (the narrow view of modality)

While many researchers have acknowledged the important role that modality plays in the interpersonal function of language, there have been different opinions about the relationship between modality and evaluation. These different views can be seen in different definitions of modality - and because of such differences it is possible to see modality as concerned with aspects of certainty and separate from 'good' or 'bad', or as a combination of certainty and 'good' and 'bad'.

The approach to modality as separate from 'good' and 'bad' (what can be called the narrow view) can be seen in systemic-functional grammar, more especially in Halliday (1985a, 1994). As has already been seen in Section 2.7.1.1 above, Halliday's concept of 'good' and 'bad' appears to be purely lexical and to be limited to the level of the nominal group, and to be separate from his definition of modality. Modality is described by Halliday as an intermediate degree of possibility or usuality between positive and negative polarity. It "represents the speaker's angle, either on the validity of the assertion or on the rights and wrongs of the proposition" (Halliday, 1985a: 340).

Halliday looks at modality from three interdependent variables - Type, Value and Orientation - and it may be useful to discuss these variables separately. From the perspective of type, Halliday divides modality into modalization and modulation, the former referring to modification of the clause giving or requesting information (the 'indicative' type) whereas the latter modifies the clause offering or giving goods and services (the 'imperative' type). Modalization is further categorised in terms of the

scales of 'probability' and that of 'usuality'; whereas modulation is categorised in terms of obligation (requesting goods and services) and inclination (offering goods and services). This is illustrated by the following Figure:

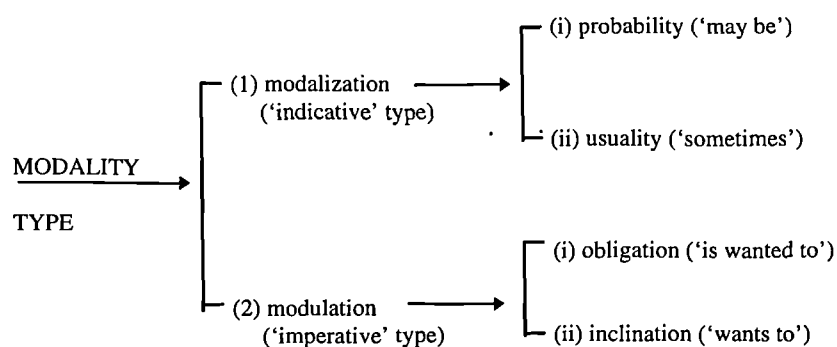


Figure 2.8: Systems of types of modality (Halliday, 1985a: 335)

The second variable - Value - is based on modal judgement - whether high, median or low (see Figure 2.9 below).

	Probability	Usuality	Obligation	Inclination
High	certain	always	required	determined
Median	probable	usually	supposed	keen
Low	possible	sometimes	allowed	willing

Figure 2.9: Three 'values' of modality (Halliday, 1985a: 337)

The third variable - Orientation - refers to the explicitness of the speaker involvement signalled in either of the four possible orientations - subjective explicit or implicit, or objective explicit or implicit. Examples of such expressions are illustrated by Figure 2.10 below.

Category	Type of realization	Example
(1) Subjective		
(a) explicit	I think, I'm certain	I think Mary knows
(b) implicit	will, must	Mary'll know
(2) Objective		
(a) implicit	probably, certainly	Mary probably knows
(b) explicit	it's likely, it's certain	it's likely that Mary knows

Figure 2.10: Expressions of probability (Halliday, 1985a: 333)

The above variables of modality - type, orientation and value - are a useful contribution to the description and interpretation of the strength and type of knowledge claims in the ARA. For instance, orientation and value in particular could be used to measure the strength of the evaluative statement and thus the writer's degree of commitment to that statement: this makes it possible to distinguish between, for example, lower-level and higher-level claims in scientific writing.

Another important feature of Halliday's description of modality is his use of the concept of metaphor based on 'congruence' of grammatical realization. He argues that "for any given semantic configuration there is (at least) one congruent realization in the lexicogrammar. There may then be others that are in some respect transferred, or METAPHORICAL" (Halliday, 1985a: 321). Since metaphor is verbal transference, it is said to be non-congruent realization of meaning. Grammatical metaphors can either be ideational or interpersonal, and the metaphor of modality realizes the latter. About modality, Halliday argues that "in its congruent form, it is an adjunct to a proposition rather than a proposition in its own right" (ibid.: 340) . Metaphors of modality are based on "the semantic relationship of projection"(ibid.: 332) and it is through the metaphorical use of modality that the speaker gives prominence to his/her point of view - for instance the subjective explicit type 'I think ...' or the objective explicit type 'it's likely that ...' (ibid.: 340). The metaphoric use of modality can be seen to be related to Sinclair's concept of plane-change in that the explicit modal metaphor has the same effect of explicit plane-change in separating the evaluation into a separate clause in which the 'it' pronoun encapsulates the following (projected) clause into something that can be commented on - and hence

the effect is the phenomenon of language talking about itself as discussed in Section 2.2.2 above.

The concept of modality can be extended to cover realizations like modal lexical verbs. According to Perkins (1983), these verbs can be used to signal modal judgement or commitment. Examples of modal commitment are 'I think it might be very nice' (Simpson, 1990: 71) or 'I suppose he may be there' or 'I imagine', 'I know' (Simpson, 1993: 52). Perkins suggests that many of the modal lexical verbs are performative ones and divides them into categories based on the performative act they carry- asserting, evaluating, stipulating, requesting, suggesting, exercising authority and committing (Perkins, 1983: 94-95). Examples of evaluating modal lexical verbs are 'calculate', 'conclude', 'postulate', etc. According to Stubbs (1996) commitment :

concerns whether a proposition is presented as true, false, self-evident, a matter of objective fact or of subjective opinion, shared knowledge, taken for granted or debatable, controversial, precise or vague, contrary to what others have said and so on (Stubbs, 1996: 204-205).

The function of these verbs in evaluation is discussed in detail in Chapter 5 under reporting verbs.

### 2.7.3 Evaluation as a Combination of Modality and 'Good' or 'Bad' (the broad view of modality)

While the above discussion focuses on modality as an expression of epistemological stance (the term used by Hill and Irvine, 1992), the broad view of modality includes both epistemological stance and evaluation as 'good' and 'bad'. The first example of this broad view of modality can be found in Simpson (1993) who defines modality as

referring to ‘attitudinal’ features of language (Simpson, 1993: 47). He bases his definition on Fowler’s (1981) identification of a variety of grammatical means for conveying modal commitment. This includes:

modal auxiliaries, modal adverbs (or sentence adverbs), evaluative adjectives and adverbs, generic sentences and verbs of knowledge, prediction and evaluation. (Simpson, 1993: 47).

Another important example of this broad view of modality is that found in the work of Biber and Finegan (1989) on *stance*. By *stance*, the authors refer to “the lexical and grammatical expression of attitudes, feelings, judgements, or commitment concerning the propositional content of a message” (Biber and Finegan, 1989: 93). According to Biber and Finegan, stance can be defined in terms of *evidentiality* and *affect*. While the former refers to “the speaker’s expressed attitudes towards knowledge: towards its reliability, the mode of knowing, and the adequacy of its linguistic expression”, the latter refers to “the expression of a broad range of personal attitudes, including emotions, feelings, moods, and general dispositions” (ibid.: 93-94). ‘Evidentiality’ thus clearly relates to modality as it has been described above, whereas ‘affect’ relates to evaluation in terms of ‘good’ and ‘bad’. The authors say that by including both evidentiality (realized by markers of both certainty and doubt) and affect (realized by markers of positive and negative), they are taking a broad view of stance. In their study, they look at markers of stance from grammatical categories: verbs, adjectives, adverbs, and modals. Among the evidential stance markers the authors give examples such as *obviously*, *sort of* or *it is possible that ...* while an example of markers of affect is *it was lovely*. Biber and Finegan make a comparative analysis of various genres in terms of how stance is marked in each, for example, texts with informal and formal registers.



The broad view of modality is consistent with the value system of scientific discourse in which both good and bad (value in Hunston's terms) and certainty are desirable qualities: for example, certainty is 'good' while lack of certainty is 'bad'. It is important at this stage to look back at the definitions of attitude or point of view above. The view in this study is that the broad definition of stance by Biber and Finegan (1989) in which the term comprises both evidentiality (epistemology) and affect (good or bad) and that of the broad view of modality in which epistemology and 'good' or 'bad' are inclusive, is what constitutes evaluation. Although the broad views of *stance* and *modality* are regarded as synonymous with *evaluation*, for the sake of clarity, I prefer to follow Hunston and use the term *evaluation* as an umbrella term since it has an underlying concept of assigning value to something: in the present study, the focus is on what things are assigned value and in what terms. The analysis in Chapter 4 indicates that the main values in science are Fixedness and Worthiness.

## **2.8 Evaluation in the Academic Research Article**

Having looked at the three perspectives on evaluation - the good or bad, the narrow and broad views of modality - it is now possible to look at what needs to be covered in an exploration of evaluation in the ARA. Before looking at the present study's position on evaluation, it is worth revisiting the notion of modality by reviewing research so far on the role of modality in evaluation in the ARA, as a way of situating my own research in the context of existing knowledge on the subject.

### 2.8.1 Modality and Hedging in ARAs

Much of the research on modality in the ARA tends to treat modality as a subcategory under the more general term of hedging. Since scientific-academic writing appears to be impersonal and formal in that there is not much reference to the writer as an obvious actor in the process of scientific discovery, hedging is seen as an integral part of interaction in this genre.

Hedging has been seen as realized by modality, particularly of the epistemic type as certainty seems to be one of the important values of scientific writing, the point made by Hyland that “academic writing involves epistemic modality” (Hyland, 1994: 240). There are also other ways of hedging other than modal auxiliaries and modal lexical verbs. Some of the signals of hedging have been discussed by other researchers under the notion of metadiscourse (e.g. Nash, 1990b, Crismore and Farnsworth, 1990, Vande Kopple, 1985). Crismore and Farnsworth divides modality into hedges, for example, *probably*, and emphatics, for example, *clearly*, *undoubtedly* (Crismore and Farnsworth, 1990: 124).

In order to understand the function of hedges in academic discourse, it may be useful to look at hedging from two different yet complementary viewpoints - hedging as uncertainty and hedging as politeness/negotiation.

The notion of hedging as uncertainty can be found in many studies of scientific discourse in which hedges are considered as “ways of being more precise in reporting results. Hedging may present the true of the writer’s understanding, namely, the strongest claim a careful researcher can make” (Salager-Meyer, 1994: 151).

According to this view, hedges have an important role in scientific discourse as “a resource to express scientific uncertainty, scepticism, and doubt” (ibid.: 151). Salager-Meyer argues that in the ARA hedges are used as an important strategy to negotiate the right presentation of the state of knowledge about the subject under discussion, and as a way in which the writer recognises that the truth (s)he is exploring is “only another step towards the discovery of other truths which will in turn advance knowledge and understanding of nature” (ibid.: 151).

Hedging in the ARA has also been looked at from the point of view of politeness. Notable among the researchers in this area is the work of Myers (1985a, 1985b, 1989, 1991). Myers examines the scientific article from the point of view of politeness based on the work of Brown and Levinson (1983), who use the terms ‘negative face’ and ‘positive face’ based on Goffman (1967). According to Myers, in presenting a research paper the writer is aware of the audience - the community of researchers for whose consumption the paper is aimed. He argues knowledge claims are in themselves face-threatening acts (FTAs) in that in a paper, the researcher refers to the work of other researchers to signal agreement or disagreement with the researchers, and to make or deny knowledge claims. There is therefore a need to use politeness strategies to express criticism while minimising the FTA. In identifying hedging as politeness, Myers argues that:

Hedging is a politeness strategy when it marks a claim, or any other statement, as being provisional, pending acceptance in the literature, acceptable by the community - in other words, acceptable by the readers (Myers, 1989: 12).

This view is shared by Salager-Meyer who defines hedges as:

understatements used to convey (purposive) vagueness and tentativeness, and to make sentences more acceptable to the hearer/reader, thus increasing their chance of ratification and reducing the risk of negation (Salager-Meyer, 1994: 150)

Hedging as a powerful negotiation strategy in ARAs has been widely studied by many researchers on scientific writing (see, for example, Thompson, 1993; Hyland, 1994; Salager-Meyer, 1994; Myers, 1991, on hedging, politeness and certainty). For many writers in this area, hedging (which includes modality) is seen as an integral part of expressing certainty in scientific arguments which can determine acceptance or rejection of a scientific-academic paper. According to Thompson (1993) in the results section, hedges have a pervasive use which:

indicates a reluctance to claim that experimentation leads to absolute or transcendent truth. Rather than an expression of an unequivocal fact, interpretations seem to serve another purpose: to persuade an audience of a proposed reality constructed from and supported by experimental data (Thompson, 1993: 118).

As will be demonstrated in the study, and has been observed by many writers in this field, hedging is a conventional aspect of interpreting and evaluating findings, criticising other researchers or accepting criticism - and it is a face-sensitive strategy.

### 2.8.2 The Present Study on Evaluation

The present study takes a view of evaluation which is similar to the broad view of modality based on Biber and Finegan (1989) and Simpson (1993) discussed above: attitude as a combination of modality (certainty, truth and commitment) and the aspects of 'good' and 'bad' as defined by Jordan (1984) in 2.7.1 above. The broad view of modality is consistent with the ideology of science in which, for example,

certainty is a desired value and therefore it carries positive evaluation (i.e. it is good). Thus modality and good or bad are combined. In the actual analyses in the thesis these two dimensions are discussed separately: certainty and commitment (modality) in terms of writer responsibility (Chapter 3) and 'value' (good and bad) in Chapter 4. While the former functions as modification of certainty, the latter expresses an attribute of something. Despite these two being discussed separately, the study shows that they are not independent: they are regarded as two interrelated dimensions of evaluation. For the purpose of this study, the type of modality which is seen as most relevant to the study of evaluation is that of modalization, the epistemic type, as this is the kind which is commonly used in the expression of knowledge claims: as mentioned, certainty plays a major role in the construction of knowledge; for example certainty is good for science since it contributes to the establishment of scientific truth/fact whereas lack of certainty is undesirable.

The above discussion of the present study's view on evaluation leads me to the discussion of the approach to evaluation in the ARA which forms the basis of my research - that of Hunston (1989) - and which I will now discuss in more detail.

### 2.8.3 Evaluation as a Discourse Function (Hunston, 1989)

The present study is based on the original study by Hunston (1989) which has since been developed in research papers (1993a, 1993b, 1993c; 1994). In her work on evaluation in the ARA, Hunston combines studies of the ideology of science and genre-based approaches to written scientific discourse. In her investigation, she divides evaluation into three dimensions or functions - *Status*, *Value* and *Relevance*.

First, the Status function is defined by Hunston as “the placing of an item in the first part of a *thing-evaluation* pair within an evaluative category” (Hunston, 1989: 106).

This ‘thingness’ is bestowed on a statement by the writer’s signalling of the degree of certainty and commitment towards that statement, and is measured along the certainty-uncertainty scale. Hunston’s category of status in a text is measured along three parameters:

1. The activity of the writer: the activities are grouped according to whether or not they constitute a knowledge claim - for instance, “whether or not the writer is claiming some degree of truth to be attached to the proposition” (Hunston, 1989: 113). A knowledge claim, may, for example, **assert status, state fact or narrate event**; while a non-knowledge claim may **describe figure, state formula or state question**; or **assume, postulate, recommend or state aim**.
2. Acknowledgement of source: whether the source of a statement is **received knowledge, citation** or the **writer’s own argument**.
3. Modification of certainty which is realized by modality and other related expressions, for example, **We believe that** or **probably**.

The three dimensions interact in the text ‘so that a categorisation of any one parameter may be modified by categorisations on the other two’ (ibid.: 131).

The second function, Value, is regarded by Hunston as referring to good or bad (an assessment of worth or value). It is measured along the good-bad scale. Hunston’s major argument, which has already been discussed earlier in the chapter (and which forms the basis for the present study), is that the ‘good’ and ‘bad’ in a text are not always signalled, and therefore, to identify evaluation involves awareness of the Goals of the text: “anything which helps towards the achievement of those goals ... has positive value, whilst anything which detracts from that achievement has a negative value” (ibid.: 204). The concept of Goals helps in accounting for those propositions

which although functionally evaluative are not explicitly signalled as such. Hunston gives an example of the sentence '*much of the cellular material has been extracted from hypotonically swollen cells*', which in the context of the Goals of the text she is analysing "gives value to the experimental procedure undertaken and yet there is nothing in the clause that could be considered attitudinal or evaluative outside this particular context" (ibid.: 204).

The third dimension, that of Relevance refers to how important something is and has an organisational function. It is measured along the important-unimportant scale. Here Hunston uses the concept of Relevance (Sperber and Wilson 1986) and its application by Francis (1986, 1994) to relevance markers (RMs). In terms of evaluation, relevance refers to textual signalling of important information which occurs at some stages of the text where the writer summarises and simultaneously evaluate units of information. This can be marked either prospectively (advance labelling) or retrospectively (retrospective labelling). For Hunston, prospective RMs are the equivalent of topic sentences of traditional rhetoric, while retrospective RMs act as concluding elements (Hunston, 1989: 264). She explains the interactive function of RMs by suggesting that they "represent one of the ways in which writers interact with readers in the sense of indicating to them the patterning of the text under construction" (ibid.: 278). Relevance markers as outlined by Hunston are closely linked to the idea of encapsulation by Sinclair and also related to Winter's idea of clause relations in that the RMs signal the meaning relationships among various parts of the text.

As has already been seen the present study draws its main theoretical basis for the study of evaluation in the ARA from Hunston's approach, particularly the idea of Goals in identifying what is or what is not evaluative in the text. This close link between Hunston's approach and the present study will become clear in relevant sections of the study, particularly in Chapter 4.

#### 2.8.4 The Present Study on Evaluation: Approach and Assumptions

Even though the present study is covering the same ground as that of Hunston (1989, 1993a, 1993b, 1993c, 1994), there are differences in terms of emphasis and the analytical frameworks used. First, unlike Hunston's original data of biochemistry articles, the present study uses multidisciplinary data none of which is from the 'hard' sciences, with the assumption that, irrespective of differences of discipline, the ARA is a broad genre within which different disciplines are sub-genres. As has already been seen, several writers have already used the same ideology of science in the analysis of 'non-science' ARAs. Examples of these are Bazerman's (1981) comparative study of science, social science and humanities articles and Hunston's (1994) analysis of the SUTY text. This approach is supported by Knorr-Cetina's (1981) notion of universality of interpretation procedure which characterises all research articles across subject areas. For the purpose of the present study, whatever differences there are among disciplines are interpreted as 'optional' choices open to the researcher within the conventional constraints of the 'macrogenre' of the ARA.

The second, and major, difference between Hunston's model and that of the present study is that while the former looks at evaluation in general, the present study is mainly



concerned with that type of evaluation which highlights the writer-as-researcher communicating with other researchers-as-readers in the text - Research Oriented Evaluation (ROE) as opposed to the more general evaluation of the content-plane of the paper - Topic Oriented Evaluation (TOE). For example in 'It is **important** to note *that...*' the evaluation is aimed directly at the reader - it can be glossed as 'You have to note this point because it is important'. This is an example of ROE. TOE, on the other hand focuses on the evaluation of the entities in the subject area, for instance, in History, Napoleon could be described as 'a **powerful** ruler'. Although **powerful** is evaluative, it is however not evaluative in research terms. The implication of this distinction is that it motivates different categories of evaluation from that established in Hunston's study. One result of this distinction is that my categories are much fewer and simpler than Hunston's; for example in Chapter 4, value is categorised into two general categories of Worthiness and Fixedness which are further divided into four parameters - Usefulness, Significance, Control and Certainty.

Although Hunston's three dimensional perspective of Status, Value and Relevance are based on the same theory as that used in this study (Halliday's multifunctional theory), different terminology is used - i.e. for this study, I use Writer Responsibility, Parameters of Value and Textualisation of value, - and the dimensions are analysed in slightly different ways. For instance, while Hunston relates Status to Halliday's ideational function, the present study relates it to the interpersonal function (or, more strictly, to Tenor - see the discussion in Chapter 7) based on the assumption that it sets up roles and relationships for writer and reader interaction to take place. This also means that while Hunston's Value is related to the interpersonal function, in the present

study it is linked to the ideational function (or, more strictly, to Field) based on the entities evaluated and the terms in which they are evaluated. These differences, which will be more fully discussed in the following chapters, are summarised by Figures 2.11 and 2.12 below.

The differences between my categories and Hunston's are not as watertight as the two diagrams (Figures 2.11 and 2.12) seem to imply. The difference between Hunston's categories and mine is not that of substance but that of the interpretation of what is going on in text based on the perspective from which each is looking at the text. For instance, Hunston's main reason for relating the Status evaluation to the ideational function is that she bases certainty categories on the ideological categories of knowledge or non-knowledge claims, whereas in my analysis I look at ideological considerations under parameters of value. In my own approach, certainty involves negotiating knowledge claims between the researcher and the community of readers for which the text is intended.

HALLIDAY'S (1985a) Metafunctions	HUNSTON'S (1989) Functions of Evaluation
Ideational	Status
Interpersonal	Value
Textual	Relevance

Figure 2.11: Hunston's functions of evaluation as related to Halliday's three metafunctions

HALLIDAY'S (1985a) Metafunctions	THETELA'S (1997) Dimensions of Value
Ideational/Field	Parameters of Value
Interpersonal / Tenor	Writer Responsibility
Textual/Mode	Textualisation of Value

Figure 2.12: Thetela's dimensions of value as related to Halliday's Context of Situation

The final difference can be seen at the level of detail. I use a different model of looking at the organisational role of evaluation in text. While Hunston emphasises organisation through RMs, especially retrospective ones, I adopt a top-down approach: I use the Problem-Solution pattern as a conceptual framework in order to account for evaluative signals which have a structuring function. For example, Relevance is not always explicitly signalled: a statement of the aim may be used to signal dominant evaluations in the paper - and hence the concept of Goals plays a crucial role in my analysis of text patterning which is based on rhetorical functions of the ARA (see Chapter 6).

## **2.9 Conclusion**

The chapter has discussed in detail some of the most important approaches to discourse which have influenced the approach to evaluation in the present study. Although many of the approaches are not directly linked to the concept of evaluation, they however provide both the linguistic and contextual environment without which evaluation might have been more elusive a concept than it has been. The overall contribution of the approaches are summarised in the last chapter of this thesis. It is thus important to have these theories at the back of our minds when we move to the actual study commencing in the next chapter of the thesis.

## CHAPTER 3

### WRITER RESPONSIBILITY IN THE STUDY OF EVALUATION

#### 3.1 Introduction

In this chapter, I investigate how far the writer of a text can be held responsible for propositions which occur in various parts of a text. This will be referred to as *writer responsibility*. The present investigation starts from the premise that the analysis of writer responsibility in text is potentially useful in enabling a systematic description of the ways and means by which the writer of a text provides both linguistic and contextual signals which enable the reader to identify easily to what degree the writer can be held responsible for any proposition in the text. It should be noted that a proposition may itself include evaluation - whether or not a proposition includes evaluation involves a different set of choices, which are the subject of Chapter 4 below. However to try and clarify the division between a proposition proper and signals of evaluation and responsibility, let us briefly consider the two invented sentences below:

- (1) This may be due to erosion = This is due to erosion (proposition) + may (signalling diminished responsibility from the perspective of certainty)
- (2) This may be inaccurate = This is inaccurate (proposition including evaluation) + may (signalling diminished responsibility from the perspective of certainty)

While the proposition in sentence (1) does not include evaluation, the one in sentence (2) does - the latter is signalled through **inaccurate**. For both propositions however, the modality signal *may* indicates that the propositions are not categorical assertions as they are both modified in terms of certainty: the writer cannot be held fully responsible for such propositions since (s)he has signalled low certainty - which can be interpreted as

'possible' - about the validity of the propositions in question (modification of certainty as one of the major variables in measuring writer responsibility is discussed in detail in Section 3.5 below).

The interest in writer responsibility results from the realisation that enmeshed within the informational content of the text is a whole network of evaluations of diverse (albeit complementary) types and functions. The question for the present investigation, therefore, is how the writer signals his intended evaluation as well as how the reader manages to identify it correctly. The chapter thus investigates what the signals in the text are which enable this "meeting of the minds" between the writer and the reader.

One of the major assumptions in this chapter is that a text comprises various *voices* (sources of information), the writer's as well as those of other sources referred to in the text (see, for example, Myers, 1989; Goffman, 1981; Gilbert, 1992; and Thompson, 1996b, on *voice* in written text). In order to know who is saying what in the text, the reader needs to distinguish the writer's voice from other voices as well as to identify the writer's relationship with these other voices; and hence the concept of voice is potentially useful in the analysis of writer responsibility. The concept of writer responsibility is related to Hunston's (1989) concept of *status* (though see Figures 2.11 and 2.12 in this thesis). Writer responsibility can be described as the 'weighting' of a proposition in terms of its strength based on who the originator is as well as how committed the writer of the text is to the validity of the proposition - various ways of measuring writer responsibility are illustrated in the rest of this chapter.

In a text, the writer can basically weaken the degree of responsibility by either:

- (i) ascribing information to another source; or
- (ii) hedging the information, especially through modalisation.

The first concept, of source, is linked with Sinclair's (1987) and Tadros' (1993) concepts of *averral* and *attribution* in discourse. Averral and attribution are basic notions which relate to the establishment and maintenance of interaction in written text. Averral is based on the assumption that the writer of a text "avers every statement in his or her text so long as he/she does not attribute these statements to another source - whether that source is other or self" (Tadros, 1993: 100). Attribution on the other hand is the counterpart of averral. According to Sinclair "attributions are reports in the text which have the effect of transferring responsibility of what is being said" (Sinclair, 1987: 8). Thus in attributed statements "the sayer of what is said" or "the writer of what is written" is usually clearly signalled. The relationship of this with writer responsibility is that in an averred statement the writer can be held responsible for the content of that statement, whereas in an attributed statement, the primary responsibility for the content lies with the ascribed source. This implies that if a speaker/writer attributes a statement, s/he is weakening his/her own averral and therefore avoiding primary responsibility.

The effect of averral or attribution on discourse has been discussed by various researchers: see, for example, Lyons (1977) on the strength of information in cases where the source has or has not been signalled; Hunston (1989; 1994) on the effect of source on the status of a proposition; Tadros (1989; 1994) on reporting as implying writer detachment while predicting evaluation; Jacoby (1987) on the purpose of

referring to other researchers in a research article; and Thompson and Ye (1991) and Thompson (1994) on evaluative functions of reporting verbs.

As regards modality and its function in language, there has also been extensive research. The present chapter focuses on the epistemic type which has been primarily associated with certainty and uncertainty as well as the writer's commitment and attitude to the truth value of a proposition. Among the best known researchers in this field are Lyons (1977) Perkins (1983), Palmer (1986), Butler (1990) and Simpson (1990; 1993), all of whom point to the difference between 'categorical assertions' and 'qualified (modalised) assertions', the former being stronger than the latter in terms of factuality. The concept of factuality and the effect of modality on factuality is looked at by, for example, Hunston (1989; 1994) on modification of certainty; and Almeida (1992) on factuality in newspaper reports. For the purpose of this study, the concept of factuality is based on Almeida who looks at it in terms of the relationship between the writer and his/her statement. She argues that "the statement can only be considered as factual statement if the speaker [writer] accepts responsibility for it" (Almeida, 1992: 241) and that "relative to the writer/speaker, only those statements which are 'owned', in the sense of responsibility, are factual statements with respect to that writer/speaker" (ibid.: 242). This is related to the concept of generality of a statement which in this chapter is analysed from the perspective of *hedging* in Section 3.5 below.

In the research on source of information (averral and attribution) and modality and modalisation, the bulk of the research has concentrated on the two as separate linguistic systems. To my knowledge, with the exception of Hunston (1989; 1994), there has

been very little research into how these two systems can work together in text. The present chapter therefore looks at the basic ideas of source (averral and attribution) on the one hand, and modification of certainty (largely through modalisation), on the other, as interdependent dimensions of choice in the analysis of writer responsibility. Bringing the two systems together for the analysis of writer responsibility will, it is hoped, give a clearer insight into what propositions can or cannot be taken as expressing the writer's point of view in the text, thereby illuminating how the reader is able to identify the writer's overall purpose in the text.

### **3.2 Towards a Descriptive Framework**

Before coming to the data itself, let us look at the following invented examples of sentences to illustrate the concept of writer responsibility:

1a: This approach to language study is very helpful.

1b: This approach to language study might be very helpful.

1c: I think this approach to language study is very helpful.

1d: Nigel argues that this approach to language study is very helpful.

In examples 1a to c, the writer can be seen to accept responsibility for positive evaluation of "the approach" although there are different degrees of acceptance of responsibility. In (a) the writer makes a categorical assertion, thereby fully owning to responsibility for the assertion. That is, (s)he implicitly guarantees to the reader that the assertion needs no limitation and is valid in all cases and under all circumstances. 'Responsibility' is thus seen in an almost legalistic sense: a categorical statement is one for the truth of which the writer can be held fully responsible. In (b) although (s)he is



accepting responsibility, the writer's averral is weakened by a reduction of certainty carried by the possibility modal verb *might*, which gives the proposition a more restricted validity and also allows the writer potentially to avoid responsibility. By personalising the proposition in (c) through *I think* - which can be seen as functioning simultaneously as a modality tag and as a form of attribution - the writer allows for the possibility that others might disagree with him/her. While examples (a) and (b) are averred statements, in (c) and (d) the writer is ascribing the proposition to a specific source. In (c) this is him/herself, whereas in (d), it is an external source, Nigel, with whom (s)he might or might not signal agreement at another point in the text.

This is a fairly simplistic picture of what actually happens in the text. In order to explore in more detail the usefulness of writer responsibility to account for writer commitment to a proposition, an attempt is made to establish a descriptive framework within which to analyse text. The descriptive framework appeals to three major variables, namely, source of information, the writer's 'treatment' of the source of information and the modification of certainty.

### **3.3 The Source of a Proposition**

The source of a proposition in a text varies from the most general to the most specific. The assumption made in this study is that assigning a proposition to a particular source normally implies that the truth or validity of that proposition can more easily be questioned. On the other hand, the absence of a source implies that the proposition is treated as fact (or common knowledge) and therefore as not open to question. This assumption is supported by Lyons (1977) who argues that:

If there is no explicit mention of the source of our information and no explicit qualification of our commitment to its factuality, it will be assumed that we have full epistemic warrant for what we say. (Lyons, 1977: 809)

Having “epistemic warrant” implies that the writer makes an assertion the epistemic necessity of which is not based on his/her knowledge (Lyons, 1977: 809) but which is generally shared by others, from which follows the lack of attribution to a specific source and the categorical nature of the assertion being made. As Lyons points out, “There is no epistemically stronger statement than a categorical assertion ...” (ibid.: 809). This thus implies that the statement is high on the generality scale and therefore high in writer responsibility.

Figure 3.1 below illustrates the point made about the general effect of source on the degree of writer responsibility.

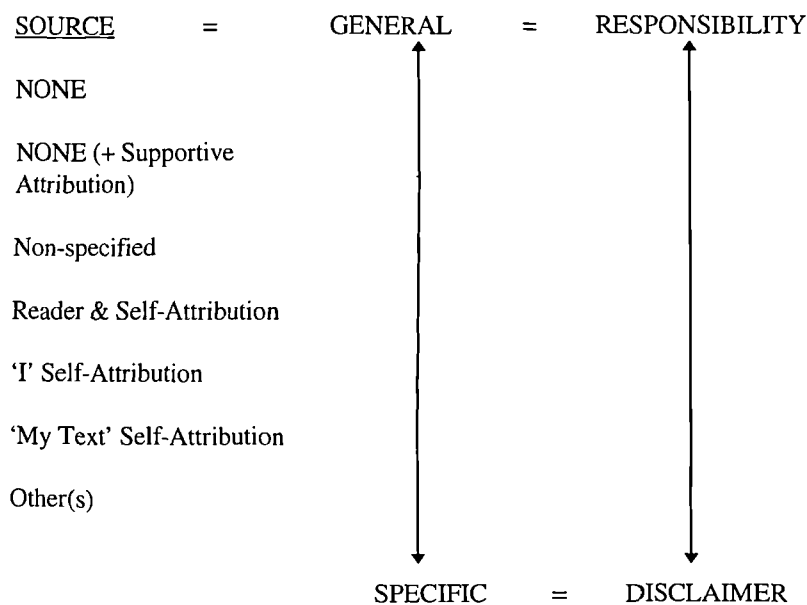


Figure 3.1: The General-Specific Cline and Writer Responsibility

According to Figure 3.1 above there are various options open to the writer for presenting propositions in text, and these can be described along the general-specific cline as illustrated in the figure. The individual stages along the cline are discussed below.

### 3.3.1 Non-Attribution

At the highest level of the cline is non-attribution. This choice gives a proposition factual status and by implication the proposition is not intended to be challenged. In this form of averral (which Sinclair (1987) and Tadros (1989) call *negative averral*), the absence of any source from the proposition suggests that the writer accepts full responsibility for its validity and truth value.

The following are typical examples (NB. All sample texts used as illustrations of writer responsibility are underlined):

#### ST3.1: AL6

And only after we have established causal relationships will we be in a position to explore whether we are justified in relating washback to a test's validity. Thus lack of washback on systemic validity is at best premature, and at worst ill-conceived.

#### ST3.2: AL7

These distinctions are of greatest importance in the investigation of written communication, but they are consequent on the establishment of ablocutionary value in any particular instance.

The above examples of non-attribution imply that writer claims full epistemic warrant for the propositions and thus (s)he is, as it were, 'legally' responsible/liable for such assertions, including the evaluations of worthiness ('**greatest importance**') and fixedness ('**premature, ill-conceived**') that are asserted (See Chapter 4 on these categories of value).

### 3.3.2 None (+ Supportive Attribution)

In the data, there appears to be another option in non-attribution - making a categorical assertion with a source in parenthesis. An example here is:

ST3.3: AL7

In our present state of knowledge, the idea of one explanatory theory of language and communication is a chimera. Further we are in position to say that the processes or the processing units of the language user, let alone the language analyst, are those of the language learner. This potential mismatch of conceptualisation is further complicated by the introduction of the language teacher (Spolsky 1987).

Despite the writer attaching a parenthetical source to the proposition above, the voice in the proposition is still that of the writer with the source in parenthesis merely as supportive authority to the writer's proposition. It is as if the writer is saying, "This is a fact (which I have taken from Spolsky)". The writer responsibility for this proposition is thus still very high. (On very similar options carried out in slightly different ways see Section 3.4.1 on 'Attribution-Delegated').

### 3.3.3 Non-Specified Source

Unlike with non-attribution, in this option the source is signalled even though it is implied rather than explicitly stated. This implication of a source is typically done through passivisation. Many writers on scientific writing have argued that one of the ways of ensuring the impersonal style of scientific writing is the use of passivisation instead of direct writer and reader intervention (e.g. Bazerman, 1984). From the perspective of writer responsibility, it appears that presenting information in the passive implies more generalisability than if the source had been explicitly stated. However, *hinting at the source denies the information a fully factual status, thus weakening writer*

responsibility. In the data used, the implied source can be either the ‘Self’, the ‘Reader & Self’ or the ‘Other(s)’. Examples of these are, respectively:

### 3.3.3.1 The ‘Self’

ST3.4: EC2

If Germans hold a positive quantity of non-mark assets a mark appreciation restores equilibrium since it causes German wealth to fall, which increases the world net supply of market assets, creating pressure on the mark to depreciate to restore equilibrium. It is assumed that over the period examined Germans held a positive quantity of non-mark assets, or a sufficiently small negative quantity, that an increase in the German-U.S interest differential leads to a mark appreciation.

In this example, it is the writer who makes the assumption carried by the projected clause even though (s)he chooses to put it in the objective explicit form “it is assumed”.

### 3.3.3.2 ‘Reader & Self’

The inclusion of the writer and reader in the discourse of the text is an important interactive strategy in text. Much research has already pointed out that despite the writer being the sole producer of the text, the reader plays an important role of interpreting the meaning of the text. It has been suggested that through strategies such as role assignment, it is possible to evoke the presence of the reader (see Thompson and Thetela, 1995, on enacted and projected roles in written discourse), thereby making the text interactive. It is not surprising therefore that the reader is often included in the text as the co-originator of the proposition. An example of this strategy is:

ST3.5: AL1

The impetus for the writing of a new reference grammar can be seen to have come from two directions; first, new insights into language structure afforded by concordances of very large amounts of data and second, the need for a pedagogic reference book. ....

ST3.6: AL40

But it should be remembered that the main clauses (which express the conditions) are related to one another as alternatives (see Figure 1).

ST3.7: AL40

It turns out that most of the constituents which I have pointed out as receiving tonic accent occur at the ends of their clause, and many linguists have noted the association of ends of

clauses with tonic or sentence accent (See Halliday, 1967...). However, this correlation cannot be used as an explanation for the likelihood that a certain bit of information will receive **tonic** accent in a given sentence....

Here, the generalised statements ‘can be seen’, ‘should be remembered’ and ‘cannot be used’ assume the presence of both the writer and the reader thereby implying that both the writer and the reader share the responsibility for the proposition.

Another way of introducing ‘Reader & Self’ as non-specified source is that of using perception modality (see Perkins (1983) and Simpson (1993) on the concept). Perception modality is defined as a subcategory of epistemic modality which, “is distinguished by the fact that the degree of commitment to the truth of a proposition is predicated on some reference to human perception” (Simpson 1993: 50). Although in this chapter modality is discussed in Section 3.5 as an integral aspect of modification of certainty, I include perception modality under source as it has an idea of source implied in its meaning. This relevance of perception modality as signalling source can be illustrated by the two examples of modal disjuncts below.

ST3.8: AL1

At one level, this is obviously true - they are read by different people - but it is also evident that *applied linguists who have seriously considered the relationship between description and pedagogy,...*do not in fact maintain this separation of theory and practice.

ST3.9: H20

Clearly, then, the ultimate failure of the Popular Front as a defence mechanism against fascism cannot simply be explained by the grisly stories emanating from the Lubrianka.

In the above examples, though the writer is clearly the originator of the information, the statements appear to assume shared knowledge between the writer and the reader. Bernhardt (1985) points out that using disjuncts can be a very powerful strategy for invoking the reader’s presence in the text. In the text he analyses he shows how in the

sentence “Clearly these older unproductive impoundments need rejuvenating”, clearly invokes both the reasoning writer and reader “both of whom lurk beneath the surface of the text” (Bernhardt, 1985: 167- 68). Myers (1989) supports this view by arguing that in scientific writing the writer can identify his own work with others in the field by “assuming that everyone shares either the idea behind one’s claim or the experience behind what might be taken as a criticism” (Myers, 1989: 9). In an example similar to the one above, he argues that by treating something as “obvious”, the writer “includes all his readers as potentially capable of making this claim, minimizing his own originality” (Myers, 1989: 9). The implication for the present study is that the writer uses perception modality to manipulate the reader into sharing responsibility with him/her. Of course, the real reader can decline but the writer will have made an attempt to involve the former in sharing responsibility. As has already been suggested, a statement that is shared is more generalisable and higher in writer responsibility than that which is limited to an individual source.

### 3.3.3.3 ‘Other(s)’

In addition to the implication of both the writer and reader in an unspecified source, other sources can also be implied in the discourse.

#### ST3.10: AL2

So an auxiliary assumption which has generally been made but which may not be true is that affect influences SLA in a linear way.

#### ST3.11: EC7

It has always been acknowledged that the problem of economic policy formulation facing governments is a complicated one involving the manipulation of various policy instruments in an attempt to attain often conflicting policy objectives.

In these examples, the passive has been used to imply the presence of a source other than the writer and the reader. Thus the writer detaches himself from the evaluation

which allows him later in the sentence to evaluate the ‘assumption’ in ST3.10 and the ‘acknowledgement’ in ST3.11. There are however, other clues given to the generalisability of the source here such as ‘generally’ in the first example (see treatment of source in Section 3.4 below).

Before going on to discuss the next two sources - Reader + Self-Attribution and the ‘I’ Self-Attribution - below - it is important to comment briefly on the role of explicit self-reference in academic discourse from which background explicit self reference as source of a proposition is looked at. Much research on scientific writing has emphasised the impersonal nature of the genre, to the extent that comments such as the following have been commonplace:

The “I”, “you” and “we” are deleted because only the facts are important....The injection of personality and the use of personal pronouns are techniques common to persuasive writing but undesirable in information exposition (Mitchell, 1968: 89).

The previous chapter has already argued that scientific writing is not just a report of hard and cold facts but is persuasive; and it is interesting that, according to Mitchell above, the ‘injection’ of the writer’s personality is acceptable only as a persuasive strategy. Bernhardt agrees with the view on impersonality in scientific writing but points out that:

Certainly, scientific writing has conventions of impersonality, expressed linguistically through passive constructions, deleted agents, and characteristic level of formality. But the individual scientist is at the heart of the research, a person who has made decisions about conducting and interpreting the research, and the presence of an active writer in agentive roles appears both honest and efficient (Bernhardt, 1985: 164).

From this viewpoint Bernhardt argues that because of the inevitability of writer and reader presence in scientific discourse, the most important task facing the researcher in



this area is that of exploring “what rhetorical and communicative functions are served when the writer or reader is explicitly present in the text?” (ibid.: 164). Bernhardt identifies seven major acts performed by the writer through explicit intervention in scientific discourse. For the purpose of the present study, only five of these are relevant (NB. I have underlined explicit signals of writer and reader presence).

1. To state and justify hypothesis selection: e.g. ...We felt that this method offered promise for use with free-living waterfowl....

2. To justify methods chosen to justify departures from the established methods: e.g. We assumed that during an observation all day, all broods present would be seen at least once. We believe that this assumption was met in most cases, because all wetlands were small and contained limited cover....

3. To explain adjustments to methods or to explain inability to interpret results: e.g. We were unable to draw down water levels sufficiently in plot A pools during the control period....Therefore we concluded that “spill-over” nesting from the experimental lot onto the control plot was minimal.

4. To compare present findings with previous studies or to state conclusions: e.g. Although many factors may influence populations, we are convinced that large marshes attract populations of birds by their habitat features and food supplies....

5. To discuss implications: e.g. We recommend that brood inventories be conducted when air temperatures are under 23 c and when wind speed is less than 24km/hour....

Source: Bernhardt (1985: 164 - 172).

The functions of explicit writer intervention in the academic discourse discussed by Bernhardt above can be seen as hedging the phenomenon which has been seen by many researchers as an integral aspect of persuasion in academic discourse (see Chapter 2). Hedging has been associated with interpersonal functions such as tentativeness, politeness, modesty and caution (e.g. Myers, 1989; Hyland, 1994, 1996). See also Section 3.3.5 on ‘I’ Self-Attribution.

### 3.3.4 Reader + Self-Attribution

This refers to the construction of the inclusive **we** which does not “refer to joint authorship...but to the community of researchers” (Bernhardt, 1985: 167). To try and avoid confusion as to whether the ‘we’ is reader-inclusive, the following examples have been taken from single-authored texts in which the writers refer to themselves as ‘I’.

An example of the reader-inclusive ‘we’ in the data is:

#### ST3.12: PSY1

As a thought experiment we may consider that young adults’ simple reaction times may average 130 ms or less. We know that at least 40 ms are required for transmission through the retina and visual pathway, and that muscle potentials occur some 50 ms before any overt movement begins. We also know that individual neurons cannot fire faster than 1000 spikes per second.

Through explicit personal attribution of propositions to both writer and the reader above, the writer appears to appeal to shared assumptions between him/herself and the reader, and as Bernhardt suggests it is the writer’s attempt “to build bridges across shared knowledge in the discipline” (Bernhardt, 1985: 167). It is worth noting here that even though this use of ‘inclusive we’ has been found in articles across disciplines, it appears to be used quite extensively in economic texts particularly when the writer is describing methods (i.e. procedures, formulae and calculations) where the writer appears to be inviting the reader to take an active part in the step-by-step description/discussion of the practical task involved. This is similar to textbook discourse (see Thetela, 1991, on reader roles in textbooks). The following is an example of this phenomenon:

#### ST3.13: EC25

Assume that the labor supply to a firm that pays  $w$  when all other firms are paying  $z$  is given by  $L^s(w, z)$ .<sup>5</sup> We will assume that this labor supply curve is less than perfectly elastic so that the employer has some monopsony power, the most plausible source of which is labor market frictions. In the simple monopsony model the firm accepts as employees all the workers who want to work at the firm. But, if we introduce monitoring problems as in Shapiro and Stiglitz, then the firm will turn away workers who they believe will shirk. This might be because they are thought to have a particularly high value of leisure or because they are thought to be

particularly adept at shirking and avoiding detection. So, let us denote by  $N^s(w, z)$  the supply of nonshirkers to the firm if it pays  $w$  and other firms are paying  $z$ . We will assume that the supply of nonshirkers to the firm is also less than perfectly elastic.

The above examples thus suggest that the writer and reader both share primary responsibility for the proposition. The fact that the reader is manipulated into sharing responsibility with the writer enables the writer to claim support for his/her proposition, thus making writer responsibility at least higher than if only the writer were to put forward the proposition him/herself. This point can be justified by suggesting that a proposition for which the writer is sole originator is more subjective (and thus less general) than the one for which more people share responsibility.

### 3.3.5 The 'I' Self-Attribution

Here there is explicit attribution of the proposition to the writer which can either be realized by the pronoun 'I' for a single-authored text and the exclusive 'we' for a co-authored text. (While I am aware of the existence of practice of using the 'we' as reference to a single author, in the data I have analysed, the practice has not been very obvious, and therefore I will exclude that use of 'we' from the discussion on 'we' reference in this study). To explore what happens here, let us look at the following invented sentences (1) and (1a) below for the distinction between a non-attributed and a self-attributed statement:

1. He's a liar.
- 1a. I think he's a liar.

In (1), the writer makes a categorical statement that the person (s)he is talking about is a liar and thus accepts full responsibility for the validity of the proposition. In (1a), however, although the writer is the source of the proposition, by attributing the

proposition to him/herself (s)he has made the statement subjective and open to challenge, hence (s)he is no longer responsible in the same full way as in (1). His /her responsibility is further weakened by the modality expressed by think (see Section 3.5 below for the role of modality in writer responsibility). Examples of attributing a statement to the ‘Self’ through 1st person reference from the data are:

ST3.14: AL2

Therefore, whereas in the traditional partnership between structural course book and reference grammar it was fairly easy to see where the two elements met, in the case of the **COBUILD** project that the relationship is, I feel, harder to discern.

ST3.15: AL2

I suggest that the following principles underlie the usefulness of lists in pedagogical grammars: (list given)

ST3.16: AL4

Van Lier (1991) has recently protested against what he sees as an unreasonable bias on the part of Gregg (1989) and of Newmeyer and Weinberger (1988), in favor of SLA theory as the goal of SLA research, to the exclusion of concern with, for example, pedagogical practice. I think van Lier has misunderstood both Gregg and Newmeyer and Weinberger, but, nonetheless, in so far as he simply means that there is more to science than theory, he definitely has a point.

ST3.17: AL6

In addition, we believe it is important in conjunction with classroom observation to triangulate the researcher’s perception of events with some account from participants of how they perceived and reacted to events in class....

ST3.18:AL31

I take for granted that any useful account of imperative meaning, no less than one for indicatives, will have to predict intuitions about coordinating connectives and quantifying determiners.

In the above examples the writer limits the validity of the proposition by ascribing it to him/herself through self-references - I feel, I think and we believe and I take for granted. Myers (1989) refers to the limiting effect of personal attribution by seeing it is a form of hedging. He points out that “scientific knowledge is supposed to be taken as universal; therefore any implication that a belief is personal weakens it” (Myers, 1989: 14). He observes that in scientific or academic writing, personal attribution (as hedging)

is common particularly where the writer criticises the work of other researchers or coins a new term. He argues, for example, that to try and coin a term is in itself a Face Threatening Act (FTA) because other researchers may resist the coinage, and therefore “the introduction of a new term has to be marked by some sign that the writer suggests it only provisionally, subject to its adoption by the community” (Myers 1989: 16). In my data, the link between self-attribution and criticism, noted by Myers, is particularly clear: it appears that controversial areas tend to be associated with a desire by the writer to resort to self-attribution. One interpretation of this link is that it allows the writer to limit responsibility for the claims and criticisms advanced by staking out a personal position which admits the existence of other positions without diminishing the writer’s individual adherence to his/her position. This point will be discussed further in Chapter 6.

### 3.3.6 ‘My text’ Self-Attribution

The writer can avoid primary responsibility by delegating a proposition to the text (either as a whole or to its constituent parts). ‘My Text’ Self-Attribution may be looked at from the point of view of Gosden’s (1993) concepts of macrodiscourse and microdiscourse entities, the former referring to integral units of discourse such as *paper, report, study, thesis, work*, while the latter refers to part, discourse-internal entities, for example, *figure, diagram*, and connected reference items. Examples of macrodiscourse entities in the data are:

ST3.19: EC3

This article models the role of moving, moral aversion, and deficiency costs in determining whether exercising the default option in home mortgage loans is rational. In particular, it provides the basis for the belief that deficiency judgements are the neglected cost component that explains the low incidence of exercise of in-the-money default options reported in the literature.

ST3.20: EC43

This paper concentrates on the second of these possibilities and shows how the solvency of the typical firm is affected by changes in the level of real and nominal interest rates in the wider economy.

ST3.21: AL33

This study indicates that the approach presented in this paper has relevance for English language teaching.

On the other hand, examples of microdiscourse entities are:

ST3.22: AL5

These data support the conclusions of other researchers that compliments tend to be quite predictable (formulaic) in that speakers/writers make most use of a restricted set of syntactic patterns and lexical items....Clearly, these findings should not be generalized to other kinds of written texts. Rather, they simply illustrate how compliments were realized within one particular rhetorical situation.

ST3.23: AL5

In summary, these data offer a description of the syntactic choices these writers made to express complements in one written genre. Because the formulaic nature of the compliments is clearly evident, these findings tend to corroborate the claims of other researchers that speakers rely most heavily on a restricted set of syntactic patterns.

In the examples above, the writer is either reporting or interpreting the results/outcomes of his research. By hiding behind the text as source, the writer to some extent declines responsibility and transfers this to the text either as a process or product of research. The implication, therefore, is that evaluation in propositions associated with the text as source should not be associated directly with the individual writer but with the research investigation itself.

### 3.3.7 Other(s)

At the bottom of the general-specific scale lies attribution to Other(s). In my data the ascribed source is mainly previous research, either individualised or institutionalised.

As has been argued in the previous chapter, there are various reasons for the writer to bring other sources into the text - for example, to accredit existing knowledge in the field or to validate his/her own findings/conclusions (see Swales, 1986; Jacoby, 1987).

The writer can cite a source through either a projecting or non-projecting clause. The following is a typical example:

ST3.24: AL1

Carter (1987:58ff), in a useful survey of the literature on fixed expressions, suggests that several linguistic traditions, by no means confined to the English-speaking world, have contributed to a growing consensus that the linguistic ‘creativity’ of I-linguistics is in need of re-evaluation, and similar views have been expressed recently by Widdowson (1989).

In this example, there seem to be two ascribed propositions. First, “Carter suggests that” is projection and he is responsible for the proposition in the projected clause. In the second part, the writer takes the opportunity to suggest that Carter’s view is shared by Widdowson, but this time there is no projection; we are not told what Widdowson’s words are.

Here one can suggest that by specifying the others as the source of information, the writer is essentially declining responsibility for the evaluation and transferring it to the ascribed source. The full situation, however, is not so simple, as will be seen in Section 3.4 below.

### **3.4 The Writer’s Treatment of Source**

With attribution of information to a specific source, there seem to be a number of things going on simultaneously, not all of which are accounted for simply by the identification of the source. For instance, although it has been widely suggested that attributing information to a source external to the writer implies that the writer detaches him/herself from the proposition in question only to come back later to evaluate it (see Tadros, 1989, on reporting and the prediction of evaluation), it is suggested in this chapter that from the point of view of writer responsibility, the issue is not so simple.

An additional dimension to the degree of writer responsibility can be identified by looking at the way the writer treats the source of information he/she has used. Thus depending on the choice of attribution strategy, the writer can signal either involvement or detachment (see Thompson, 1996b: 521 - 2).

In this area, the study borrows from Thompson and Ye's (1991) concept of *writer's stance*. In choosing a reporting verb, the writer can show his/her own attitude towards the validity of the reported proposition. There are three basic possibilities (NB in Thompson and Ye's terminology 'writer' is the reporting writer and 'author' is the reported writer):

- (i) Factive: the writer portrays the author as presenting true information or a correct opinion;
- (ii) Counter-factive: the writer portrays the author as giving false information/incorrect opinion; or
- (iii) Non-factive: the writer gives no clear signal as to her attitude towards the author's information/opinion. (See Thompson and Ye, 1991, for a detailed discussion of writer acts).

The above notion is potentially useful for measuring the degree of writer responsibility in attributed evaluation in that, by identifying the type of stance carried by a reporting verb, the reader is in a position to correctly interpret the writer's attitude to the ascribed evaluation by looking at whether the writer agrees, disagrees or does not say whether s/he agrees with the source; and hence the degree of writer responsibility can be determined. The categories are used by Thompson and Ye to classify reporting verbs, but in fact they can be applied more generally to reporting as a whole. To illustrate the point being made here, the paper suggests looking at attribution from two angles, which can be termed *attribution-delegated* and *attribution-detached*.



### 3.4.1 Attribution- Delegated

By this choice the writer makes reference to a source in order to agree with it, thereby suggesting that although (s)he is not originally responsible for the proposition, (s)he accepts its validity. Attribution-Delegated can be signalled either grammatically or lexically. Examples of both are given below.

#### 3.4.1.1 Grammatical Signalling

##### (a) The to-infinitive projecting clause

###### ST3.25: AL1

However, to echo Chomsky (1986:8), every child knows, unerringly, that this is not English and no pedagogic grammar draws the learner's attention to such facts, which were, in fact, only noticed quite recently.

##### (b) The as-clause

The writer can signal his involvement in a reported proposition through the use of the 'as' clause. This point is noted by Thompson (1994) who argues that:

if...you use a reporting adjunct with 'as', you show that you definitely accept the truth of the reported message. In fact, in this case you are often presenting the other speaker or writer as agreeing with your ideas rather than the other way round (Thompson, 1994: 53).

Examples of the as-clause from my data are:

###### ST3.26: AL1

As Carter and McCarthy (1988:42) observe, it was Wilkins who reminded the ELT world in 1972 that 'Without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed' (Wilkins 1972: 111).

###### ST3.27: AL18

As Holquist (1983) puts it, whereas formalist theories locate meaning in texts, dialogic theories find it between writers and readers.

### 3.4.1.2 Lexical Signalling: The Reporting Verb

Here the writer chooses an inherently positive evaluative reporting verb. For instance point out expresses positive evaluation, indicating that the writer accepts the validity of the proposition (compare Thompson and Ye's, 1991, 'factive' verbs). A few of the reporting verbs in context are:

ST3.28: AL50

Tarone (1985) has shown that attention to form has a clear effect on accuracy and performance.

ST3.29: EC6

For instance, Quelch et al. (1987) pointed out that rebates on durables may be large in absolute dollar value yet low in percentage-of-sale terms.

### 3.4.1.3 Explicit Positive Evaluation

By combining grammatical and lexical signalling, the writer can explicitly signal attribution-delegated in the discourse through positive evaluation of the ascribed source in a separate proposition. This explicit signalling may either be prospective or retrospective. Examples ST3.30 and ST3.31 below are illustrations of prospective signalling:

ST3.30: AL2

(1) The claim made by the advocates of the social, psychological, and affective position (hereafter, the SPA claim) is clear. (2) As Long states, 'variables such as attitude, motivation, empathy, self-esteem, ego-permeability, and perceived social distance enter into varied combinations to impede [or to enhance] SLA...' (ibid.). (3) This claim has motivated over thirty years of research. (4) Long is absolutely correct, however, that no principled way has been found to weight the SPA variables, so that it would be possible to know 'just which of these variables, in what combinations, and to what degree, are supposed to affect learning, and why?'. (5) In this sense the claim is not precise. (6) Long is also correct in his observation that there are serious problems in the measurement of SPA variables. (7) However, in the light of the Quine-Duhem thesis, it might be useful to examine the alleged falsifying studies to see what we would have to ignore (or believe) in order to agree that the SPA claim has been falsified and to illustrate how difficult it is to make a case for falsification.

ST3.31: AL35

I am in agreement with Besnier (1986), Biber (1986, 1988) and Brown and Fraser (1979) that for an accurate understanding of how discourse works, we must consider the interaction of multiple variables or co-occurring features.

This explicitly positive evaluation may also be signalled through explicit evaluation of the reporting even if the verb itself is non-factive as in:

ST3.32: AL18

Widdowson rightly observes that this treatment of linguistic forms wholly in terms of representation presumes that linguistic signs and meanings they denote are isomorphic; meaning is entirely circumscribed by the independent semantic value of the sign.

### 3.4.2 Attribution-Detached

This is the opposite of attribution-delegated in that here the writer cites a source from which he detaches himself (disclaimer). This means therefore that its realization is the opposite of that in Section 3.4.1 above. In the data used for this study, the most common choice for signalling Attribution-Detached is the reporting verb.

Reporting verbs marking attribution-detached can either be counter-factive or non-factive (compare Thompson and Ye, 1991). The former are inherently negative whereas, by the use of the latter, the writer does not show any attitude to the ascribed source. Non-factive verbs are those verbs which Tadros (1989) suggests predict evaluation elsewhere in the text. Whereas by the choice of factive and counter-factive verbs the writer is simultaneously involved in the evaluation of the ascribed information, by the choice of non-factive verbs (s)he detaches him/herself from the ascribed information and allows him/herself to evaluate the proposition elsewhere. The two examples below illustrate non-factive verbs and counter-factive verbs, respectively:

ST3.33: EC3

For example, Kau and his associates conclude that there is no significant difference between a mortgage insurance contract with 100 percent coverage and one that provides coverage for the top 25 percent. Our results suggest this generalization cannot be confidently applied to antideficiency jurisdictions.

ST3.34: AL25

The ability to explain such a gaffe is not an adequate excuse, and Owen points to what appears to be an error of judgement in the omission of the word *propose* from this section of the

grammar. He claims that it is an error of observation, but we would deny that, since the facts could hardly have been missed.

In the first example, the writers use the reporting verb conclude which is non-factive in that it does not tell us what the writers' attitude is towards the validity of the ascribed proposition. It is only in the subsequent sentence that the writers negatively evaluate this, thereby explicitly distancing themselves from it. In the second example, however, the reporting verb claim is at the same time the co-writers' negative evaluation of the reported source, from which they distance themselves not only through the counter-factive verb claim but also explicitly saying so in the subsequent clause - 'but we would deny that'.

In this section, the suggestion made is that it is not enough to identify the source of information for the proposition but it is also important to be aware of the way the writer treats that source - that is, whether (s)he delegates responsibility to the source or detaches him/herself from it. This suggests that although it has been argued that reporting implies detachment, the issue is more complex: there is a range of factors to consider such as lexical signalling and evaluative propositions which accompany reporting verbs and which may influence either writer detachment or involvement.

Figure 3.2 overleaf illustrates the varying degrees of responsibility in cases where another source is specified. The figure demonstrates a basic picture of the effect of source on writer responsibility.

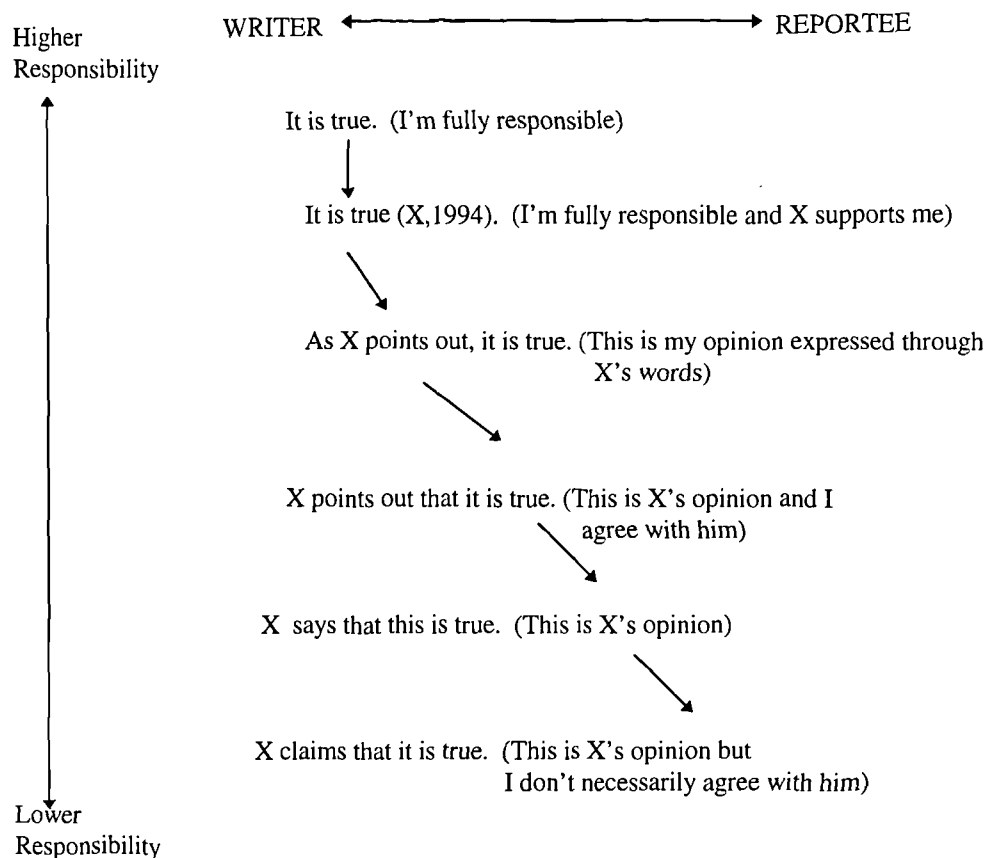


Figure 3.2: The cline of Writer Responsibility as determined by the treatment of Source

However, the data indicates that in continuous discourse, the picture is even more complex than Figure 3.2 suggests. To illustrate this point, I use a short stretch of discourse (paragraphs 11 and 12) from a linguistics article based on the comparison between two lectures in a botany laboratory by two teaching assistants (one English and the other Korean): the comparison is based on the effect of the syntactic structure of each of these in terms of discourse comprehensibility.

ST3.35: AL35

11. (1) In addition, a number of studies have examined the role of complex syntax in text comprehensibility. (2) Anderson and Davison (1988), summarizing the findings from readability research, note that a large body of evidence exists which suggests that complex clause structures, when used appropriately, facilitate text comprehensibility. (3) This is particularly so if the complex structures include lexical connectives. (4) Pearson (1975) showed that children who are native speakers of American English prefer complex sentences joined with explicit connectives (such as *because*) and actually understand them better than a series of paratactic structures. (5) Irwin and Pulver (1984) found that for both elementary school children and college students comprehension was greater for causal relationships

expressed by hypotactic structures containing explicit logical markers than for paratactic constructions. (6) Davison and Kantor (1982) examined the effect of revising text by splitting hypotactic structures in native-speaker-produced text into a series of less complex, paratactic structures. (7) They argue that, in many instances, the more complex structures not only marked subordination, but also contained semantic information about the meaning relations between the subordinate clause and the independent clause. (8) The simplified version which presented the same basic propositional content in separate independent constructions failed to make the meaning relationship among clauses explicit, leaving it to the reader to infer the relationship, and thereby actually decreasing comprehensibility through syntactic simplification.

12. (1) Anderson and Davison (1988) point out that text difficulty is not linked in a simple way to the complexity of the syntax used in a text. (2) They conclude:

if the context fits the complex structures and justifies its use, the structure may not be difficult to understand. But in other cases there may be a mismatch between features of a sentence and the context in which it occurs, and in that case, it may well be difficult for a reader....

(3) In other words, if the complex syntactic structure is used to appropriately signal logical and prominence relations in ways which match the listener's expectations, comprehensibility is increased. (4) However, the mere presence of hypotactic structures does not guarantee increased comprehensibility. (5) If the complex structures highlight the wrong bits of information or signal relations in a confusing manner, if they are used in a way which does not match audience expectations, hypotactic constructions can lower comprehensibility.

The two chapters above present the writer's support of the findings of previous research. The following is a note summary of what is happening in the text in terms of the averral and attribution of propositions:

s11.1 - averred: prospective signalling.

s11.2 - 'note' = factive: not in itself semantically, but in discourse used when the writer is not going to disagree (Thompson, personal communication).

s11.3 - averred in form but fairly clearly reported in substance. This is possible because s2 = factive (i.e. delegated averral).

s11.4 - 'showed' = factive.

s11.5 - 'found' = factive.

s11.6 - 'examined' = non-factive (research - process verb).

s11.7 - 'argue' = non-factive (normally predicts evaluation to come - Tadros, 1989)

s11.8 - averred but reported: in the context of reporting research the writer seems to accept the findings above because there is no overt evaluation to the contrary.

s12.1 - 'point out' = factive

s12.2 - 'conclude' = non-factive, but in the context of a report already signalled above as factive.

s12.3 - 'in other words': signalling that the writer will now aver what she has so far attributed.

s12.4 - 5 : the continuation of the averral: the writer's own argument is based on what she has reported.

The most obvious function of this stretch of text is that of reviewing past literature on the topic in question, and hence the majority of the sentences are attributed to specified sources. As has already been argued attributing a proposition implies limiting its generality and thus diminishing the degree of writer responsibility. However, it has also been argued above that even in attribution there are degrees of involvement with or detachment from a proposition. In this stretch of text therefore the general impression is that the writer is in agreement with the authors whose claims she has used to support her own findings, which is signalled mainly through the choice of reporting verbs. First the writer's explicit agreement with the authors (and consequently with the content of their propositions) is signalled by factive verbs - 'note' (s11.2), 'showed' (s11.4), 'found' (s11.5) and 'point out' (s12.1). Reflecting the fact that the writer agrees with the authors, some of the statements above are followed by a kind of averral which seems to be a continuation of the reported propositions. An example is that of s11.3 which in the context of the text is a continuation of the report in s11.2, though with no explicit signal. This suggests that the writer is happy to incorporate the reported authors' ideas into her text. There are however cases where the writer detaches herself from the proposition through the use of non-factive (or neutral) verbs, for example, 'argue' (s11.7) and 'conclude' (s12.2). Even here there is no sign of negative evaluation of the reported propositions. Sentence s11.7 is followed in s11.8 by what appears to be an averred statement but which in content seems to continue the argument in s11.7 rather than contradict it. In s12.2 'conclude', though a non-factive verb, presents a quoted version of the proposition in s12.1 which has already been presented in s12.1 as factive - i.e. 'point out'. This is followed by a clear signal of the writer's involvement in

s12.3 'in other words' which is the writer's averral but continuing the argument as though it were her own. The last two sentences are a continuation in which the writer now takes over the discussion through the use of categorical assertions- and hence the writer's acceptance of full responsibility.

### 3.5 Modification of Certainty

As has already been mentioned earlier in the chapter, the source of information and the writer's treatment of that source provide only a partial explanation of the degree of writer responsibility for evaluation in the text. Thus, it is not enough only to identify the source or whether the writer grammatically or lexically signals agreement or disagreement with such a source. It is equally important to be aware of the third variable which affects writer commitment to the evaluation made in the text, that of modality in the broadest sense (modification of certainty in Hunston's (1989) terms). It will be argued below, for example, that even a non-attributed statement, although at the highest level of writer responsibility cline, does not always guarantee full factuality of information once it is subjected to modalisation. Conversely even information that is attributed to a specific source of information can move up the factuality or writer responsibility scale, as determined by the writer's choice of modification for it. Thus modality can upgrade or downgrade the degree of writer responsibility in text.

The crucial role played by modality is captured by Lyons (1977) who looks at the differences between categorical statements and their modalised counterparts and points out that:

It would be generally agreed that the speaker is more strongly committed to the factuality of "It be raining" by saying *It is raining* than he is by saying *It*



*must be raining*. It is a general principle, to which we are expected to conform, that we should always make strongest commitment for which we have epistemic warrant. If there is no explicit mention of the source of our information and no explicit qualification of our commitment to its factuality, it will be assumed that we have full epistemic warrant for what we say. But the very fact of introducing 'must', 'necessarily', 'certainly', etc., into the utterance has the effect of making our commitment to the factuality of the proposition explicitly dependent upon our perhaps limited knowledge (Lyons, 1977: 808 - 809).

In order to get a clear picture of the general effect of modification of certainty on a proposition, it is important to look at various degrees of modification chosen to modify certain propositions and then look at how the validity of the propositions is affected. Figure 3.3 below illustrates the combined effect of both the presence of source and modification of certainty on the degree of writer responsibility.

Looking at Figure 3.3, it becomes clear that although the more general the source of information, the higher the degree of writer responsibility, modification of certainty can affect this by either upgrading or downgrading the strength of this responsibility.

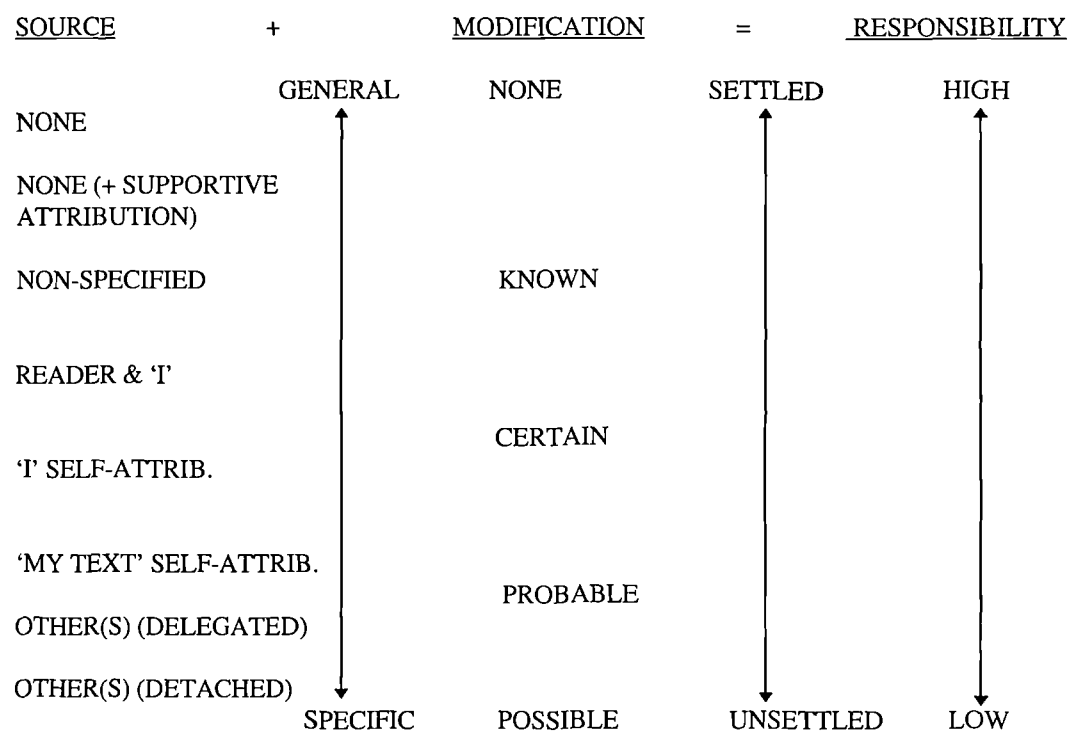


Figure 3.3: The combination of source and modification of certainty on Writer responsibility

As has already been mentioned, for example, even a non-attributed statement can lose its categorical status once it is qualified by modification. Let us take one unmodified sentence as an example from the data and assign it different types of modification and see what effect this has on the status of the original proposition (see Figure 3.4 below).

The glossed examples in Figure 3.4 support the assumption already made that even though the proposition is at the highest level of the source cline, when it is opened to modification, such a proposition can move down the certainty-uncertainty scale and therefore markedly affect writer responsibility.

#### ST3.36: AL5

In this case, the use of polite language to maintain a harmonious interpersonal relationship is crucial.

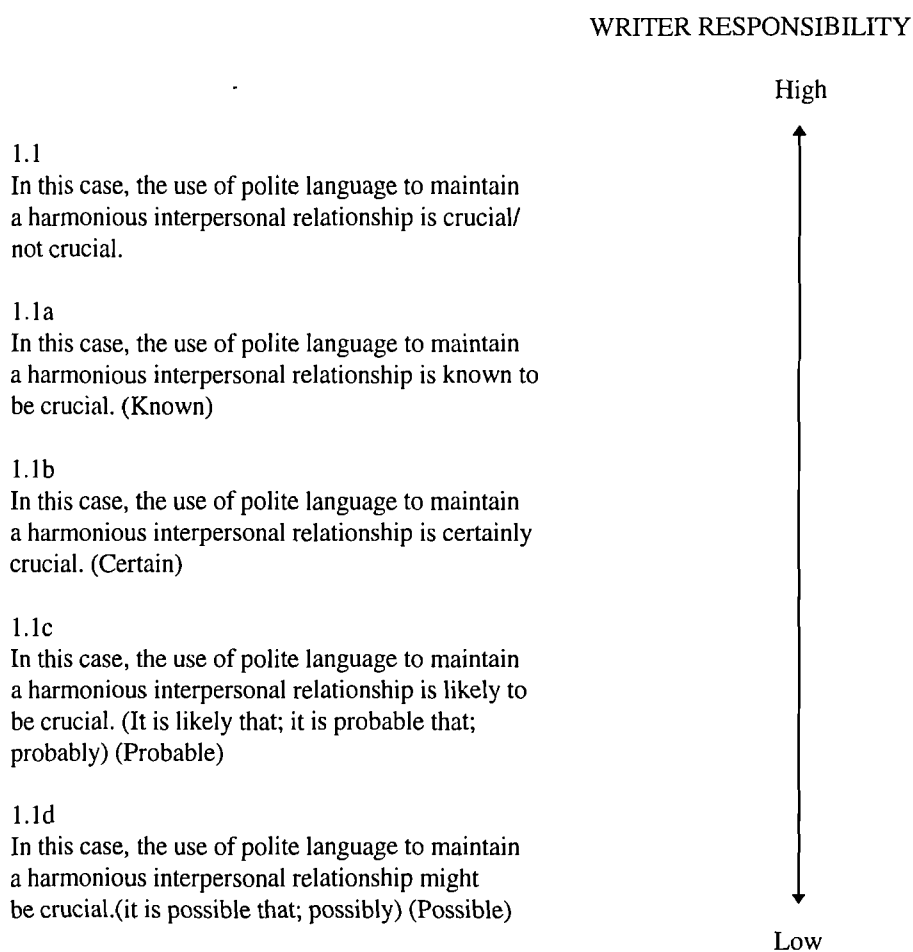


Figure 3.4: A cline of responsibility based on modification of certainty

The reverse is true in that a proposition that has been attributed to a specific source such as 'Others' can move up the certainty-uncertainty scale depending on the type of modification chosen by the writer. However, a proposition attributed to a specific source can never go beyond a certain level as the mere presence of source has already restricted its status. This restriction is illustrated by the three examples below each of which is followed by a glossed version with the modality changed to a higher certainty type, or removed to make the attributed proposition a categorical one.

ST3.37: AL2

Schumann (1993) suggests that research might be conducted at this level by examining the dream content of learners who are acquiring a second language in the target language environment.

Schumann suggests that research will be conducted at this level by examining the dream content of learners who are acquiring a second language in the target environment (Glossed version = higher certainty).

ST3.38: EC19

The paper suggests that the combination of altruistic voting and campaign contributions may prevent the 'tyranny of the majority'.

The paper suggests that the combination of altruistic voting and campaign contributions prevents the 'tyranny of the majority' (Glossed version = attributed categorical).

ST3.39: H3

We shall return in the conclusion to some general factors which we believe may have been at work in restraining nuptiality relations between the members of the various columns.

We shall return in the conclusion to some general factors which we believe are at work in restraining nuptiality relations between the members of the various columns (Glossed version = attributed categorical).

ST3.40: AL8

More specifically, I believe that the existence of adult-child differences is likely to arise from a variety of factors other than (or in addition to) a critical period.

More specifically, I believe that the existence of adult-child differences arises from a variety of factors other than (or in addition to) a critical period (Glossed version = attributed categorical).

What the glossed examples illustrate is that while higher certainty can increase the degree of certainty for a proposition, the fact that the proposition is attributed does not

allow for full writer responsibility. A good example is that of ST3.40 whose glossed version presents the reported proposition as categorical 'arises' instead of the original 'is likely to arise' - here the writer's involvement has strengthened but the overall responsibility is still low. This indicates that irrespective of its certainty level, an attributed proposition can never reach the factual status and consequently the highest degree of writer responsibility.

The examples above also illustrate another way in which the combination of source and modification of certainty may affect writer responsibility: that is through modification in the signal of source. This is typically done through the choices described earlier - lexical modal verbs (e.g. suggest vs. point out). The effect can be seen by varying both the reporting and reported clauses: if we take ST3.38, for example, we can show it four times:

1. The paper suggests that the combination of altruistic voting and campaign contributions may prevent the 'tyranny of the majority'.
2. The paper suggests that the combination of altruistic voting and campaign contributions prevents the 'tyranny of the majority'.
3. The paper points out that the combination of altruistic voting and campaign contributions may prevent the 'tyranny of the majority'.
4. The paper points out that the combination of altruistic voting and campaign contributions prevents the 'tyranny of the majority'.

These are ordered in terms of increasing responsibility: by the time we reach the fourth version, we have categorical contribution-delegated, which is very close to full writer responsibility.

A further variable is that of modality added to the signal of source - this is rarely found with reference to author acts yet it is common in writer acts (Thompson and Ye, 1991: 375). Using their data, Thompson and Ye provide the following as a rare example of modality added to the signal of source with reference to author acts:

Thus the claims that confusion in reading in a foreign language often results from the predictions that are made by the reader being based on the strategies associated with the native language of the reader (what Yorio (1971) *might call* native language interference). [Alderson 1984:10]

Source: Thompson and Ye (1991: 375).

I have not found any example of this type in my data but I have found this combination present in self-reporting. A similar example to Thompson and Ye's example in my data is where the same "might call" is used in self-reporting:

ST3.41: H30

However, the first breath of criticism about our singular constitutional arrangements usually prompts a version of what I might call the 'de Gaulle defence', accompanied by a hymn of praise to the flexibility their lack of precision permits.

Another example is that where the writer is referred to through the more general term 'one' as in the following sentences:

ST4.42: EC24

For labor, one can reasonably assume that the flow of services is proportional to total hours of work....

ST3.43: EC36

One might think that there is a fundamental inconsistency in constructing a model that must be capable of exhibiting accelerating inflation when agents have rational expectations.

Another common occurrence of modality added to source (in which the writer is the implicit source) can be found in "impersonal structures or agentless passives" in which "the presence of a modal verb is normally a signal that the writer is the understood agent" (Thompson and Ye, 1991: 375). Examples of this occurrence from my data are:

ST3.44: EC23

Alternatively, it might be argued that these results can be explained at least in part by the more general hypothesis that the difference between cash equivalents of prospects evaluated in isolation will be enhanced by a direct comparison between them.

ST3.45: PSY25

From this line of research it may be suggested that problem-solving is primarily search-driven for the novice but schema-driven for the expert.

In addition to a combination of source and modality, another important option for restricting the generality of a proposition is by hedging, which has been shown to be an integral part of academic discourse in Chapter 2 above. Hyland says about the role of this phenomenon in discourse:

Hedging is an expression of tentativeness and possibility and it is central to academic writing where the need to present unproven propositions with caution and precision is essential (Hyland, 1996: 433).

Many writers have focused on hedging as realized through modality and personal reference as has already been shown above. However, hedging may be realized in other ways. The following show some examples of hedging in which modality is not directly involved.

ST3.46: EC21

As I envision it, exchange-traded perpetual claims on a cash flow such as a national income are contracts, like future contracts, whose total standing value is zero; for every long position there is an equal and opposite short position.

ST3.47: EC21

Very roughly speaking, we might think that the standard deviation of one-year change in price of a claim on a cash flow might be the standard deviation of the ten-year percentage change in the cash flow divided by the square root of ten.

ST3.48: EC24

The paper reports a somewhat lower estimate of 2.7 per cent total factor productivity growth for the aggregate Korean economy during the period 1963-1982.

As can be seen above, the examples given work quite differently from modality in that they restrict the generality of a statement not so much in terms of certainty but in terms of the scope of its validity. Other expressions of hedging are 'some' and 'in many

cases', which mean that the writer is not claiming that the proposition is true in all cases - thereby restricting the generality of the proposition. For examples of hedging in academic writing, see Hyland (1994); in scientific research articles, Myers (1989) and Hyland (1996); and in medical journal articles, Salager-Meyer (1994).

### 3.6 Conclusion

After having outlined separate systems of analysis for source and modification of certainty, it is worth bringing the two aspects together with a practical example to show how they can work together to either upgrade or downgrade the strength of writer responsibility. The following sample of text will help to illustrate this interdependence of the two aspects in determining the degree of writer responsibility.

ST3.49: AL6

4.(1) Frederiksen and Collins (1989) introduce a concept similar to 'washback validity'. (2) They use the term 'systemic validity', which they define as follows:

A systemically valid test is one that induces in the education system curricular and instructional changes that foster the development of the cognitive skills that the test is designed to measure. Evidence for systematic validity would be an improvement in those skills after the test has been put in place within the educational system for a period of time (1989: 27)

(3) However, to our knowledge, this form of validity has never been demonstrated, or indeed investigated, nor have proposals been made as to how it could be established empirically rather than asserted. (4) Moreover, it is not at all clear that if a test does not have the desired washback this is necessarily due to a lack of validity of the test, as Morrow and Frederiksen and Collins simplistically imply. (5) It is surely conceivable that other forces exist within society, education, and schools that might prevent washback from appearing, or that might affect the nature of washback despite the 'communicative' quality of a test. (6) This can then be hardly attributed to a problem with the test. (7) Whereas validity is a property of a test, in relation to its use, we argue that washback, if it exists - which has yet to be established - is likely to be a complex phenomenon which cannot be related directly to a test's validity.

This excerpt has been taken from the fourth paragraph of an article by Alderson and Wall (1993) which questions the existence of the notion of 'washback' in language teaching and testing. The interrogative form of the title of the article 'Does washback

exist?' might be seen to denote lack of conviction by the authors (See Chapter 6 for the importance of article titles).

Coming to the paragraph above, this is at the stage where the writers are reviewing literature supporting the washback hypothesis. The paragraph is in general terms not in support of the concepts of 'washback validity' (discussed in Paragraph 3 of the article) proposed by Morrow (1986) and 'systemic validity' proposed by Frederiksen and Collins (1989). It is important to see how both source and modification of certainty work together in continuous discourse to affect the degree of writer responsibility.

First sentences s4.1 and s4.2 are attributed to the quoted authors Frederiksen and Collins, and the writers detach themselves from the concepts mentioned through the use of non-factive reporting verbs - 'introduce', 'use' and 'define'. These non-factive verbs predict evaluation to come later in the text. The evaluation in fact comes immediately in s4.3 where the writers put forward a proposition in which there is a great deal of negative evaluation of the cited sources; for example, *systemic validity* is said to have **never been demonstrated**. Although this is a very strong criticism of the concept, the generality of the proposition is restricted through a hedge 'to our knowledge'. This is a form of self-attribution and indicates that the authors are expressing a personal opinion, and that they are aware of the possibility of opposing views on the subject and therefore have hedged their criticism. In the second part of s4.3, there is a low-value modality ('could'). This appears in a report of what has not been done (see Thompson and Ye, 1991, on negation with reporting verbs); and the modality here serves to reinforce the writer's scepticism as to the possibility of such



proposals being made. This personal stance is carried over by s4.4 in which the writers still make reference to their own knowledge through 'it is not clear'. This expression can also be seen as reader-inclusive in that it refers to perception modality (the effect of perception modality on source has been discussed in Section 3.3.3.2 above). Here the writers go on to detach themselves further from the related concepts of 'washback validity' and 'systemic validity' by attaching a lexically evaluative item 'simplicistically' to the signal of attribution 'imply'. It is worth noting that this signal comes in an 'as' clause, which is normally used to signal attribution-delegated, as mentioned earlier. Here, however, the preceding negative, and the non-initial position of the 'as' clause mean that the evaluative function is reversed and the signal indicates a disclaimer and negative evaluation.

In s4.5 we see the phenomenon of reader inclusion continued through perception 'it is surely conceivable' implying shared knowledge between the writer and the reader (see Bernhardt, 1985). Reinforcing the invitation of the reader into sharing the responsibility, the reported proposition is hedged through modification 'might' as in 'might prevent' and 'might affect'. In s4.6 the source of the proposition is non-specified: this is signalled through passivisation 'this can hardly be attributed' implying the inclusion of not only the reader but everyone else. In the last sentence s4.7 the writers summarise the argument by yet again taking a personal stance through hedging 'we argue' (self-reference + non-factive verb). In this sentence there is also a great deal of uncertainty going on - for instance, the hypothetical - 'if it exists' and a negative evaluation of the notion of validity - 'which has yet to be established' (i.e. by you and me and everybody) and that the writers' speculation that should washback exist it is

likely (low certainty) to be a complex phenomenon. Thus their final word in the paragraph on washback is simultaneously combative (they are directly contradicting Frederiksen and Collins), restricted to being a personal view, and non-categorical. It seems likely that the last two of these features are to a large extent determined by the first.

In this paragraph, the writers distance themselves from the concept of washback through explicit signals of source as well as various forms of modification (both modality and hedging). The bringing in by the writers of the authors' claims was in order to knock the claims down in preparation for the introduction of alternative findings/claims. There is also a great deal of modification brought in through modality and hedging to mitigate the writers' own claims which indicates both subjectivity of opinion as well as signalling tentativeness and caution. This indicates the writers' lack of conviction about the whole concept of washback, the evidence for which is continued in Paragraph 5 of the article which I present below (NB. This is used simply to support the argument about the writers' detachment from the washback hypothesis, and not for the purpose of detailed analysis).

5. (1) It seems to us to be important to investigate the nature of washback first, and the conditions under which it operates. (2) Only once we are able to describe what actually happens, will we be in a position to explore what 'causes' these effects. (3) And only after we have established causal relationships will we be in a position to explore whether we are justified in relating washback to a test's validity. (3) Thus, talk of washback or systemic validity is at best premature, and at worst ill-conceived.

To summarise what the present chapter has tried to do, it is useful to step back and to see the two dimensions of choice, generality and settledness, as relating to two different aspects of the text, namely, *SOURCE* and *MESSAGE*. The former is an optional

element of the message in that we can have a sourceless message (see the concept of non-attribution above). The latter is however obligatory because we cannot have a text without a message (proposition). Where the *Source* is signalled, the writer can say whether it is reliable, unreliable or s/he can opt to remain silent on the matter (for instance, through the use of a non-factive reporting verb). We have also suggested that assigning a message to a source is a kind of hedging and therefore can on its own act as some modification of the message. For the *Message*, there are two kinds of treatment: the message can be either categorical or modified. Where it is categorical, the writer accepts full responsibility; but (s)he declines that responsibility (with varying degrees) depending on his/her choice of modification of certainty. All in all the source and the message, and the way each is treated by the writer, looked at together, can give the reader a clearer picture of the overall purpose of the writer's text.

The concepts of source and modification of certainty have been seen by many writers as important negotiating aspects of scientific discourse. In terms of source, an important pedagogical point has been made by Tadros (1993) in relation to the concepts of averral and attribution. She argues that:

It is very important to alert students to the various voices they hear within the same text - to the signals of their onset and offset. It is very important that they should be able to discriminate between the author's voice and the voices of those the author invites to take part in the creation of the text. (Tadros, 1993: 113).

Tadros argues that many students have a problem of signalling the source of their argument. She says that "they do not clearly signal when they have switched from expressing their own views to reporting or vice versa, with the result that they may be accused of at best ambiguity and at worst plagiarism" (ibid.: 113).

In terms of modification of certainty, it has been argued in this chapter that modification - modality and hedging - is an integral part of persuasion in the ARA. It accounts for interactive aspects such as politeness, caution, modesty and signalling certainty which are central to negotiating scientific knowledge.

The dimension of writer responsibility is crucial to the study of evaluation in that there are many evaluations which go on in the text, some of which are conflicting. It is important for the reader to know what it is that the writer is saying in the text and which evaluation to associate him/her with. For instance the evaluation in a proposition that is categorical will take dominance over that where the writer is hedging or where the writer has attributed the proposition to another source. The distinction between attribution-delegated and attribution-detached which has been used in this analysis of the writer's treatment of source (Section 3.4) is useful in making observations about the writer's intentions of bringing other sources (and their claims) into his/her own text (i.e. to support own findings/claims or to refute the authors' claims in order to bring in alternative ones). In this way, as readers we are able to know which proposition can or cannot be attributed to the writer and why: this implies that it is possible to know for which evaluations in the text the writer can be held responsible (i.e. those which appear in propositions for which the writer accepts full responsibility).

## CHAPTER 4

### EVALUATED ENTITIES AND PARAMETERS OF VALUE IN ACADEMIC RESEARCH ARTICLES

#### 4.1 Introduction

This chapter (based on Thetela, 1997) is concerned with the second dimension of evaluation as proposed by the study - parameters of value in the ARA. Before going into the actual analysis carried out in this study, it is useful to reiterate some of the important assumptions on which this chapter is based. First as has been discussed, the study assumes the existence of a specialised register of the ARA which is influenced by aspects of ideology and genre of scientific investigation (see the hierarchical relationship among register, genre and ideology by Martin, 1992, discussed in Chapter 2 above). If we take register to be “what you are speaking at the time, depending on what you are doing and the nature of the activity in which the language is functioning” (Halliday and Hasan, 1989: 41), it is reasonable to assume that the writer’s choice of evaluation should be harmonious with the register of the text and thus relatable to the ideology of which it is an expression. This assumption is shared by Hunston (1989) who sees evaluation as register specific and suggests therefore that when analysing evaluation:

Rather than suggesting that some value-words are ‘universal’ and others are ‘register-specific’, however, it may be more profitable to deem all evaluation register-specific, but to note that many registers share sets of value judgements (Hunston, 1989: 185).

With the above theoretical basis underpinning the study, the central question should, therefore, be: What are the desirable qualities (Value Orientation) within the ARA and

how are they expressed? This question implies that in the ARA the things evaluated and the terms in which they are evaluated are predictable.

Another assumption that has been made in this study is that evaluation in text is not always explicitly signalled but can also be implicit. As has been discussed in Chapter 2, evaluation is instantially created by the text and what is evaluative in one text might not be evaluative in another - central to the identification of evaluation in text is that of recognising the Goals of the text which are both personal and institutional (Hunston, 1989). Thus anything which helps towards the achievement of these goals has a positive value whilst anything which detracts from that achievement has a negative value (*ibid.*: 204). While the evaluation in this study is based on goals, it is important to say that in this chapter I use for my discussion relatively non-problematic and explicit cases of evaluation to support the points I am raising. Examples of implicit evaluation are discussed in detail in Chapter 6 below.

This chapter employs a basically data-driven method of analysis. That is, I first look for evaluation signals in the text for any frequent occurrences of the same patterns of use. I use these frequencies (as well as my intuitions) to formulate some hypotheses about possible categories of evaluation. Having set up provisional categories, I then go back to the data to find whether there are other occurrences which do not fit into the provisional categories. I use the odd occurrences to reformulate my hypotheses and thus refine the proposed categories.

In this chapter I focus especially on which entities in a text are evaluated and in what terms. This is closely related to Hunston's (1993b) exploration of the relationship

between evaluation and ideology in scientific writing. My main aim is to investigate the following:

- (i) the ‘things’ in ARAs to which evaluation is attached;
- (ii) the kind of qualities/values used to judge these ‘things’;
- (iii) whether these qualities can be reduced to a small number of predictable categories.

I am aiming at a broad but simple classification of the entities and values which in a pedagogical context (i.e. in EAP) can then serve as a kind of check-list to help the reader sort out the evaluations being made. This hopefully will enable the reader to correctly identify the viewpoint being propounded in papers that (s)he reads. In addition, these categories should reflect the ideological values which underpin the whole process of the pursuit of knowledge in academic fields.

#### 4.2 Evaluated Entity (EE) and Ascribed Value (AV)

The study uses two main concepts - Ascribed Value (AV) and Evaluated Entity (EE). While AV refers to the evaluation which is bestowed on a ‘thing’, EE refers to the ‘thing’ in the ‘real’ world on which value is bestowed. It is important to stress that the EE does not refer to the language item used to refer to the real world ‘thing’. Making this distinction is important as ST4.1 below illustrates:

ST4.1: PSY1

(1) *Evidence from laboratory studies is, as usual, much less rich or ambiguous.* (2) **There is evidence** that the middle-aged have difficulty with laboratory problem-solving tasks (Rabbitt, 1974). (NB. Italics and boldface type have been added for emphasis).

In the text above the expression of evaluation varies from s1 to s2. In s1, on the one hand, the phrase **much less rich or ambiguous** is a negative evaluation of the entity *evidence*. In this sentence, the EE is expressed by the subject while the AV is

expressed by the complement. The grammatical structure of the sentence makes it easy to separate the entity from the evaluation. In s2, on the other hand, the situation is more complex. Here the lexical item *evidence* expresses both the entity and the evaluation. *Evidence* can be seen as a label for real world entities such as figures, statistics or tables. From the perspective of evaluation, on the other hand, the fact that something is labelled 'evidence' and not a 'table', for example, is evaluative. If we take into account that the major goal of scientific research is to establish facts, **evidence** can thus be seen as positive evaluation because of its contribution to this goal. Thus in this case there seems to be a 'fusion' of the EE and AV in the term *evidence* which makes it difficult to separate the two as was possible in s1. In order to keep them separate in this chapter (as well as in the rest of the thesis), therefore, italics will be used to identify evaluated entities while bold type face will be used for all ascribed value. Thus *evidence* refers to an entity whereas **evidence** is the lexical realization of ascribed value; where a term expresses both functions, the two fonts will be used for identification.

### **4.3 Research-Oriented Evaluation (ROE) versus Topic-Oriented Evaluation (TOE)**

Of the evaluation signals identified in the texts, there were a significant number which appeared contradictory to the overall evaluative trend of the research paper. In order to find out how evaluation works through the text, it seemed reasonable to use this contradictory evaluation as the basis for beginning to examine what kinds of entities evaluation is attached to. Text ST4.2 below is used to illustrate this examination.



## ST4.2: PSY1

(1) Evidence from laboratory studies is, as usual, much less rich or ambiguous. (2) There is evidence that the middle-aged have difficulty with laboratory problem-solving tasks (Rabbitt, 1974). (3) From the beginning of psychometrics it was recognized that test scores change sharply during the lifespan, and early standardizations of tests took this into consideration by 'age-weighting' scores of individuals aged 50 and over to estimate equivalents for their young-adult 'Iqs'.... (4) Recent laboratory studies of complex tasks tend to confirm, but also strongly qualify, these signs of very early change. (5) For example Rabbitt, Barneji, and Szemanski (1989) gave individuals aged from 18 to 36 years 5 hours of training on a complicated interactive video game, and found that average performance fell with chronological age even when the effects of variance associated with IQ scores and with previous experience at video games had been partialled out. (6) The interest of this result does not lie in the demonstration of an 'early age-effect' but rather in the precise nature of the change observed: (7) there was no evidence that age between 18 and 36 affected the rate at which individuals improved with training, but because older individuals performed less well, during their very first sessions of practice, and learned the game no faster than their juniors they still lagged behind when training was stopped. (8) The importance of this result is that it shows that age may affect the levels of performance which people attain at any point during an unusually prolonged experiment, but without also altering the rate at which they learn a complex skill.

It should be noted that to keep the analysis clearer at this stage, not all cases of evaluation in the text will be used. From the text, entities can be seen to fall under two major categories (Sets A and B) as illustrated by Tables 4.1 below and 4.2 overleaf.

## SET A ENTITIES

SENTENCE	ENTITY	EVALUATION
s1	<i>evidence from laboratory studies</i>	<b>much less rich or ambiguous</b>
s2	<i>evidence</i>	<b>there is evidence</b>
s4	<i>recent laboratory studies of complex tasks</i>	<b>tend to confirm but also strongly qualify</b>
s6	<i>this result</i>	<b>interest</b>
s7	<i>evidence</i>	<b>there was no evidence</b>
s8	<i>this result</i>	<b>importance</b>

Table 4.1: Research-oriented evaluation

In Set A the EEs, for example *studies*, *evidence* and *results*, refer to aspects of the research process proper. Because these entities are directly related to the research paper and its purpose, they can be seen as research entities and their evaluation, for instance **importance** or **interest**, as research-oriented evaluation (ROE).

## SET B ENTITIES

SENTENCE	ENTITY	EVALUATION
s2	<i>difficulty</i> (way of coping)	the middle-aged have <b>difficulty</b>
s3	<i>test scores change</i>	<b>sharply</b>
s4	<i>tasks</i>	<b>complex</b>
s5	<i>interactive video game</i> <i>average performance</i>	<b>complicated</b> <b>fell</b>
s7	<i>performance of older individuals</i> <i>older individuals learning of games</i> <i>older individuals</i>	<b>less well</b> <b>no faster than their juniors</b> <b>lagged behind</b>
s8	<i>age</i> <i>experiment</i> <i>skill</i>	<b>may affect</b> <b>unusually prolonged</b> <b>complex</b>

Table 4.2: Topic-oriented evaluation

Unlike those in Set A, the entities in Table 4.2 are very diverse in that they refer to things which are related to the area described in the research paper, but which do not constitute the research itself. For instance, the fact that the performance of older individuals is evaluated in negative terms such as **less well**, **lagged behind** and **difficulty**, is not a criticism of these individuals by the researcher and therefore it is not negative in research terms. For the researcher, whether or not a subject performs 'less well' is neither good nor bad in itself: both 'good' and 'bad' performances are equally interesting topics worth investigating. Because they do not refer to either the process or outcome of the research investigation itself, Set B entities are seen as topic related (where topic refers to the area under investigation rather than to the investigation itself). Thus the value assigned to such entities is topic-oriented evaluation (TOE). This distinction seems particularly relevant to History texts (see Chapter 6 for more discussion).

To help make the TOE-ROE distinction clearer, it may be useful to carry out a brief analysis of ST4.3 below.

ST4.3: H8

(1) Brigandage constituted a **violent** response by the rural **poor** to their **increasing destitution**. (2) Moreover, brigandage was also the most **extreme form of resistance** of the Italian countryside to the growing power of the Napoleonic state, its **increasing intrusiveness** and **mounting pressure**, particularly in the realms of taxation and conscription. (3) Indeed many of the brigands were **deserters** who were **afraid** to return home and survived by **robbing** and **smuggling**. (4) During the periods of **massive rural discontent**, as was the case in the summer of 1809, brigands acted as a **catalyst** for **major disorder** in the countryside, leading crowds of peasants in **invading** numerous towns, **destroying** state property and **paralysing** government functions. (5) In that rural **insurgency** the rebels **damaged** the state's finances and **defied** its political authority in many communities. (6) In an effort to **eliminate** the brigands' **challenge**, state government responded by **reinforcing** and **improving** its **repressive** machinery, including police, courts and **harsher** laws. (7) In sum, brigands' activity and state reaction to it constituted an **important reflection** of the **tensions** that existed between the Napoleonic **authoritarian** state and the agrarian Italian society.

In his description of the conflict between the state government and the brigandage in Napoleonic Italy (1806-1811), the writer uses very highly evaluative language. On the one hand, the brigandage is described in negative terms such as **extreme, robbing, smuggling, disorder, insurgency, defied** and **paralysing**; while the regime is associated with, for instance, **eliminate, repressive** and **harsh**. This choice of overall negative evaluation presents a very negative view of the situation. In s7, however, there is a shift from negative to positive evaluation carried by **important** and **reflection**. This change in evaluation in fact signals a shift from TOE (s1-6) to ROE (s7). The overwhelming negative TOE seems not to have any effect on the purpose of the research signalled in s7 - this gloomy picture of the Napoleonic regime is evaluated in research terms as an **important reflection**. Thus the two kinds of evaluation - TOE and ROE - operate on different levels for different purposes in the text.

The distinction between TOE and ROE discussed above can be expressed simply as the difference between ‘writer observing the world’ (TOE) and ‘writer observing the research’ (ROE). In the latter the writer interacts with the research community by reporting or interpreting the results of the research investigation. The distinction implies that while ROE engages the writer and reader in a ‘dialogue’ for the negotiation of the perspective from which the research should be judged, thus contributing towards global evaluation, TOE works at a much lower (localised) level to provide a justification for the more global type of evaluation. Because of this localised function of TOE, it will not be analysed further in the present investigation where the focus is on the research purpose.

#### **4.4 Process versus Product in Evaluation**

In order to understand the contribution of evaluation to the overall purpose of the ARA, it is necessary to look briefly at the concerns of this type of genre. The ARA can be seen to focus on three broad issues:

- (i) The ‘thing’ being looked at (topic)
- (ii) The way the ‘thing’ is looked at by the researcher (methods)
- (iii) What the researcher ‘finds’ out about the thing (findings/results).

The three issues above are not intended to be seen as sequential - they do not refer to sections of the text but to the kind of information in the text. Any one of the three kinds can appear anywhere in the research article, although methods and findings tend to come mainly in that order. This reflects the fact that the terms are used here in a very broad sense. For instance ‘method’ refers to the whole process of investigation: not just the physical ‘doing’ of the investigation but also the ‘thinking’ involved in that investigation. ‘Findings’, on the other hand, refers to the observations and interpretations of research results. For the purpose of this study,

since topic refers to the ‘aboutness’ of the text, it is more related to TOE, which has been excluded from the present analysis, and it will not be discussed in this section. Instead the focus will be on methods and findings as two major kinds of information in the research investigation. The following samples of text illustrate the distinction between methods and findings.

ST4.4: EC6

Consider, for instance, the matter of post-promotional carryover. *Measuring this effect is important* because negative carryover implies that forward buying has stolen sales from the future.

ST4.5: PSY2

*These data are consistent* with a version of the right hemisphere reading hypothesis which postulates that the right hemisphere lexical-semantic system primarily represents high-imageability nouns.

In ST4.4 what is being evaluated as **important** is an activity noun, namely, *measuring*.

This entity can be seen to be related to Methods, or in Hallidayan (1985a) terms, the “**DOING**” aspect of the research, hence it is a process entity. The evaluation of a process entity is thus process-oriented.

Unlike in ST4.4, in ST4.5, the entity, *data*, does not contain any activity process. Data is something in which there is no “doing” process involved but it is something that can only be observed. This type of entity can be seen to be related not to the process but the outcome of the research investigation, i.e. ‘results’ or ‘findings’. The role of the researcher here is not that of ‘doing’ but that of “**KNOWING**”. The entity is thus a product and the evaluation is product-oriented. The categorisation of research entities into process and product becomes potentially useful in the examination of desirable qualities in the ARA which is the subject of Section 4.5 below.

#### 4.5 Scales or Parameters of Value in the ARA

The process-product distinction above is important when examining the terms in which entities are evaluated. In this section, the chapter aims at the following:

- (i) to group evaluation into a small number of categories (scales) which can be seen to characterise ascribed value in the ARA;
- (ii) to show that the scales are related to whether the evaluated entity is product or process; and
- (iii) to find out how each scale of value is realized in the language, as well as investigating some aspects of the role of grammar in determining these scales.

This part of the analysis is to a great extent based on semantic relations between/among groups of evaluative terms. Some relations are relatively straightforward, for example lemmas and synonyms, while others are more difficult to pin down - these depending on context (and more specifically the goals) of the research article. These semantic relations are further categorised on the basis of their relationship with Product or Process. The analysis provides us with categories which are as general and inclusive as possible.

Basing our analysis on the basic assumption that evaluation in the ARA is predictable, we can reasonably assume that there will be a difference in evaluative terms for process entities on the one hand and product entities on the other: we would expect, for instance, methods to be evaluated as, for example, **successful** or **useful** whereas findings can be evaluated as **significant** or **interesting**.

The following evaluative terms are typical in the data:

ST4.6: PSY1

The **importance** of *this result* is that it shows that age may affect the levels of performance which people attain at any point during an unusually prolonged experience, but without altering the rate at which they learn a complex skill.

ST4.7: AL6

*It is useful to try to separate out the factors*, as below.

ST4.8: AL1

However, while this obviously dispels any suggestion that vocabulary learning is simple or unimportant, *the implications for pedagogy* are **less clear**.

In the examples above, entities are evaluated as **important**, **useful** and **less clear**.

While **important** and **less clear** evaluate product entities, namely, *result* and *implications*, **useful** evaluates process entities represented by the to-infinitive clauses (see Section 4.6 below). The examples above seem to suggest a relationship between evaluation and the product-process distinction of research entities.

On the basis of indications from the available data four broad scales of evaluation seem to emerge.

#### 4.5.1 Process-Oriented Categories

As has already been mentioned, the kind of evaluation in this category is that related to the 'doing' process of the research investigation (methods). Process entities in the ARA appear to be evaluated in terms of how useful and reliable the methods are as research 'instruments' for the investigation of the topic in question.

#### 4.5.1.1 Usefulness

Among the common terms of evaluation of process entities is **useful** (also expressed in terms such as **usefully**, **use**, **usefulness**, **of use**). From the data, **useful** can also be expressed in other terms, which are either synonymous with it or have the same discourse function as **useful** in the text. To illustrate this point, let us look at the following examples:

ST4.9: AL6

*It is **useful** to try to separate out the factors, as below.*

ST4.10: H20

*It is also **important** to distinguish between, on the one hand, the periodic bureaucratic party purges and 'verification' campaigns which punctuated the internal life of the Russian party and the Comintern apparatus from the late 1920s onwards and, on the other, the mass terror of the years 1936-8 when literally no one was safe.*

While it is clear that the above terms **important** and **useful** are not semantically synonymous and may therefore not be seen as such in other discourse environments, it is also clear that in the present genre they appear to have an important functional synonymy of denoting the quality of **usefulness** in research. For instance, one can argue that by evaluating *to distinguish* as **important**, the writer is by implication saying that the process has a goal-achieving role and is therefore **useful** in that respect. In the data used for this study, **usefulness** of methods comprises sub-qualities such as goal-achievement, ability to evaluate theory, relevance in the achievement of goal, applicability, explicatory power and appropriateness (see Jordan, 1984, on the meaning of some evaluative terms).



#### 4.5.1.2 Control

While one can see the scale of usefulness as perhaps non-problematic and predictable given the goal-achieving purpose of methods in research, there is a group of other evaluative terms which despite not being directly related to usefulness appear to be equally important in the evaluation of process entities. Here the writer expresses an opinion about whether or not a process entity is reliable. This I refer to as the scale of

**Control.** The following are typical examples of the Control category:

##### ST4.11: PSY1

*It is now **possible** to derive from recent theoretical work by Schneider (1986) an interesting new explanatory framework for qualitative differences between 'fluid' and 'crystallized' abilities and for their differential resistance to ageing.*

##### ST4.12: H24

At this stage *it is **not possible** to summarize the results of this research programme*, since the detailed sectoral studies have not yet been completed.

##### ST4.13: PSY1

In order to be certain that we are, indeed dealing with a decrement in one system but not the other, we have to demonstrate clear dissociations of function between them by discovering specific tasks which affect each without affecting the other (see Baddeley, 1986). *This is easy to do* when we are dealing with functions so disparate as peripheral hearing acuity and memory efficiency....

##### ST4.14: PSY1

*It is **easy** to see how progressive losses of component units of connectivity (degradation) would increasingly limit a network's capability to provide, and to select between the large number of alternative pathways which are optimal for initial learning of a novel task.*

##### ST4.15: PSY1

Because of the obvious logistic **difficulties** *in undertaking longitudinal studies* most data on rates of cognitive ageing have been derived from 'cross-sectional' comparisons in which two or more different cohorts are compared.

##### ST4.16: AL6

Finally, as well as attempting to describe the washback that occurs, we need to attempt, at some point in the future, to account for what occurs, and this is likely to involve widening our hypothesis formulation and data collection to include explanatory variables derived from the research literature in motivation and innovation. What this amounts to is a long-term and relatively complex research programme. We believe that *this* is both **inevitable and desirable**.

The Control scale appears to be of two kinds which can be explained by appealing to the Source of the Control. On the one hand an entity is assigned the Control evaluation on the basis of how well the researcher is able to keep a process under control. This can be seen in the use of **possible** in ST4.11, **easy** in ST4.14 and **difficult** in ST4.15. The second aspect of the Control factor in evaluation seems to be related to whether or not something is beyond the control of the researcher(s) such as in the use of terms such as **inevitable** in ST4.16 above.

The frequent use of the Control scale indicates the desire in scientific research for control over the methods of achieving knowledge (or knowledge claims). One therefore finds that if something is not under control, such as when it is **difficult**, it is negative in research terms but when it is **easy** it has positive value.

Other examples of Control evaluation are, among others, **complex**, **possible** (where it refers to hope that something can be controlled), **simple**, **straightforward**, **fortunate**, **sad**, **problem** and **common**.

#### 4.5.2 Product-Oriented Categories

Other entities of research often assigned value are those related to the research outcome (results/findings). The evaluation of these entities is in terms of significance and validity of the findings and their perceived contribution to current knowledge about the topic in question.

#### 4.5.2.1 Significance

The data indicates that one of the most common qualities ascribed to results or findings is that of their validity or relevance to research - **Significance**. One of the main terms for the expression of this quality, not surprisingly, is **significant**. The term **significant** appears to occur more frequently in the sections where the writer interprets the results and implications of his/her research as in the following example:

ST4.17: EC1

Finally, following Bain and Elsheik (1980), we include a dummy variable for the firm's membership of an employers' association. Whereas Bain and Elsheik found this to have a consistently negative and **significant effect**, in our work *it is insignificant*.

The scale of significance can also be expressed in other synonymous terms as well as in other terms which are contextually related to the term **significant** by sharing a similar discourse function in research terms. Because of the various expressions of Significance in text, the scale can be divided into several subcategories as below.

(a) **Importance**: appears to refer to whether or not and to what degree an EE is important in our knowledge/understanding. Terms used to denote importance are, among others: **significant, important, crucial, central** or equivalent. Examples of this are:

ST4.18: EC1

One of the **important features** about the WIRS in this study is that it provides a wealth of establishment characteristics which may influence the attitude of the union, employer and other workers to an individual's membership decision.

ST4.19: PSY1

The **importance** of *this result* is that it shows that age may affect the levels of performance which people attain at any point during an unusually prolonged experience, but without altering the rate at which they learn a complex skill.

ST4.20 : PSY1

For age comparisons a **crucial additional point** is that when age groups were matched for amounts of hearing loss, 70-year-olds showed much more marked 'knock-on' effects of hearing loss on memory or comprehension of spoken prose.

(b) **Interest** or equivalent: If something generates interest, it is worth pursuing and therefore has a significant role in research.

ST4.21: PSY1

The **interest** of *this result* does not lie in the demonstration of ‘an early age-effect’ but rather in the precise nature of the change observed: there was no evidence that age between 18 and 36 affected the rate at which individuals improved with training, but because older individuals performed less well during their very first sessions of practice, and learned the game no faster than their juniors, they still lagged behind when training was stopped.

ST4.22: PSY1

Lapidot (1987) ably summarizes a body of studies giving strong evidence of ‘hemi-ageing’; i.e. that ‘right hemisphere’ skills decline with age faster than ‘left hemisphere’ skills. While many of the studies that Lapidot discusses are methodologically flawed, a more recent and convincing large-scale study by Albert, Duffy, and Naeser (1987), which incorporates evidence from brain scans to support correlations between local tissue changes and specific skill loss, leaves this **intriguing possibility** open.

(c) **Usuality**: Here the significance of the EE is based on the present research findings in relation to the existing body of knowledge. For instance, if unusual, the EE has some significance for research. Examples of this are: **remarkable, expected** (as in ‘this was an unexpected result’), **surprising**, etc.

ST4.23: PSY1

*The finding that, across all age groups, average IQ test scores differ between socio-economic categories* is **unremarkable**.

ST4.24: H2

But perhaps the **most remarkable evidence** against the ‘fear thesis’ is the testimony of eighteenth-century women as revealed in their personal correspondence with one another.

ST4.25: EC6

Given the state of the automobile market in August 1987, however, *the pattern of response* to the domestic automaker’s end-of-year promotions is **not as puzzling** at it first seemed.

ST4.26: AL8

Firstly, it is necessary to observe that the correlations, even where significant, are rather low when their variance overlap with other factors is calculated. *This* is **not surprising**, as the test was designed to have low overlap between subtests.

In these examples, the fact that the *finding* is **unremarkable** (ST4.23), the *pattern* is **not as puzzling** (ST4.25), and the fact that *low correlations* are **not surprising**, implies that these phenomena were as expected and therefore provide no new information: thus there is no longer a need for research to produce such findings as the latter are **insignificant** in research terms. On the other hand, the fact that the *evidence* is **remarkable** (ST4.24) indicates that this result was not expected and therefore is **significant** and needs pursuing.

(d) **Worth Noting:** Through this evaluation, the writer seems to appeal to the reader's perception of worthiness (usefulness) and it is expressed through items such as **worth noting, notable, note** or equivalent.

ST4.27: EC1

*It must be noted* though *that there is considerable variation in union density where recognition exists.*

Despite their diversity in everyday sense, in the present context the evaluative terms **significant, important, interest** and **(un)remarkable** are all based on the value of the results in terms of the latter's contribution to existing knowledge.

#### 4.5.2.2 Certainty

The second category of product-related evaluative items is that which is related to the personal function of language, modality and modalisation, more specifically the epistemic type. This parameter is referred to as *Certainty*. Many researchers on academic discourse have pointed to the important role played by different aspects of modality and modalisation in the writer's attempt to present scientific claims (see for instance Myers, 1989, on politeness; and Hyland, 1994, on hedging in academic

writing). Hyland argues that since scientific ‘truth’ is as much a social as an intellectual category, the need to convince fellow researchers of the ‘facticity’ of experimental results explains the widespread use of propositional qualification as a strategic rhetorical option for researchers. He argues that:

Epistemic modality is therefore crucial in academic discourse as it is a central rhetorical means of gaining communal adherence to knowledge claims (Hyland 1994: 241).

In the context of evaluation, the writer’s explicit expression of certainty commits him/her to the validity/strength of the claim in question. Thus an expression of higher certainty suggesting some movement towards scientific ‘truth’ has more positive value whereas low certainty suggests lack of that confidence in the claim being made and hence has less positive or even negative value. These issues have, of course, been discussed in Chapter 3. In order to understand how they are relevant to the concerns of the present chapter, we need to look back at Halliday’s (1985a) notion of explicit modality discussed in Chapter 2 above. Halliday makes the distinction between the subjective and objective types of explicit modality. The two sentences below illustrate the distinction:

(i) I think that he is lying.

(ii) It is obvious that he is lying.

In the first example, by the expression ‘I think’, the speaker attributes the proposition ‘he is lying’ to him/herself and implies that such a proposition is open to question. In the second example, however, by employing the objective ‘it’ subject to introduce it, the same proposition is presented as though it were not the speaker’s opinion but a state of affairs in the world, and not as open to question as in the first sentence. It is objective explicit modality used to realize evaluation which is the focus of this study.

The reason for taking this as the evaluation of certainty is that treating modality as a real world attribute means that its function is assigning value to an entity. Thus the above example of objective explicit modality can be presented as: *It is obvious that he is lying.*

It is useful at this stage to briefly reconcile the discussion on evaluation of certainty in this chapter to that of modification of certainty in Chapter 3 as both analyses are based on the same choices - modality and hedging. In this study, certainty - expressed through hedging and/or modality - is looked at from two main perspectives. On the one hand, it is looked at in terms of the writer interacting or negotiating information with the reader by expressing a degree of knowledge about something or commitment to the truth of the proposition being advanced - and hence it is seen as an expression of the degree of writer responsibility as discussed in Chapter 3. In the present chapter, on the other hand, certainty is looked at from the perspective of the desirable values in the ARA and the entities in the research world to which such values are attached, and among those values is certainty: in science knowledge (evaluated through expressions of certainty) is good while lack of it is bad, and hence certainty is treated as a separate category of value in its own right. It should be mentioned, however, that treating the two functions of certainty as separate does not in any way suggest that the expression of writer responsibility, on the one hand, and the assignment of certainty values, on the other, require separate choices of hedging (and/or modality). I argue that in this type of genre, the same choice typically performs the two functions simultaneously.

In the data, the scale of Certainty can be seen to be divided into major subcategories - truthfulness (from the perspective of the writer's perception) and consistency (from the perspective of comparison with current knowledge in the field). The following examples show the certainty value in context:

(a) Expression of Truthfulness

The subscale of truthfulness is concerned with an explicit objective evaluation of the writer's own perception of the truth of his/her statement. In this scale words such as **clear, certain, obvious, true, possible, plausible, likely, reasonable**, are, among others, typical choices.

Examples here are:

ST4.28: PSY1

We **know** that at least 40ms are required for transmission through the retina and the visual pathway, and that muscle potentials occur some 50 ms before any overt movement begins. We also **know** that individual neurons cannot fire faster than 1000 spikes per second.

ST4.29: PSY1

It is certainly **true** that amounts of slowing associated with peripheral deafness and with loss of central efficiency can both, alike, be quantified in terms of bits per second. Indeed it may also be **true** that the combined efforts of deafness, old age, and IQ test score can conveniently be expressed in terms of changes in position on a common 'resource plane' (Navon, 1984) for which 'bits of information transmitted per second' may serve as very convenient, and empirically plausible units of measurements.

ST4.30: H21

Summarizing to this point, it is **evident** that France's claim to the Province of Mosul did not originate from a carefully laid plan to gain control of the petroleum resources of upper Mesopotamia.

ST4.31: PSY1

An advantage of modelling decision processes in this way is that it **becomes obvious** that information processing rate is by no means the sole performance characteristic in terms of which the efficiency of a network can be evaluated.

ST4.32: EC1

It is **not clear**, then, that theory gives an unambiguous prediction about the effects on membership of product market conditions, relative labour costs, the elasticity of factor substitution and the supply elasticity of other factor inputs.



ST4.33: H20

It is **possible**, after all, *that Stalin's intentions in 1935 were less murderous than many historians have assumed.*

ST4.34: EC1

We are also concerned about the direction of causation in any such relationship and find *it* at least **plausible** *that unionization is a determinant of the firm joining an employers' association.*

ST4.35: PSY1

One specific implication of Rabbitt's (1989) results is that *IQ scores* may be **reasonable indices of levels of information processing capacity** (in Navon's (1984) terms 'a high level of resource' or a high 'system operating characteristic').

#### (b) Expression of Consistency

In addition to the clear expression of truth, there are other certainty terms which seem to denote the consistency quality of an entity. It should be noted that in this study the term **consistent** is regarded as an expression of certainty since the writer is claiming that his/her finding is in line with the already 'accepted' research findings and thus expresses confidence in its validity by evaluating it as **consistent**. Consistency can be seen to involve conforming to the shared norms, expectations or knowledge of the world. The value of certainty can be related to the importance of factuality in scientific research, where certainty is desirable whereas lack of certainty is an undesirable quality. Terms used here are, among others, **consistent, follow** (such as in 'It follows that...'), **supports, confirm, vindicate, correlate** and **corroborate**. As can be seen, most of the terms used in the expression of consistency are comparison verbs (see a discussion of these verbs in Chapter 5 below; and Thompson and Ye's 1991 category of 'writer acts').

The following are examples of the consistency subscale:

ST4.36: EC1

The influence of the workforce characteristics variables in determining union density is strong, corroborating the findings of Bain and Elsheik (1980). Green (1990), using a conditioning model for individuals, finds *that individual characteristics are of limited influence on*

*membership decisions once recognition is taken into consideration. This is consistent, in conjunction with our results, with the predictions of Naylor (1989, 1990) that it is the characteristics of the other workers in the workplace that are influential, rather than the individual's own characteristics.*

ST4.37: PSY1

Looked at in another way *these data do indeed confirm that not merely the overall rate, but the pattern, of cognitive aging may vary markedly between individuals as a result of the differential resistance to age of 'crystallized' in contrast to 'fluid' abilities.*

ST4.38: PSY1

Since Rabbitt and Goward (1990a) have found that declines in unadjusted IQ test scores account for nearly all of the observed age-slowing CRT *these two models are mutually congenial.*

ST4.39: PSY1

We know that at least 40ms are required for transmission through the retina and the visual pathway, and that muscle potentials occur some 50 ms before any overt movement begins. We also know that individual neurons cannot fire faster than 1000 spikes per second. *It follows that identification of a critical signal to respond from among all other concurrent visual events, plus the programming and initiation of a specified response to it, must be achieved by a neural pathway which cannot include a linear sequence of more than 40 neurons and synaptic connections.*

It has been argued in this study that certainty is an important scale in evaluating science in that it is used to negotiate the level and strength of the knowledge claims made by the writer so as to negotiate acceptance. One of the main functions of certainty signals is to mark the tentativeness of results mostly in interpretation and discussion in order to leave open the possibility of future research on the subject (See Chapters 2 and 7 on the construction of knowledge; and see Myers, 1985a; 1989).

#### 4.6 A General Discussion of Parameters of Value

Although there are clearly more delicate differences which could be explored between the different terms in each category, the four scales of evaluation above provide a very simple but generalisable picture of how evaluation works in text. However, the basic simplicity of this type of categorisation is slightly complicated in practice by certain features of realization. The data shows that it is possible for an

evaluative term to express more than one parameter of value, such as in the case of **important** and **possible**.

To address this issue of apparent realization overlap, there is a need to look, first, at the type of entity to which the evaluation is attached and, secondly, in some cases, at the role of the grammatical structure in an evaluative sentence. The two texts below illustrate this:

ST4.40: AL5

Because writers made substantial use of embedding, framing nearly one sixth of their compliments with I think, I feel, or I found, *it is important to consider the functions of these syntactico-semantic clauses.*

ST4.41: PSY1

The **importance** of *this result* is that it shows that age may affect the levels of performance which people attain at any point during the unusually prolonged experience, but without altering the rate at which they learn a complex skill.

In the first example, **important** is attached to the ‘it’ whose function is to anticipate or predict the presence of a clause, in this case the to-infinitive clause, to follow (on the function of the anticipatory ‘it’, see Quirk et al., 1972; Winter, 1982; and Halliday, 1985a). The whole clause is a process entity (i.e. ‘to consider’). In the second example, however, the term **importance** is not assigned to a process but to *this result* which is a product entity.

The role of grammar in the realization of scales of value can also be illustrated by two examples involving the term **possible**.

ST4.42: AL25

Arguably, *it is quite possible to study the ergativity phenomenon without the benefit of a large corpus*, and indeed general explanations can and must be made in terms of causality and agency.

ST4.43: AL1

Of course, *it is possible that in this case an increase in corpus size will throw up some examples in the present tense, thereby indicating the grammaticality of my example.*

In both expressions above, the bound clauses, the to-infinitive and the that-clauses, are evaluated by the adjective **possible**. The difference, however, is that while in the first example the 'it'-clause projects a to-infinitive clause carrying an activity process *to study*, in the second example it projects a that-clause or, as Halliday (1985a: 243) calls it, a 'fact' (see also Young, 1980, and Downing and Locke, 1992, on that-clauses and impersonal projections). From the grammatical-functional perspective, the to-infinitive clause above can be seen to imply the need for the process of realization of *study* still to take place and thus refers to an unrealized status (and hence a process). On the other hand, the that-clause can be interpreted as encoding an existing idea or an observation as it does not contain any activity process. It is important to stress that in the present data the meaning of the term **possible** with the anticipatory 'it' is determined by the kind of clause attached to it. From the data I was able to identify 61 examples of **possible** + to-infinitive clause and 74 cases of **possible** + that-clause. In all examples of the **possible** + to-infinitive clause, the evaluation could only be interpreted as that of control whereas in all the **possible** + that-clause, the evaluation was that of certainty. Here is a very brief but representative list of entities evaluated along the Control parameter, on the one hand, and that along the Certainty parameter, on the other:

(a) List 1: Entities evaluated by it + (be) **possible** + to-infinitive = Control:

- *to poll these enthusiasts*
- *to determine the size of the population*
- *to focus on the women who joined in Hesse Nassau*
- *to control the length of time....*
- *to explain a phenomenon without being able to predict it....*
- *to set up versions of the shirking model in which employment is increased by an efficiency wage.*
- *to see how systematic decisions can be made....*

(b) List 2: it + (be) **possible** + that-clause = Certainty:

- *that Stalin's intentions in 1935 were less murderous than many historians have assumed.*
- *that children pronounce L2 better than adults because they have fewer psychological inhibitions regarding the pronunciation of L2.*
- *that maximizing output is, in fact, an objective of policy but that, for some reason, the authorities do not wish to disclose this.*
- *the occupational and class status of early members may explain the attraction of the NSDAP.*
- *that from late 1938 administrative procedures normalized somewhat....*
- *that inaccuracy is the result of the competence - performance relationship....*
- *that downward sloping and inverted U-shaped patterns might arise....*
- *that although an increase in the wage increases employment it actually increases unemployment.*

#### 4.7 An Overview of the Categories

If we set out the individual scales of value as shown in Table 4.3, the chapter can be seen to have emphasised so far the differences between Process and Product. Process entities are typically evaluated along the lines of Usefulness and Control whereas product ones are evaluated along those of Significance and Certainty as summarised in Table 4.3.

RESEARCH INVESTIGATION (DOING)	RESULTS OR FINDINGS (KNOWING)
Usefulness	Significance
Control	Certainty

Table 4.3: Process versus Product scales of value

However, the discussion of overlapping realizations in Section 4.6 above suggests that we can also look at the categories from a perspective which highlights similarities between the evaluative categories. The study shows that a research related entity can be evaluated more broadly in terms of how worthy the entity is in

terms of its contribution to research. From the process perspective this is along the scale of usefulness, whereas the product entity is evaluated along the significance parameter. This has been illustrated, in both cases, by the term **important** which when used with the to-infinitive clause realizes usefulness, whereas with the nominal group (e.g. the that-clause) it realizes the scale of significance. This overlap in terms of lexical realization reflects the fact that the two are actually different manifestations of the same value, which can be interpreted as the quality of **Worthiness**. Similarly, the parameters of Control and Certainty are both concerned with reliability, the former pertaining to control over methods and the latter to reliability of results. These two have also been seen to have overlapping lexical realizations such as was the case with the term **possible**. They can thus also be seen to be manifestations of the same value, which can be interpreted as **Fixedness**. While Control can be seen as the fixedness of ‘doing’ (including the thinking involved), Certainty can be seen as the fixedness of ‘knowing’. These similarities between the realizations of process and product entities are illustrated by Table 4.4 below.

	RESEARCH INVESTIGATION (DOING)	RESULTS OR FINDINGS (KNOWING)
WORTHINESS	Usefulness	Significance
FIXEDNESS	Control	Certainty

Table 4.4: Similarities between Process and Product scales of value

## 4.8 Another Parameter of Value?

It may be surprising that I claim that, regardless of discipline, the ARAs share the same values as well as similar lexical realizations of those values. Although it is not possible to present quantitative data in a sufficiently economical form here, the data shows that, in ROE, virtually all values and their realizations can be covered by the four categories discussed. It should be mentioned however, that there are inevitably a few exceptions of evaluation which do not easily fit into the framework established. The most obvious of these odd cases are some (not all) evaluative disjuncts and what may be called pre-research entities.

### 4.8.1 Evaluative Disjuncts

The important function of disjuncts in organising text and expressing evaluation has been commented on by other researchers (e.g. Thompson and Zhou, 1996). However, the data used for this study also indicate that their realization of evaluation differs from that of the terms which have been used in the establishment of the four parameters of value. Let us look at the following examples to illustrate this point.

ST4.44: H28

**Unfortunately**, *it is still unclear how many groups refused to disband, as opposed to those who complied with the wishes of the new authorities.*

ST4.45: AL6

**Sadly** (but perhaps **not surprisingly**), *Forbes provides no evidence to support his emotive claims, nor does Madsen in his reply.*

The two disjuncts above appear to function differently from the evaluation dealt with by the suggested analytical framework. Although the terms **unfortunately** and **sadly and not surprisingly** can be looked at from the viewpoint of positive and negative

evaluation, and clearly represent the researcher's attitude towards research entities (and are thus ROE), they do not have a direct relationship with the good or bad of research entities in the same way as has been suggested in this paper.

It is worth noting first that in terms of positioning, the disjuncts do not form part of the propositions which follow them. The importance of the disjunct positioning is observed by Quirk et al. (1985) who argue that disjuncts:

have a superior role as compared with the sentence elements; they are syntactically detached and in some respects 'superordinate', in that they seem to have a scope that extends over the sentence as a whole (Quirk et al., 1985: 612).

Secondly, and more importantly for our purposes, these evaluative disjuncts do not say whether an entity (which appears in the proposition) is good or bad; the good or bad in this case is that of the writer's feelings and not the entity itself. To answer the question "why do you find the situation in the following proposition unfortunate/sad?", one has to go to the proposition which follows; and the answer to the question is therefore: Because '*it* is still **unclear...**' or 'Forbes provides **no evidence...**'. It is in the proposition proper that we find both the AV and the EE, which fit in with the established scales of value. The disjuncts can thus be seen as announcing research oriented evaluation but not actually giving it.

The discussion of evaluative disjuncts given above relates to the difference between the personal and the scientific. While the disjunct refers to the good or bad in terms of the writer's personal feelings, the evaluation which has been used for the establishment of the scales is that which is concerned with the judgement of good or bad in research terms. The fact that the evaluation carried by the disjuncts discussed does not fit in the framework suggested can be explained by the fact that this kind of evaluation is personal and not 'scientific'. In this genre, therefore, **unfortunately** can



only announce rather than give evaluation: this subjective type of evaluation has to be justified by the objective type - that from the research point of view.

From the difference between evaluation as represented by our four-part framework and that by disjuncts, we can further divide ROE into what might be called **CENTRAL** and **INCIDENTAL/PERIPHERAL**, the former carried in the proposition and comments on the good or bad of the research entity whereas the latter does not comment on the entity but on the speaker/writer's feelings. Thus while the former type signals evaluation, the latter only announces it.

#### 4.8.2 Pre-Research Entities

Another example of evaluation which does not seem to fit in with the established parameters is that which refers to those entities which are not exactly research in terms suggested in this study. Let us look at the following examples:

ST4.45: PSY1

Lack of data leaves undecided the **crucial** *question* whether or not age changes in rates of learning of cognitive skills are independent of age changes in the maximum attainable ceiling performance.

ST4.46: PSY1

Thus a **central** *issue* in applied gerontology is that individuals must assess their own ageing in terms of their interactions with changing environments and with the changing composition, demands, and standards of the social groups in which they live.

Although **crucial** and **central** have been among the terms which are used to signal usefulness and significance, in the two sentences above, they cannot be classified very easily because of the nature of the entities they evaluate - *question* and *issue*, respectively. The entities themselves are very difficult to classify as either process or product as they seem to point to a stage before the start of the research. For example,

before carrying out a research investigation the researcher has questions which need answering or issues which need addressing and hence he starts the research and publishes these in the paper - he decides on the methods (e.g. data, methodology) and arrives at the results (conclusions, interpretations, etc.). It is the entities involved in the actual research investigation itself (methods and findings) which have been used in the proposed categories. It is because *question* and *issue* refer to a period prior to research (i.e. they can therefore be seen as pre-research entities) that they are regarded as a different category of entities which lies outside the scope of the present thesis.

#### 4.9 Topic-Oriented Evaluation

Looking back at what the paper has done we can briefly mention the kind of evaluation which has not been used in the categorisation framework, Topic Oriented Evaluation. It is worth reiterating that it works on a different scale altogether and therefore the categories established for the purpose of this paper would not work for TOE. For instance when we look back at ST4.3 used to illustrate the difference between ROE and TOE in Section 4.2 above, these evaluative items appear to be assigned to items such as *machinery* (i.e. **repressive machinery**) and *laws* (i.e. **harsher laws**) in s6 which cannot be easily be divided into either process or product categories in the same way as has been done with ROE entities used for this study. The framework of our analysis was established for a different type of evaluation on a different level from that of TOE and therefore cannot account for TOE of entities which are non-research. In short, there is a need for a different type of analytical framework for TOE which would be based on a different purpose from the one in the present study.

#### 4.10 Conclusion

Having discussed the findings of this study, let us step back and briefly comment on the evaluation network in the ARA. The study has indicated that of the two major systems of evaluation, TOE and ROE, the former comments on any kind of entity and employs a very wide range of value systems which makes it very difficult to categorise. ROE, on the other hand, deals with types of entities as well as ideologically driven values which have been used to establish generalised categories of value across disciplines.

The analysis carried out in this chapter raises a few important points about the categories of evaluation established. First at a broad level it is useful to emphasise that the proposed categories applied to all the disciplines and hence I did not find it necessary to set up different categories for any particular discipline. Having said this, however, it is worth making a few observations about the two features on which the categories were based - the Ascribed Values (AVs) and the Evaluated Entities (EEs). In terms of the AVs it is noticeable that there is a very strong tendency for writers to rely on a relatively limited choice of terms for the explicit evaluation of research entities, as has been indicated by the examples of evaluative terms used in the analysis in this chapter. For example, terms such as **important**, **interesting**, **possible** and **significant** (including their lemmas) occur across the four disciplines. In terms of the actual distribution of these evaluative terms, there are obvious variations; however the variations appear to be directly related less to the discipline itself than to the type of research paper (i.e. experimental and/or whether the paper is process or product oriented). Of course different disciplines may tend to rely more than others on particular approaches to research, and this may influence the frequency with which certain values are invoked. For instance, a survey of the occurrence of the term **significant** in a sample of ten articles from each of the disciplines showed the following distribution: it appeared in 5 History articles, 7 from Applied Linguistics, 7

from Psychology and 10 from Economics. A possible reason for the fact that the term is found in all Economics articles is that the subject area relies heavily on statistical analysis of the results of the experimental research, and the primary aim of such analysis is precisely to establish significance. In History, on the other hand, writers generally do not appear to feel a need to justify claims for **significance** on the basis of statistics (even the one paper in the sample which refers to the significance of a particular correlation does not use numerical data to justify the evaluation); and thus this value is only one amongst several parameters that are likely to be invoked.

In terms of EEs, at the most specific level, there is a great deal of individual variety which appears to be partly discipline-specific though it may again be more broadly related to the predominance of experimental or non-experimental procedures. If a paper is a report of experimental research, we would expect the evaluation of 'doing' process methods as well as 'thinking' process ones. If, on the other hand, the paper deals with the theoretical arguments for a particular position, one would expect the evaluation of more 'thinking' process ones. To take another example, process EEs in History are frequently pre-existing data sources, whereas in Psychology they are primarily experimental methods. Nevertheless at the broadest level the categorisation suggested above into Product or Process appears to hold good across all disciplines.

A further source of variation in the choice of evaluative terms is related to TOE. First, although it is not possible to present all the data, the indication is that the TOE values vary from one discipline to another. For example, History, being mainly a narration of past events, uses strikingly evaluative lexis to provide vivid images of such events. The following example is typical:

ST4.48: H20

From this time on, the Soviet security organs in the guise of Trilisser, Yezhov and their subordinates were establishing their authority over an impotent, docile and doubtless terrified Comintern hierarchy.

Values such as **impotent**, **docile** and **terrified** are not common in, for example, Applied Linguistics or Economics.

Secondly, there are differences among disciplines in terms of the balance of TOE and ROE in a text. This is most striking in History articles again, where there appears to be a very uneven distribution between TOE and ROE, with the former being the dominant while the latter is typically concentrated in the introduction and conclusion sections but very sporadic in the body of the article (see Chapter 6 for a discussion of different options of writing a History research article).

Having suggested another way of looking at research-oriented evaluation and how it works in text, it is worth looking back at the implications of this chapter. I have in this chapter suggested that in terms of evaluating research the writer of an academic research article can choose from a very small set of semantic/value options as well as a relatively small group of lexical items through which to express these value options.

The major values identified in this paper, Fixedness and Worthiness, can be seen to be related to the ideology of science. The goal of scientific investigation is the establishment of truth: that is, scientists have the desire to 'fix' the truth. In the paper, the general categories of Worthiness and Fixedness can be related to this scientific goal in that:

(a) Fixedness is related to the ultimate aim of establishing the truth. The fixedness parameter can thus be seen to answer the question: How close are we to establishing the truth?

(b) Worthiness can be seen in terms of contributing to the truth (Fixedness). This parameter, therefore appears to answer the question: How much does the entity contribute to fixing the truth?

This chapter has focused on the description of the entities which are evaluated in the ARA and the terms in which those entities are evaluated. The divisions between process and product related categories and the terms in which they are evaluated has suggested that the values of the genre are predictable and this suggestion of predictability allows us to relate the categories transparently to the ideology of science.

## CHAPTER 5

### TEXTUALISATION OF VALUE: THE ROLE OF EVALUATION IN THE ORGANISATION AND STRUCTURE OF DISCOURSE

#### 5.1 Introduction

Before carrying out the analysis in this chapter, there is a need to reiterate important assumptions which form the basis for the analytical framework in the chapter. First, as has already been argued, evaluation is not external to the text but is shaped by it. This assumption helps to explain why one lexical item might be identified as evaluative in one text but non-evaluative in another. The second assumption is that evaluation is 'parasitic' on other systems of the language (see Thompson, 1996a). That is, in order to express a point of view in a text, the writer exploits language systems such as the lexicogrammar, discourse and rhetorical patterns. The purpose of this chapter, therefore, is to examine how evaluation enters the text, that is, what structures or resources are exploited in the expression of evaluation and how. This analysis is based on the writer's textualisation of evaluation in the ARA. Because in the written text, the writer and reader are not present to negotiate both the message and the point of view of the text, successful textualisations enable the reader's comprehension of the intended evaluation in the text (see Coulthard 1994b on textualisations of the writer's messages). This chapter can thus be seen to deal with the textual dimension of evaluation.

As an interpersonal concept, evaluation is not necessarily tied to particular types of constituent in the clause: any constituent can carry evaluation (Halliday, 1985a, 1994b). This view is also expressed in Thompson's (1996a) argument that evaluation has no

defined structure of its own - it is 'parasitic' on other systems; and this explains the failure of attempts to categorise evaluation under any single classificatory system as has been argued in Chapter 2. The analysis in this chapter is intended to show this feature of evaluation by examining how the four major word classes of the language - the noun, adjective, verb and adverb - can be used to express evaluation. Secondly, I examine how these lexicogrammatical choices can work together to create a coherent evaluative system which in turn contributes to the structure and texture of the text.

In carrying out this analysis, two important discourse concepts are useful - Harmony and Scope. Harmony is concerned with the way in which through evaluation the reader is able to comprehend the point of view expressed by the text through successful processing of various evaluations which may be both conflicting and non-conflicting, and how these work together towards the overall purpose of the text. For the analysis of Harmony in this study, I identify various expressions of evaluation in a stretch of text and examine their roles and relationships in the overall framing of the content of the text.

Scope, on the other hand, refers to the extent/range of information on which an evaluative item comments. For the analysis of Scope, I identify how evaluation contributes to the chunking of text into identifiable units of information, as well as how the reader manages to identify these for better comprehension of the text. In a text, some items have limited scope - commenting on small units of information - while others have a broad scope - commenting on larger stretches of discourse. The claim in



this study is that evaluations with larger scope do not only segment the text into identifiable units of information but also signal the boundaries of such units.

It should be clear that Harmony and Scope are two interdependent concepts, the difference being only in the perspective from which the text is analysed for evaluation. While, on the one hand, the analysis of Harmony involves examining how through processing different evaluations the reader is able to comprehend the text, thus treating the text as a process of discovering meaning, that of Scope, on the other, involves treating the text as a product made up of various yet interdependent segments of meaning. Thus the analysis of Harmony can be seen as primarily process-based while that of Scope is primarily product-based.

## **5.2 Evaluation and the Lexicogrammar**

As has already been argued elsewhere, evaluation is in itself a difficult area to pin down and its identification is not without problems. For instance, it is possible that while an AV can be seen to be evaluating one entity, it can simultaneously be evaluating other things via that entity. To try and gain a realistic picture of how evaluation works in text, therefore, there is a need for a two-dimensional analysis: first, a microlevel dimension which focuses on which constituent in the clause carries evaluation as well as which entity is being evaluated at a particular point in the text; secondly, a macrolevel dimension which examines how the individual cases of evaluation work together at propositional and discourse levels to construct the global point of view in the text.

### 5.2.1 The Adjective

The most natural way to describe something or assign an attribute to it is through the adjective. For instance, in expressions such as ‘a horrendous experience’ and ‘a beautiful girl’, the adjectives **horrendous** and **beautiful** are evaluative - because of our knowledge of the real world values, we know that **beautiful** is good whereas **horrendous** is bad. The following examples show the adjective in action in the data:

#### ST5.1: AL4

However, there are two more **important** *arguments* against restricting ourselves to the observable, even in an extended sense of the term.

#### ST5.2: AL35

As we have already noted above, the clause is the **significant** *semantic unit* of sentence function, so that a sentence can consist of one or more clauses.

In the examples above, the adjectives **important** and **significant** are attributes assigned to the EEs - *arguments* and *semantic unit*, respectively: in Hallidayan terms, they are interpersonal epithets (and, for the purpose of this study, evaluative). It is worth mentioning at this point that, in the data, adjectives are not tied to any specific categories of value (see Chapter 4 above) but are distributed fairly evenly across the categories. It has been argued, however, that the grammatical structure within which an AV appears can at times determine the category of the evaluation, such as the *it*-clauses where, for example, if **important** comments on a *that*-clause it is product-oriented, whereas if it comments on a *to*-infinitive clause, it is process-oriented, the result being evaluation of significance for the former and that of usefulness for the latter. Another example of the influence of grammar on categories of value has been seen in the term **possible** where ‘**possible** + *that*-clause’ denotes epistemic modality and thus realizes

the certainty parameter whereas ‘**possible** + to-infinitive clause’ involves the idea of ability and thus realizes the control parameter (see Chapter 4 above).

Another point related to the position of the evaluation within the clause is that of the structural relationship between the AV and the EE. While the examples above show the adjective as a premodifier within the nominal group, in the following example, the adjective is part of the complement:

ST5.3: AL2

I would argue that *such a strategy* is **perfectly reasonable**, but an assessment of falsification could not be justified.

This difference between the adjective as subject and as complement corresponds to the traditional notions of attributive and predicative adjectives. The attributive-predicative distinction is important for the analysis of evaluation at discourse level particularly from the point of view of arguability. The two examples below illustrate this distinction:

ST5.4: EC26

An <b>important</b> difference	remains	between Keynes and current practitioners....
Subject		Complement

ST5.5: EC26

The thematic contrast in the General Theory	is	<b>significant and consistent</b> with the evolution to a broader methodological position, described in Section II.
Subject		Complement

In the first example, the adjective **important** pre-modifies the entity (noun) *difference*. In the sentence the adjective is part of the Subject in the clause. In the second example, however, the evaluation is predicated and therefore is part of the Complement.

The arguability status of the above evaluations (ST5.4 and ST5.5) can be illustrated by turning the sentences into mini-dialogues using yes/no questions with negative answers:

1. Question: Does an important difference remain between Keynes and current practitioners...?

Answer: No, it **doesn't remain**.

2. Question: Is the thematic contrast in the General Theory significant and consistent...?

Answer: No, it is **neither significant nor consistent**.

As the above examples show, the arguable part of the sentence is not the Subject but the Complement. This corresponds to Halliday's view that the Subject is the "entity in respect of which the assertion is claimed to have validity" (Halliday 1994a: 76). The Subject expresses the entity that the speaker makes responsible for the validity of the proposition being advanced by the clause. Presenting evaluation as a part of the Subject implies that it cannot be argued about. In Hallidayan terms, arguability is part of the function of the Finite, this being part of the verbal group where polarity and modality (and tense) are expressed. Thus in the above examples, the evaluation as part of the Subject is presented as given, and to argue it would involve changing the basis of the proposition expressed in the clause. This view is supported by Thompson (1996a) who argues that in a proposition, the Subject can be seen "as non-negotiable as long as the current proposition remains in play" whereas the Finite makes it possible to argue about

(i.e. negotiate) the validity of the proposition (Thompson, 1996a: 45). For instance, in the first mini-dialogue above, what is argued about is not whether the *difference* is **important** but whether it **remains** whereas in the second example, it is actually the evaluation **significant and consistent** itself that is in question.

The implication of the discussion above is that, in text, the kind of evaluation one would expect to find in subject position (either through pre-modifying adjectives or nominalisation of attributes - e.g. **importance**), is that for which there is mutual agreement between the writer and reader - that which is part of the 'given' and not 'new' information (see Halliday, 1985a, 1994a on Given/New information in Theme/Rheme choices). The reader will expect that attributes in subject position will have been discussed and negotiated in the preceding discourse and are therefore part of shared knowledge/accepted information prior to their being presented in subject position.

### 5.2.2 The Noun

Although the primary role of the noun is that of naming something that is referred to in the clause, it can also play an evaluative role in discourse. In fact one of the major ways in which evaluation enters the text is through nominal choice. That is, the speaker/writer can express a point of view by giving an evaluative name to a thing (see Francis, 1986, 1994 on labelling). The data show a wide range of nouns which can function as evaluation without any dependence on adjectival modification. The following examples illustrate this function:

#### ST5.6: EC21

Economists have long appreciated the *importance* of the *problems* posed by missing markets and the consequent *difficulties* for management of major *risks*.

## ST5.7: EC27

We think there are two main *advantages* to a reduced-form approach. First, the reduced form-estimates give us the net effect of a nation's income on pollution.... Second, the reduced-form approach spares us from having to collect data on pollution regulations and the state of technology, data which are not readily available and are of questionable validity.

The nominal choices such as *importance*, *problems*, *difficulties* and *risks*, in the first example, and *advantages*, in the second, carry a high evaluative load. In the examples given as well as in the rest of the data, evaluative nouns can be either nouns 'proper', for example, *problems* or nominalisations, for example, *importance*. Let us look at the function of an evaluative noun in text:

## ST5.8: AL41

Generally, the presentation of hedges in published materials is not encouraging, with information scattered, explanations inadequate, practice material limited, and alternatives to modal verbs omitted. This *failure* to adequately represent the importance of hedges therefore inadvertently gives misleading information to students concerning the frequency of different devices.

In this example, the evaluation **failure** is a nominalisation which summarises or encapsulates the preceding discourse (see Sinclair (1987) and Tadros (1993) on encapsulation in text). It thus serves as an evaluative label for the information in the preceding discourse (see a detailed discussion on labelling in Section 5.5.1 below). It is however worth noting that evaluative nouns in a text are not necessarily labels - labelling is an additional function chosen by the writer of the text when need arises, for example, to 'package' a stretch of discourse in order to enhance the reader's comprehension of the text. Conversely, not all labels are evaluative. The following examples illustrate the point:

## ST5.9: AL52

*This discussion* demonstrates that task-based approaches to instruction are currently in a transitional position.

## ST5.10: AL19

A *failure* to consider all three aspects of speech is reductionistic, and apt to lead to misunderstanding of how speech is learned.

In the first example, despite being a retrospective label which encapsulates preceding information, *discussion* appears to be simply textual and not evaluative in function. It is a neutral word which labels a stage/part of the ongoing discourse but is non-evaluative. Conversely, in the second example, *failure* is an evaluative nominalisation yet it is neither forward nor backward looking: it is thus non-labelling. The distinction between evaluative and non-evaluative nominals/labelling suggests that although, as we shall see below, there is a tendency for labelling and evaluation to go together, in principle this need not be the case. The examples given above indicate that the choices of nominals as evaluative, on the one hand, and as labels, on the other are independent options dependent on the message that the writer wants to put across to the reader.

One important feature that is noticeable from the data and related to nouns in general is what may be called 'embedding' of evaluation. This refers to 'evaluation within evaluation'. This feature can occur both at lexicogrammatical and discourse levels. At the lower level, this can be seen in cases of the Head and postmodifiers where the evaluation in the Head is dominant and therefore subsumes that in the postmodifier. At discourse level (and this is the most obvious in this genre) this is typically realized in cases of labelling (either prospective or retrospective) where a label sets up the evaluative framework for either the preceding or subsequent text and thus the evaluation within the scope of the evaluative item (typically a nominal group) sets the harmony for the whole stretch of text. An example is that of ST5.7 above in which the label *advantages* is the all-embracing evaluation for the whole stretch in which such *advantages* are discussed. (See a detailed discussion under Harmony or Labelling in this chapter).

### 5.2.3 The Verb

In the English clause, the verb is used to express an event. In systemic-functional terms, it is the most important element in the experiential function of the language: in transitivity terms the clause expresses our own experiences of the world, and the correct interpretation of the clause in experiential terms is dependent on the process carried by the verb. In the clause, the verb carries the experiential processes - Material (Doing), Relational (Being), Verbal (Saying) and Mental (Sensing). It is also through the verb that interpersonal aspects such as polarity are expressed (see Halliday 1985a, 1994a).

Because the verb primarily expresses an event and is not used as a descriptive word, it appears to be a relatively unnatural way of expressing evaluation. However, in ARAs some of the most important evaluations can enter the text through the verb. It should be pointed out, however, that evaluation through the verb appears to work differently from that through other constituents, as will be seen below. There appear to be a limited number of verbs which can be used for the purpose of evaluation. This limitation motivates the establishment of potential categories for evaluative verbs, which has not been the case with the first two constituents.

From the available data, the bulk of the verbs used for evaluation are potential reporting (or speech act) verbs, although there are a few others which do not fall under this category. Here reporting is taken in its broad sense of somebody or something communicating something. It should be mentioned here that the concept of reporting also carries the idea of the effect or impression that the reporting verb has on the reader (see Thompson and Ye's, 1991, classification of reporting verbs). As has already been



argued elsewhere, reporting verbs in ARAs express the claims and findings of other sources, be they other researchers or data (methods and findings).

It should be noted that most of the verbs used for this analysis are those carrying verbal or *mental processes*. As will be seen, however, there are also material process verbs which are oriented to research (see the research outcome category verbs below). Drawing on Thompson and Ye's (1991) classification of reporting verbs, evaluative verbs in this study are classified into three categories on the basis of their discourse function.

#### 5.2.3.1 Discourse Verbs

This category of verbs are used to report or interpret the 'sayings' of other sources (either researchers or data). These are typically verbal process verbs, e.g. **argue**, **conclude**, **claim**, **suggest**, **indicate**, **point out** or the equivalent.

##### ST5.11: AL35

A number of authors have **argued** *that in English, relative clauses and other hypotactic constructions provide explicit cues regarding prominence relations among propositions*.

##### ST5.12: AL28

The ability to explain such a gaffe is not an adequate excuse, and Owen points to what appears to be an error of judgement in the omission of the word *propose* from this section of the grammar. He **claims** *that it is an error of observation*, but we would deny that, since the facts could hardly have been missed.

##### ST5.13: EC24

The results of this paper, as summarized in Table XIII, **suggest** *that this premise is largely incorrect*.

##### ST5.14: AL35

Anderson and Davison (1988) **point out** *that text difficulty is not linked in a simple way to complexity of the syntax used in a text*.

##### ST5.15: EC25

Labour demand models **predict** *unambiguously that female relative employment should have fallen as a result of this*, but it is very hard to reconcile this prediction with what was observed.

ST5.16: EC22

Turning to the dynamic properties of the system, the result that the high inflation equilibrium  $B^*$  is stable **implies** *that the system cannot generate accelerating inflation.*

ST5.17: EC24

As Table 1 **shows**, *one important area of factor accumulation has been labor input.*

ST5.18: H1

Others in Kennedy's administration saw the need to draft an agreement at Nassau which would help Macmillan with the domestic political challenge from Labour, but the evidence **indicates** *that Kennedy was really the only one to draw the conclusion.*

### 5.2.3.2 Comparison Verbs

This group of verbs reports on whether data or in some cases the 'sayings' of findings of other researchers are consistent with the writer's own data and vice versa. Sometimes the comparison is between/among data other than the writer's own. Very often these verbs weigh the consistency and relevance of previous or present data against existing knowledge in the field as a whole. Examples of these are, among others, **support**, **vindicate** and **corroborate**.

ST5.19: AL5

*The data* **support** the conclusions of other researchers *that compliments tend to be quite predictable (formulaic)* in that speakers/writers make most use of a restricted set of syntactic patterns and lexical terms.

ST5.20: AL35

*The findings*, shown in Table 1, **replicate** Tyler et al.'s (1988) and Tyler's (1992b) findings that in the lecture situation, Chinese and Korean speakers use significantly fewer instances of hypotaxis than do American speakers.

ST5.21: EC23

*The comparative ignorance effect* **violates** the principles of procedure invariance, according to which strategically equivalent elicitation procedures should produce the same preference order.

ST5.22: AL5

In summary, these data offer a description of the syntactic choices these writers made to express compliments in one written genre. Because the formulaic nature of compliments is clearly evident, *these findings* **tend to corroborate** the claims of other researchers that speakers rely most heavily on a restricted set of syntactic patterns.

### 5.2.3.3 Research Outcome Verbs

The verbs used to evaluate research outcomes are not necessarily reporting ones - there are also research outcome verbs which are non-reporting, these being related to Thompson and Ye's (1991) research verbs. Examples of non-reporting research outcome verbs are **illustrate**, **facilitate**, **vindicate** and **prove**. The following are a few examples of research outcome verbs in context.

ST5.23: EC22

These figures **reveal** *that it is demonstrably the case that models with rational expectations can generate hyperinflation.*

ST5.24: EC8

Although much more research is needed, *our findings suggest that, because durable goods are quite different products from non-durables, knowledge about response patterns to nondurable promotions is not readily recognizable to durable-goods contexts.*

ST5.25: EC24

*Table XV helps* the reader to reconcile the moderate estimates of total factor productivity growth found in this paper with the towering record of output for growth in the East Asian NICs.

ST5.26: EC26

The advantage of *this approach* is that *it facilitates* the formal modelling of economic relationships.

From the four examples above, **reveal** and **suggest** are reporting verbs while **helps** and **facilitates** can be seen as non-reporting. While many of the reporting verbs such as **reveal**, **suggest**, **illustrate** and **demonstrate** can also be seen as belonging to the category of discourse verbs above, the decision to categorise them as outcome verbs is determined by their function in the discourse - they are outcome verbs when they emphasise outcomes of research in persuasive terms.

Unlike with other constituents where the identification of the EE is relatively easy, this is not very easy where the evaluation is expressed by the verb. The complexity seems to

arise from the availability of various options of looking at the EE. The first option is that of the quoted source as EE. This has been seen in the case of discourse verbs in which by choosing the reporting verb, the writer is at the same time signalling either agreement or disagreement with the quoted source - for example, the difference between **claim** and **pointed out** as has been seen in Chapter 4. The second option is that of the proposition as EE. This can be seen in it-constructions, where there can be only one possible EE - the proposition. An example of this is '*It should be noted that discourse analysis is an important field of language study*' in which the EE is the proposition in the that-clause. A third option which is common with comparison verbs is that of both the cited source and the proposition as EEs. This is probably because there is a comparison of two entities and it depends on which is more dominant in the available context. For example, in ST5.19 both the *data* and the conclusions of other researchers *that compliments tend to be quite predictable (formulaic)* are compared and seem to be of equal importance.

The categorisation of evaluative verbs above does not show any direct correlation between verb categories and the parameters of value. Assigning categories of value to verbs is dependent on a wider discourse context in which the verb appears. For example, a comparison verb such as **reveal** in ST5.23 can be interpreted as expressing the significance of result, whereas the same category verb **facilitate** in ST5.26 expresses the usefulness parameter.

The discussion above has suggested that the reporting verbs can be divided into categories depending on whether the reported source is other researchers or data. Some

verbal process verbs seem to be commonly attributed to both other researchers and data, for example, **suggest** as illustrated by ST5.13 and ST5.24 above. It should be noted however that there are more verbal process verbs attributed to other researchers than to data. For instance a verb such as **claim** appears to be used exclusively with reference to other researchers/people. With comparison verbs, the picture is different in that most of the comparison verbs are attributed to data whereas very few are attributed to people implying that there is more comparison of data (methods or findings) than of people.

The last category - outcome verbs - provides an interesting departure from the first two categories. In this group of verbs, there is virtually no reference to other researchers. The verbs appear to be exclusively attributed to data. Despite the fact that these verbs report findings which are the result of individual actions, in the ARA these findings are typically de-personalised - the findings and conclusions are presented as arising from the data themselves and not from researchers. Thus it appears more conventional when reporting a finding to say, for example, "The results have proved that fossilization exists" than to say, "I have proved that fossilization exists". It is also important to realise that reporting research outcomes usually comes at a very late stage in the paper, typically in the results, discussion and conclusion sections of the paper where there is likely to be less personalisation than, for example, in the introduction or methodology sections.

The distribution of the verbs between the two entities is determined to a great extent by what is being evaluated at the time as well as at what stage in the text the evaluation is being made. For example, the concentration of discourse verbs reporting other people is

mostly found at the beginning of the text where the writer is reviewing previous literature in order to support his/her own claims or to refute the cited claim in order to put forward an alternative one. The discourse verbs are very few with reference to data probably because data do not literally verbalise opinions or findings - people do. In a few cases where data has been evaluated by discourse verbs, the latter are often used metaphorically. On the other hand, the occurrence of fewer comparison verbs with reference to other researchers implies that in ARAs comparison typically involves data rather than people, while the virtual absence of outcome verbs with reference to other researchers results from the generic convention of depersonalising findings. It should also be mentioned that the majority of the outcome verbs are those involving present research. Where outcomes of other research are alluded to, this is typically to support the findings of the present research or to draw comparisons.

The above discussion of evaluative verbs can be summarised by Figure 5.1 below.

Type of Verb	Reference to Other People	Reference to Data
Reporting	++	+
Comparison	+	++
Outcomes	-	++

Key: ++ Very common  
 + Common  
 - Not found

Figure 5.1: The distribution of evaluative verbs in ARAs

The categories above are not watertight. As these verbs are basically divisions within the broad category of reporting, it is not surprising that there is 'bleeding' from one category to another (Thompson and Ye, 1991: 370). In addition to the problem of

'bleeding', there are also a few verbs which cannot easily be fitted into any of the established categories. The following are examples of these problem verbs:

ST5.27: EC22

Turning to the dynamic properties of the system, the result that high inflation equilibrium  $B^*$  is stable **implies** *that the system cannot generate accelerating inflation.*

ST5.28: EC26

This does not **mean** *that economic material may not supply more elementary cases where the method will be fruitful.*

ST5.29: EC26

*Any alternative hypothesis*, leading to systematic errors in expectation may **bias** the die in favour of some particular presupposition concerning policy.

The three verbs above are borderline cases and therefore difficult to handle. For instance, although **imply** has been classified above as a discourse verb, it is not a verbal expression in the sense of the other verbs in that category. It appears to express the effect on the reader rather than a verbal activity. It can be seen to fall under the same category as **mean** in the second sentence. Both verbs can be seen in the sense of the *scientific ideal of results speaking for themselves* and can thus be interpreted as either discourse or research outcome category verbs. Unlike the first two verbs, **bias** is a completely different kind of verb because it comes as part of an idiomatic expression 'bias the die' whose meaning needs 'unpacking' - translating it from its idiomatic form to its congruent normal meaning (see Hunston, 1989) - before any attempt at categorisation. Because of the complex nature of language use, the realization of most established categories is not always simple and straightforward and often results in odd cases which do not fit into categories. Thus the conclusions and generalisations made on the basis of frequent occurrences in this study are based on typicality rather than absolute certainty.

## 5.2.4 The Adverb

Among the many syntactic functions of the adverb, two seem to be relevant for the analysis of evaluation. On the one hand, the adverb can appear within the clause as an adjunct or a subjunct; on the other hand, it can appear outside the clause structure as a sentence adjunct (disjunct).

### 5.2.4.1 Within the Clause

#### (a) Adverb as Adjunct

In this position the adverb can appear anywhere in the clause performing an adverbial function (modifying the verbal group). Let us look at the following examples from the data:

ST5.30: EC3

Doubling payoffs does not affect behavior. With monetary incentives the authors **strongly reject** *the fairness hypothesis*.

ST5.31: EC23

Although these variables can be experimentally manipulated, as we did in the preceding studies, *they cannot easily be measured and incorporated into a formal model*.

ST5.32: EC26

*This is clearly demonstrated* where Keynes gives instances where he feels the application of Tinbergen's method *was* and *was not* appropriate.

ST5.33: EC21

The existence of such markets for long-term claims on income flows appears to be such a natural idea that *many finance theorists erroneously try to model the real world as if such markets had been around all along*; many theoretical models effectively assume that the dividend flow from investments equals total income.

In the first three examples, the adverb as an adverbial has no direct relationship with the EE; since it modifies the verb which typically carries the main evaluation, the evaluation in the adverb can best be described as supportive or secondary. There are, however, a few exceptions where the adverb carries the dominant evaluation of the



clause. This is evident in cases where the verb is not in itself evaluative. For instance, in ST5.33, the adverb **erroneously** and not the verb 'try' carries the main evaluation.

#### (b) Adverb as Subjunct

In addition to being an adverbial, the adverb can also perform another function in the clause - that of a modifier for an adjective or another adverb. From the data the subjuncts are either intensifiers, classifiers or emphasizees. Let us look at the following examples:

ST5.34: EC22

*Our findings are **broadly consistent** with those reported in other studies.*

ST5.35: EC22

*A **statistically significant** relationship exists between concentrations of pollution and current and lagged GDP only for lead, calcium, and arsenic.*

ST5.36: EC36

*Models in which the high inflation trap is found cannot do this and are therefore **seriously flawed**.*

ST5.37: H1

*It seems **fairly clear** that US administrations have looked on Labour domestic policies with a critical eye, much more so than on Conservative.*

In the above cases the adjective provides the major evaluation of the clause with the accompanying adverb modifying either the truth, the quality or the intensity of the evaluation. In the first case the evaluation is **consistent + modality** which can be interpreted as **not strictly consistent**. In the second example the adverb functions as a classifier. Here the writer seems to be saying, 'The relationship is **significant** in the strict scientific sense of the term' - i.e. in statistical terms. In the third example, **fairly** modifies the intensity of the value **clear** by suggesting that the clarity in question is not absolute.

The data indicate that a large majority of adverbs typically express either the Certainty or Control parameters of value. This could be related to the fact that the adverbs which occur are largely expressions of modality or hedging. An example is that of **fairly clear** above in which **fairly** modifies **clear** and thus expresses the degree of certainty. In the same way as all modifications of certainty, this adverb also indicates the degree of writer responsibility (see Chapter 3). Expression of Certainty can also be seen in, for example, **clearly** and **obviously** above. The other parameter, that of Control, can be seen mostly in cases of adjuncts such as **easily** above which comments on ability rather than certainty. There are a few adverbs, however, which cannot be related to any of the four parameters of value. These are adverbs such as **strongly** in ST5.30 in which it is the verb which is the main evaluation. For instance in this example the main evaluation is **reject** and not **strongly**: so the adverb just reinforces the verb - and the adverb does not have a category of its own.

#### 5.2.4.2 Disjuncts

Several writers of grammar have pointed out the evaluative function of the disjunct, particularly the effect of its position in relation to the sentence on which it comments (see for example, Leech and Svartvik 1975; Young 1980; and Quirk et al., 1972, 1985). Since syntactically the disjunct is an element of the sentence that lies outside the subject matter of the sentence, the evaluation carried by the disjunct is not restricted to a particular constituent but comments on the whole sentence which it accompanies. For the purpose of the study, disjuncts can be divided into two categories - certainty disjuncts and those which express personal feelings.

## (a) Certainty Disjuncts

These disjuncts can be seen to work in the same way as some certainty adverbs, the only difference being that they comment on the whole proposition instead of individual constituents of the clause. Examples of these are:

ST5.38: AL4

**Clearly**, *it is not enough to posit a given unobserved cause simply because it would explain our phenomenon.*

ST5.39: H29

*This was **certainly** an exaggeration,* for Georges-Picot had spent relatively little time in Middle Eastern postings.

ST5.40: AL3

Is it possible though that an 'easy' topic like 'Susan visits the supermarket' can be easier to understand under some conditions than under others? **Obviously** *the answer is 'yes'.*

ST5.41: EC23

**Evidently**, *market setting is not sufficient to eliminate the effects of ambiguity and comparative ignorance.*

In the examples given, the disjuncts **clearly**, **certainly**, **obviously** and **evidently** comment on the truth of the propositions. They can therefore be seen as expressing the certainty scale of evaluation.

## (b) Expression of Writer's Feelings

Unlike that of the certainty disjuncts above, this category seems to work differently in that the disjuncts comment directly on the writer's feelings rather than on the content of the proposition. Examples of this category are:

ST5.42: AL6

**Sadly (but perhaps not surprisingly)**, *Forbes provides no evidence to support his emotive claims, nor does Madsen in his reply.*

ST5.43: EC22

Therefore, a study of environment and growth should aim to be as comprehensive as possible. **Unfortunately**, *a paucity of data limits the scope of any such study.*

ST5.44: EC26

**Ironically**, *this has largely arisen from the initial success of the Keynesian revolution, although Tinbergen's early work hitherto was fulfilling a basic demand.*

ST5.45: EC24

Once one accounts for the transfer of labor into manufacturing, one finds, **surprisingly**, *that with regard to labor productivity growth, manufacturing in both Singapore and Taiwan actually underperformed the aggregate economy.*

ST5.46: AL35

Another group of studies has attempted to determine the effects of text modifications on L2 listeners/readers. Many have been interested in the effect of syntactic simplification, examining the basic hypothesis that the less complex syntactic structures will be easier for NNSs to comprehend. **Interestingly**, *the research has not provided much support for this hypothesis.*

Although this category of disjuncts can also be seen to comment on the content of the subsequent proposition, this is done in an indirect manner. For instance, **interestingly** in ST5.46 is an expression of the writer's personal feelings, and the basis of these feelings is expressed in the subsequent proposition. While in the certainty disjuncts, it is not possible to drop the disjunct and at the same time retain the validity of the proposition, in the case of personal feelings disjuncts, dropping the disjunct does not affect the validity of the proposition on which it comments. This is due to the fact that the personal feeling disjunct evaluates the proposition by directly evaluating the writer's personal feeling: the proposition comes in as the basis for the feeling. In the example, the basis for the writer's feeling is provided by yet another evaluation which is part of the proposition - '*the research has not provided much support for this hypothesis*'. It has been suggested in this study, therefore, that this group of disjuncts announces evaluation rather than gives it (see Chapter 4 above).

### 5.2.5 Negation

Another important grammatical resource through which evaluation can enter the text is that of negation. Interlocutors can say whether they agree or disagree through their choice of polarity. Through negation, the speaker makes a negative statement by expressing the opposite or the absence of something. In the English clause negation is typically expressed in the finite element of the mood choice (see, for example, Halliday 1985a, 1994). Negative polarity can also be expressed in other ways than through the finite. For instance, it can be expressed explicitly through the attachment of suffixes or prefixes such as in **unhappy** or **careless**; or implicitly it can also be carried by words such as **hardly**, **seldom** (Young, 1980) and so on; or what Pagano calls covert negatives which are defined as “propositions expressing a negative meaning but having a positive form” (Pagano, 1994: 250). For example, in ‘*I forgot*’ the verb **forgot** can be expressed explicitly as ‘did not remember’ (ibid.: 250). An example of this type of negation from the present data is:

ST5.47: EC24

This view, however, **ignores** an equally remarkable record of factor accumulation.

In the above example, the verb **ignore** can be seen as carrying a ‘mental process + negation’ (i.e. take into account + not = does not take into account). This indicates that the lexical verb may encode negation as part of its meaning. In the above context, **ignore** makes a much stronger negative statement than ‘does not’.

Before discussing how evaluation is realized through negation in this genre, it is important to discuss very briefly the function of negation generally in order to explore its relationship with evaluation. The function of negation at discourse level

has been commented on by several researchers (e.g. Tottie, 1982, 1987; Pagano, 1994; Barton, 1995). Tottie (1982, 1987) sees two major functions of negation - rejections and/or denials. Pagano (1994) argues that negation in text in which there is only one producer, the writer assumes the roles of both the producer and receiver of the text and thus anticipates the reader's questions - it is used for interactive purposes. The author differentiates between two functions of the negation.

#### Example 1

In Trankle (1985), Expert System Adaptive Control (ESAC) is described. The system consists of a self-tuning regulator augmented with three different expert system modules: the system identifier, the control system designer and the implementation supervisor. *A real time version of the system has not been implemented.*

#### Example 2

Anyone with a passion for hanging labels on people or things should have little difficulty in recognizing that an apt tag for our time is the Unkempt Generation. *I am not referring solely to college kids.* The sloppiness virus has spread to all sectors of American society. People go to all sorts of trouble and expense to look uncombed, unshaved, unpressed.

Source: Pagano (1994: 253 -54).

According to Pagano, in the first example the writer denies what was expected while in the second example, (s)he is aware of dubiousness of some parts which might lead to possible misinterpretations and therefore the writer "point[s] to the ambiguous stretches to cancel the potentially wrong interpretations" (Pagano, 1994: 254). Among researchers on the role of negation in discourse is Barton (1995) who sees negation in terms of metadiscoursal functions especially in joining clauses. He refers to contrastives as managing denials, reformulation of claims and making counter-claims (Barton, 1995).

Coming back to the realization of evaluation through negation in text, negation can function as evaluation in its own right or support other evaluations which it accompanies.

#### 5.2.5.1 Negation as Independent Evaluation

This refers to cases where there is no other signalling of evaluation in the sentence except that of negation.

ST5.48: EC24

*This study*, however, **does not include** adjustments for the age, sex, or educational characteristics of the working population in its estimates of labour input.

ST5.49: AL1

It is conventional to assert that pedagogic grammars have a quite different purpose from linguistic grammars. At one level, this is obviously true - they are read by different people - but it is also evident that *applied linguists* who have seriously considered the relationship between description and pedagogy, and who have produced pedagogic material, **do not in fact maintain** this separation of theory and practice.

The above examples show that negation can be evaluative in its own right without being attached to an evaluative term. In the above examples it is found in the vicinity of verbs such as 'include' and 'maintain' which are not explicitly evaluative in themselves, but which do carry evaluation because of the negation.

#### 5.2.5.2 Negation as Supportive Evaluation

This category is by far the most dominant in this type of genre. Here the negative works with already existing evaluation to reverse the pole of value, for example, from true to untrue, clear to unclear, certainty to uncertainty, and vice versa. The following are typical examples:

ST5.50: EC22

Importantly, there is *no obvious economic rationale* for the exclusion of the functional forms which imply this feature of the demand for real balances.

ST5.51: AL34

There is **insufficient** *space* to explain completely how this table was derived, but it serves some comment.

ST5.52: EC27

However, the available evidence **does not support** *the hypothesis that cross-country differences in environmental standards are an important determinant of the global pattern of international trade.*

ST5.53: EC23

Although these variables can be experimentally manipulated, as we did in the preceding studies, *they cannot easily be measured and incorporated into a formal model.*

ST5.54: AL33

However, given the *on-line* delivery of monologue, it is perhaps **not surprising** *to find that the monologues studied do not always display closely-knit patterns of chain interaction such as those defined by Hasan (1984) in her data.*

In all the above examples, negation has been attached to already existing evaluation.

In ST5.52, for instance, the dominant evaluation is **support** to which negation **not** has been added. Negation here reverses the evaluation and can therefore be seen to play a supportive role.

The discussion above has indicated various ways in which evaluation can enter the text through negation. From the examples given, the writer uses negation to make comparisons between own data and previous research, for example in ST5.52 ‘evidence **does not support** the hypothesis’; or it can be used to reformulate or clarify a position, for instance, **does not include** in ST5.48.

### 5.3 Evaluation and Propositions

So far the focus has been on individual constituents which carry evaluation. While this is important as a starting point, we must bear in mind that a text is not just a list of independent sentences but is made up of a series of linked propositions meant to



put across the writer's intended message. It therefore seems logical to argue that the most effective way of analysing evaluation in text is to examine evaluation signals within the context of the propositions in which they appear. This is very important since the proposition itself provides the context for the meaning of these constituents.

The discussion above has already hinted that evaluation can have either a limited or broad scope depending on whether it is attached to an individual constituent in the clause or to a proposition. From the data, evaluation can have as its scope a whole proposition - or more than one - if it is carried by, for example, the it-clause, disjuncts or labels.

### 5.3.1 The It-Clause

Here the evaluation is mediated by the it-pronoun. The importance of the it-clause structure in evaluation has already been seen in Chapter 4 on adjectives in which the anticipatory 'it' stands in for either the that-clause or the to-infinitive clause and thus determines the parameter of value expressed by the evaluation in that clause (see also Section 5.2 in this chapter on adjectives). The following are typical examples of the it-clause:

ST5.55: H4

Thirdly, even if the economic issues are not raised, *it is still **possible** that the occupational and class status of early members may explain the attraction of the NSDAP.*

ST5.56: AL35

Before proceeding to the discussion, *it is **important** to address the issue of generalizability of the results*, since the discourse samples were obtained from only two speakers.

In the examples above the AVs **possible** and **important** evaluate the whole proposition carried by the that-clause and the to-infinitive clause, respectively. It is

through the mediation by the anticipatory ‘it’ that the scope of the above AVs extends over an individual constituent in the clause to comment on a whole proposition (cf. disjuncts).

### 5.3.2 Disjuncts

The discussion in 5.2.4.2 above has illustrated the difference between disjuncts and other adverbs in the clause. While other adverbs have been shown to comment on individual constituents of the clause, disjuncts have been seen as commenting on whole propositions. It is the position of the disjunct outside the subject matter of a proposition that extends its scope over the clause.

### 5.3.3 Labelling

Another way of evaluating the proposition is through a label. Here the writer expresses evaluation by assigning an attitudinal label to an entity.

ST5.57: EC1

One of the **important** *features* about the WIRS in this study is *that it provides a wealth of establishment characteristics which may influence the attitude of the union, employer and other workers to an individual’s membership decision.*

In this example the evaluation **important** is grammatically attached to the entity *features*. However, this immediate EE is just a label which is later lexicalised by the that-clause which follows. By evaluating a noun which serves as a label, *features*, the AV **important** evaluates the whole that-clause mediated by the label and thus the scope of the AV is extended. As will be seen in the discussion of Scope later, the label may cover a much greater range of information when it is used to encapsulate or prospect a large chunk of text.

## 5.4 Evaluation Harmony

As has been stated, the ultimate objective of this study is to look at how evaluations in the text work together towards the achievement of global evaluation (or purpose) of the text. As has been done with previous analyses in this study, the analysis in this chapter focuses primarily on examples of ROE and not of TOE. By looking at how the various evaluations in the text can be interpreted by the reader as signals of how the text hangs together, the analysis can be seen as a combination of Winter's (1977, 1994) clause relations and Sinclair's (1987, 1994) concept of encapsulation. A close look at the backward and forward movement of evaluation from one sentence to another in the framing of the text can help explain why the reader manages to pick out the correct evaluation even when confronted by other conflicting evaluations in the text. The short stretch of text below illustrates how the analysis of harmony can be carried out.

ST5.58: AL1

(1) **There is no doubt** that computer-assisted corpus linguistics **does reach** some parts of the language other grammars **fail to reach**. (2) The basic **insight** that grammar and lexis are closely integrated **is important** linguistically and pedagogically, and the grammar **provides evidence** to support it.

(3) But overall the description **is disappointing**. (4) Some of my arguments **have been supported** by reference to *COBUILD*'s own concordance data and **it is clear** that **availability of information does not guarantee accurate description**. (5) This **might suggest** that **it is only the execution which is faulty**, perhaps **the result of inexperience or urgency** to complete within a specified time; **such problems are curable**, at least in theory.

(6) But I believe **there are more fundamental difficulties**. (7) This is the first grammar to be written by grammarians who **claim to have imposed** on themselves **a prohibition on intuition** and a **single-minded reliance** on computational analysis of a corpus - the campaign for 'Real English'. (8) The **reason for this is understandable**. (9) What **I want to suggest** is that **the price** of unearthing **genuinely new insights** into lexicogrammatical patterning **has been loss of control over the observational relevance and accuracy in some parts of the description and the explanatory adequacy** of others. (10) This is both a linguistic point and a pedagogic point, and one I think **Firth might have agreed with**.

The highlighted cases of evaluation in this text are a combination of conflicting poles of evaluation, some being positive (e.g. **important** and **provides evidence**) while some are negative (e.g. **fail to reach** and **disappointing**). The task facing the reader is how to interpret the text in the way in which the writer intended it to be interpreted. An attempt is made in this section to illustrate an approach to analysis which explains how the reader manages to make sense of the text despite conflicting evaluations in the text. Since Harmony works at a discourse level, whole propositions and not individual constituents are considered for this analysis. It should be reiterated here that the evaluation which goes on in the text is not always the obvious type and that the evaluation is not necessarily provided by the semantic or dictionary meaning of a lexical item but by the discourse context within which the item appears. As the analysis of Harmony will illustrate, aspects such as the positioning of an evaluative constituent in the discourse can affect the kind of evaluation being expressed.

In the text, the main entity being discussed and evaluated is computer-assisted corpus linguistics/grammar (hereafter referred to as CACL). The text opens with a very interesting evaluative statement in s1, **there is no doubt** which can be interpreted as a positive-negative statement in that although on the surface it appears as positive evaluation, it predicts a negative shift to come. It may seem rash to make such a definitive statement about the context and the evaluation prospected by this phrase, but concordance evidence can be used in support of the interpretation of the phrase. Out of 136 concordance cases of 'there + no doubt' that I studied, 82 are used at or near the beginning of the sentence to set up an argument carried in the subsequent that-clause. Of these, 63 are followed by a counter-argument introduced by

contrastive markers such as ‘however’, ‘nevertheless’, ‘yet’ and ‘but’. The following are a few examples of this phenomenon from both the data and the concordance (note the contrastive markers in square brackets):

1. Data examples:

ST5.59:AL35

**There can be no doubt** that some aspects of these speakers’ discourse are idiosyncratic; [nevertheless], the fact that the production of clause types shows the same tendencies as previous studies indicates that the results are representative.

ST5.60:AL1

**There is no doubt** that previous grammars were vulnerable to the charge of distortion as a result of chance observations. [But] in recognition of that fact, the more responsible grammarians always acknowledged that their categories were flexible, or fuzzy-edged, and that examples of category membership were not exhaustive.

2. Concordance examples (I am grateful to Collins Cobuild for the examples):

ST5.61: GW0010

**There is no doubt** also the need to transmit know-how [but] this must take second place, for it is obviously somewhat foolhardy to put great powers into the hands of people without making sure that they have a reasonable idea of what to do with them.

ST5.62: GW0263

**There is no doubt** that a ban will cost the arable farmer money (it won’t cost the mixed farmer any as he uses his straw) [but] there is also no doubt that the soil benefits from incorporation by a build-up in humus.

ST5.63: GW0038

**There is no doubt** that this was a magnificent professional opportunity for me, in my role as photo journalist, [yet] I felt I could not take it.

From the use of **there is no doubt** in s1, it can be concluded that the expression is more of a concessive statement than a categorically positive one. In this sentence, CACL is assigned positive value by the AV **does reach** and is contrasted with *other grammars* which **fail to reach**. In s2, CACL is said to **provide evidence** to support the **important insight** of the close integration of grammar and lexis. However, this positive value has been signalled as inside a concession **there is no doubt**, and thus

the reader expects contrary evaluation to come, and for this evaluation to carry more weight.

In s3, the prediction of s1 is fulfilled when negative evaluation of CACL is introduced through a contrastive marker 'but'. This shift in the pole of value is further strengthened by the term 'overall' which suggests that the statement now being made is a more general and therefore more 'weighty' evaluation than the previous one. Here the *description* provided by CACL is negatively evaluated as **disappointing**. The next sentence s4 consists of several expressions of value: the sentence begins with the writer's positive evaluation of his own research: '*some of my arguments have been supported* by reference to COBUILD's own concordance data'. Despite the seemingly positive value expressed by the sentence, overall this is negative from the point of view of the main EE, CACL, since the *arguments* referred to are against CACL. The fact that the evaluation is intended to be seen as negative is reflected by the fact that the evaluation is linked by the additive 'and' (rather than 'but') to another negative evaluation of CACL - 'availability of information **does not guarantee accurate description**' with the latter evaluation introduced through expression of high certainty **it is clear**. The positive evaluation of the writer's own research as opposed to that of CACL in s4 is presented as a basis for the negative evaluation '**disappointing description**' in s3.

In the following sentence, s5, a hypothetical-real situation is set up (see Winter, 1977, 1994; Hoey, 1986; and Hoey and Winter, 1986, on hypothetical-real in clause relations). The hypothetical stretch is introduced by 'this **might suggest**' in which

`this' anaphorically refers to the negative evaluation of CACL in s4: '*it is clear that availability of information does not guarantee accurate description*'. The hypothetical situation which is set up by s5 is that 'it is only *the execution* which is **faulty**' this resulting from '**inexperience** or **urgency** to complete within a specified time'. While this is a negative view of CACL, the negativity is however mitigated by 'only', indicating that not everything about CACL might be bad, thus restricting the 'damage' to a minimum. Although **faulty execution**, **inexperience** and **urgency** are negatively labelled as **problems**, they are also evaluated as **curable**, albeit very grudgingly, considering that the mitigation **curable** is qualified by 'at least in theory'. Thus s5 as a whole appears to minimise the possible problems - the evaluation might be said to be praising with faint damns.

However, since in a hypothetical-real relation the real is set up to either confirm or deny the hypothetical, the evaluations within the Hypothetical stretch are already set up as potentially reversible in the Real stretch to follow. Because in s5, the hypothetical status is signalled strongly by the presence of the modal expression 'might', the reader can expect the Real stretch to more likely be a denial rather than confirmation of the hypothetical situation. Taking this into consideration, it is not surprising that the Real stretch in s6 is introduced by a contrastive marker 'but' to reverse the grudgingly positive tone set up in s5. The main value in s6 which is preceded by the writer's explicit subjective opinion 'I believe' comes in the form of advance labelling **there are more fundamental difficulties** - with **difficulties** picking up **problems** in the previous sentence (and see the discussion of advance

labelling below). This advance labelling predicts (negative) evaluation to come later in the text (see Tadros, 1989, 1994 on prediction in text).

Sentence *s7* can be seen as the basis/justification for the negative evaluation in *s6*. Here the writer signals possible disagreement with the authors of CACL by the choice of the reporting verb **claim** to introduce the latter's defence of CACL: the authors **claim** to '**have imposed on themselves a prohibition on intuition**'. Taking into account that scientific investigation should be based on verifiable data, intuition is an unscientific approach to research and is therefore negative in this context. This negative evaluation, however, is reversed by the grammatically dominant term **prohibition** to make the nominal group as a whole positive (see Section 5.2 above about the role of the nominal Head in embedded evaluation). In this case the negative evaluation **intuition** is embedded within the positive dominant value carried by the nominal Head **prohibition**. The second part of *s7* also expresses positive evaluation: '**single-minded** reliance on computational analysis of a corpus'. Despite positive view expressed by the to-infinitive clause as a whole, by the choice of the reporting verb **claim**, the writer detaches himself from such value, and such detachment predicts evaluation (Tadros 1989). This prediction is carried forward (though not yet realized) in *s8* by the concessive evaluation **understandable**. The term **understandable** in the sentence gives the impression that although he does not share the views/reasons of the grammarians in question, the writer sympathises with the latter's reasoning. This interpretation of **understandable** as concessive is supported by the concordance data in which, out of the 102 cases of 'it + (be) **understandable**' examined, 76 carry a sense of sympathy, commiseration or making allowances but



not total agreement. A few examples below illustrate the concession (I am grateful to Collins Cobuild for the examples):

ST5.64: GW0224

The recent fuel crisis spread concern throughout the world that energy supplies were short, and would remain so for a long time, quite possibly worsening. While **understandable**, this reaction was rather paradoxical. There was almost no substantive basis for it since there was no physical shortage of oil....

ST5.65: GW0240

Admittedly it is **understandable** that people who were despised for their racial origin should react by saying that they were proud of it. But racial pride is not only stupid but wrong, even if provoked by racial hatred.

ST5.66: GW0124

Having said that "taking the money" is **understandable** doesn't make it right! We shouldn't be conned into playing one off against the other.

ST5.67: GW0240

Watson's behaviourism was a very **understandable** reaction to this state of affairs, and it had some methodological advantages - like so many other theories which deny what they cannot explain. As a philosophical thesis it was clearly wrong, even though unrefutable.

The examples above support the claim that **understandable** is not necessarily positive but concessive. In the examples given, the surrounding context implies that evaluating something as **understandable** typically does not mean agreeing with it. For instance GW0124 is a clear example of this - the writer argues that by saying that 'taking the money' is **understandable** does not mean that it is **right**. This implies that understandable is midway between outright rejection and outright acceptance - it is in this sense a concession.

Sentences s7 and s8 could be seen as a preparation for the point where the prediction made in s6 is fulfilled in s9. Here the writer makes his major evaluation signalled by 'What I want to suggest' - a thematic equative + explicit reference to himself as source of the evaluation to come, through 'I'. Even here one can see a continuing

balance of positive followed by negative evaluation. While the writer admits that the authors of CACL have attempted to unearth **genuinely new insights** (a positive thing in itself), he **suggests** that this has been done at a **price - loss of control over the observational relevance and accuracy in some parts of the description and the explanatory adequacy of others** (this is negative evaluation).

The final sentence s10 signals a switch from evaluation of the main EE, CACL, to that of the writer's own research. Linked by the anaphoric pronoun 'this' to s9, here the writer evaluates his major evaluation of CACL as 'both a linguistic and pedagogic point'. Although the evaluation in this sentence is not explicit, it is contextually determined. The statement appears to summarise the overall purpose of the preceding discourse - to make a **point**: the word point here appears to be synonymous to the goal/purpose of the writer's research, and is evaluative in that respect. To strengthen the evaluation, the writer brings in an authority, Firth (whom the authors of CACL claim to follow), to support his own evaluation.

From the text above, there are two important observations worth noting. The first is that although the aim of the writer is to criticise CACL, he does not do this by using outright negative evaluation. At some points there is also positive evaluation, **but in order** that the latter should not be confused as the main evaluation, where it occurs **it** is 'wrapped up' (or embedded) in negative value. Secondly, it is interesting that, **at key points** in the text, the writer's major evaluations are introduced through personal reference to the writer as source of that evaluation, for example, 'I believe' in s6 **and** 'I want to suggest' in s9. In this particular text, the use of the 'I' Self-Attribution

appears to be spread throughout the text. While in Chapter 3, it has been suggested that 'I' Self-Attribution reduces the degree of writer responsibility, in the context of the present paper, by accompanying vital evaluations, the self-attribution seems to achieve the opposite: it signals the writer's awareness of alternative viewpoints and therefore through attributing the evaluation to him/herself is making a tentative conclusion and leaving room for alternative opinions or conclusions by other researchers (see Chapters 2 and 3 on the discussion of self-reference as hedging).

In order to successfully comprehend the text and its evaluation, it is very important to acknowledge the contribution of other linguistic and contextual signposts which help in providing both cohesion and coherence to the text, for instance, cohesive markers such as 'but' in s3 and s6. Successful textualisations enable the reader to make appropriate inferential connections between clauses or propositions. One of the important contributions to text connectivity is that of clause relations. Winter (1994) defines a clause relation as:

the shared cognitive process whereby we interpret the meaning of a clause or group of clauses in the light of their adjoining clauses or group of clauses (Winter, 1994: 49).

In processing the meaning of the text above, relations such as concession(s1 and s8) and hypothetical-real (s5-s6) have been very important in our analysis of harmony. For instance, a common example of the hypothetical-real situation in text is that of the writer attributing a proposition to another source (Hypothetical) and later evaluating it (Real). Concessive relations have been seen where two propositions are compared - both are equally true but one is more important than the other (for instance between s1 and s3, and between s8 and s9, in which the second is more important than the first).

From the analysis and discussion of Harmony in text, it becomes clear that the non-harmonious evaluation is not to be taken as the main evaluation, since after its introduction, the writer immediately knocks it down. In the text above, the positive-negative value 'there is no doubt' in s1 predicts negative evaluation in subsequent sentences and also undermines the seemingly positive evaluations such as **does reach** and **provides evidence** which are in conflict (or non-harmonious) with the evaluative trend in the paper. Thus s1 can be seen to set up a framework in which we expect a switch from one pole of evaluation to the other. Since in this text, the first evaluations after it are positive, we expect a switch to negative, though in principle the switch could go the other way.

The point of the above analysis is that evaluation taken in isolation can often give a false picture of what actually goes on in the text. For instance, it has been seen in the analysis above that some of the poles of value are reversed once the evaluative statements are looked at in the context of surrounding evaluations. A good example has been that of s2 where CACL is given positive value by AVs such as **does reach** and **provide evidence**. This positive pole is reversed once these are interpreted from the perspective of the surrounding evaluations such as the dominant **there is no doubt** in s1. Thus from this dominant value which predicts reverse evaluation, the reader expects the positive picture given in s2 to be reversed later in the text. This supports one of the major claims in the study - the effect of evaluation is context dependent.

The analysis of harmony presented above can be diagrammatically illustrated in Figure 5.2 overleaf.

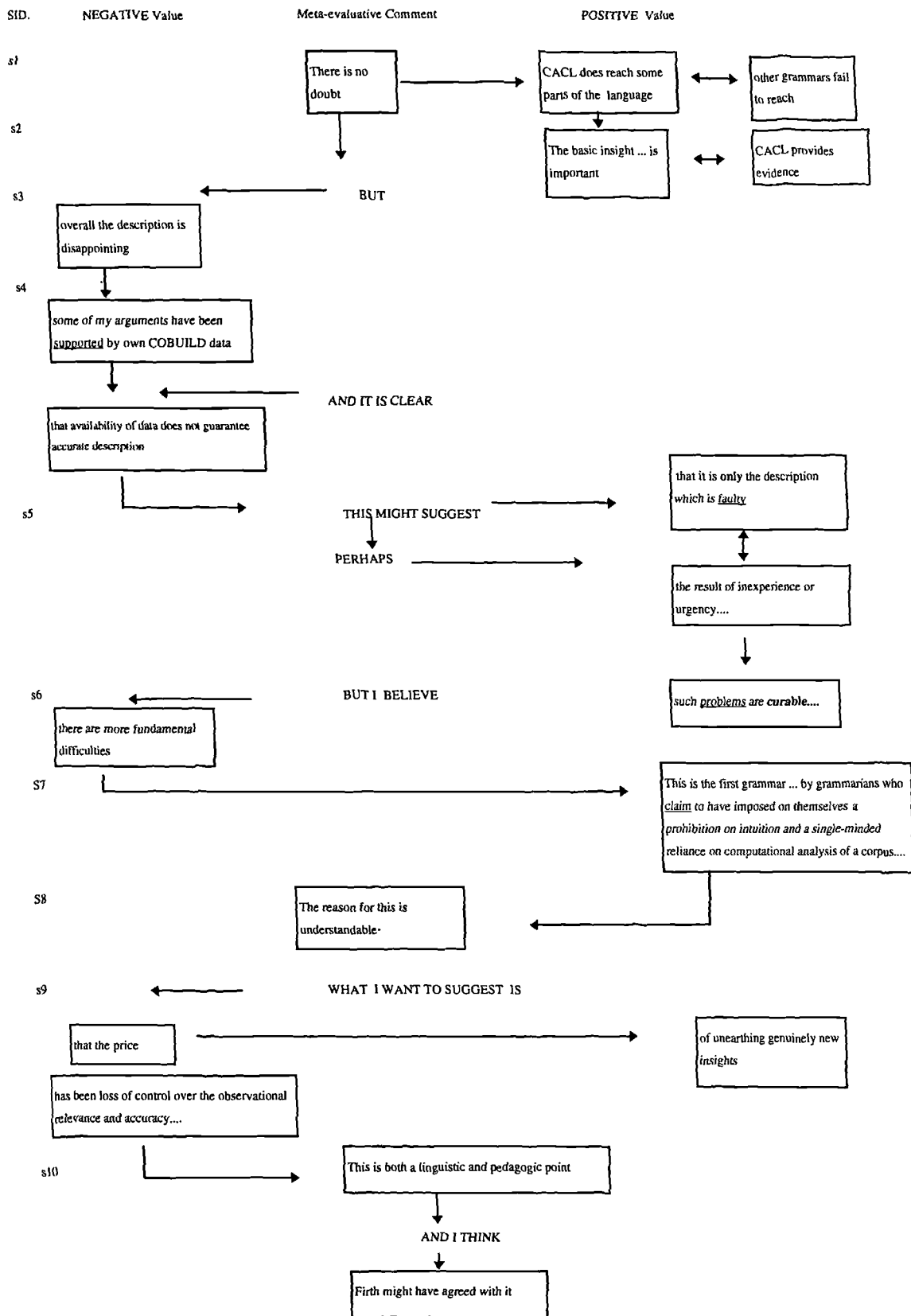


Figure 5.2: An illustration of evaluation harmony in a sample of text

## 5.5 Scope

So far the discussion has only used the concept of Scope in general terms. From the allusions to the concept in the above discussion, it has been suggested that the analysis of Scope can be used to illustrate how a text can be broken down into identifiable units or segments of meaning. The analysis of Scope is useful in enabling the researcher to identify the range of content commented on by any AV and to make more informed guesses about how the reader manages to identify this range.

Unlike in the analysis of Harmony above, where the idea was to look at the ways in which, through evaluations, the text hangs together, here the idea is to identify how evaluation (in this case labelling) can help the reader to understand the text by identifying segments of information in the text (cf. the distinction made by Halliday and Hasan, 1976, between texture and structure).

As has already been suggested in the sections above, the grammatical characteristics of an evaluative signal can affect the scope of the evaluation. For instance, Section 5.3 has illustrated the difference between evaluation commenting on a single constituent in the clause and that commenting on a whole proposition, the latter having a wider scope than the former. The following examples illustrate the distinction:

ST5.68: AL4

As these examples illustrate, *falsification is not a straightforward matter and is, in fact, extremely difficult, if not impossible to achieve.*

ST5.69: AL29

The **important** thing to grasp here is *that Evaluation itself has a part of its consensus structure the expectation of the basic clause relations of Reason/Basis, so that we could*

symbolize a common form of this text structure as an expected trio of Situation- Evaluation-Basis/Reason for Evaluation which is illustrated below in example 12.

In the first example, the AV is an adjectival group in the complement slot of the clause which comments on the entity *falsification* as **not straightforward, extremely difficult and impossible to achieve** but does not go anywhere beyond the clause. In the second example, however, the AV **important** comments on the whole that-clause for which *thing* is only a pointer. Thus while the Former AV has a limited scope, the latter's scope has been extended by means of the device of labelling.

### 5.5.1 Signalling Scope through Labelling

The data shows that labelling is the main strategy that the writer can use to comment on larger stretches of text beyond a single proposition, thus extending the scope of an AV. Labelling is described by Francis (1994: 83) as “one of the principal ways to connect and organize written discourse”. Francis looks at labelling from the point of view of nominal-group lexical cohesion. According to her:

The main characteristic of what will be termed a label is that it requires lexical realization, or lexicalization, in its context: it is an inherently unspecific nominal element whose specific meaning in the discourse needs to be precisely spelled out (Francis, 1994: 83).

In order to identify a label in text, Francis suggests that:

any noun can be the head noun of a label if it is unspecific and requires lexical realization in its immediate context, either beforehand or afterwards (Francis, 1994: 88).

The identification is important in the analysis since it offers some criteria for distinguishing a label from a non-label in discourse. Thus a noun or nominalisation qualifies as a label if the reader has to look elsewhere in the text for its meaning. This

meaning may either precede or follow the noun, and therefore, in a text, a label can either be forward looking (prospective) - or backward looking (retrospective).

### 5.5.2 Advance Labelling

According to Francis (1994), an advance label functions as a signal to the reader as to the perspective from which the writer wants subsequent information to be understood and judged. The analysis of the text below illustrates how advance labelling works in text (NB. the highlighted parts of the text identify openings of segments of information).

ST5.70: AL4

**(1) There are, however, a number of problems with the D-N model.** (2) (a) **For one thing, it is intended only to explain individual events;** (b) but usually scientists are interested in explaining not individual events but regularities (Salmon 1989). (3) (There are exceptions, of course, for instance the disappearance of the dinosaurs.) (4) (a) That is, we do not want to know why Fred acquired X before Y so much as we want to know why learners in general (or A-speakers rather than B-speakers) acquire X before Y; (b) but in a D-N explanation this would be part of the explanans not the explanandum.

**(5) Again, there are many phenomena that are neither logically necessary nor even very likely, and yet are not by that token inexplicable.**(6) To mention one often-cited example, take paresis, a condition that occurs among persons who have passed through all stages of syphilis without being treated, but only in one but four of such persons.(7) Hempel's model cannot explain why Fred has paresis, since the probability is that he does not have it, even though he has untreated syphilis.(8) One can see the relevance of this problem to SLA theory, given that at best only a minority of learners completely acquire an L2.

**(9) Another problem with applying the D-N model to SLA is that the model requires law, and we do not have any.**(10) (a) Or if we do, they are to be found in our property theory; (b) for example, all languages are structure-dependent. (11) (Keep in mind that a law is much stronger than a generalization, in that only a law supports counterfactual statements. (12) That is, if, for example, 'All the world's languages are structure-dependent' expresses a law, it is equivalent to 'If X is a language it must be structure-dependent'. (13) Commitment to a law of structure dependency is commitment to the claim that any hitherto undiscovered language will be structure-dependent or else it will not be a language. (14) But if I express the true generalization that all the coins in my pocket are dimes, there is no claim implied that when I put a quarter into my pocket it will turn into a dime.) (15) (a) But in fact, as Cartwright (1983:130) points out, this is a general problem; (b) even in the physical sciences, 'covering laws are scarce'.

**(16) A further problem** is that, given the logical form of a D-N explanation, at least when the covering law is a biconditional, as in the case of equations (if p then q and if q then p),



there is nothing to stop us from explaining the pendulum's length by appealing to its period, or explaining the storm by appealing to the barometer, which is clearly counterintuitive.

The article by Gregg (1993) from which the extract comes is very critical of general scientific explanations of issues and problems involved in SLA research. In this particular excerpt, Gregg attempts to show deficiencies of one of the scientific models of explanation - the deductive-nomological (D-N) model of Hempel (1965).

The text begins with an advance label *problems* in s1 which is introduced through the existential-there - 'There are...a number of *problems* with the D-N model'. The label *problems* is an unspecific noun which is lexicalised in subsequent sentences. The prospective labelling in s1 sets up the evaluative framework (in this case, a negative framework) within which the subsequent stretch of information on which it comments should be understood. The labelling evokes the reader's expectation that (provided it is a well-written text) a discussion of the problems prospected by s1 is going to follow.

Following s1 the text consists of a chain of negative evaluations assigned to the D-N model, these negative evaluations labelled as **problems** (see highlighted parts of the text). This chain of negative evaluations signals information chunks within the text. These signals mark openings and closures of hierarchical units or segments of the text. This can be illustrated by Figure 5.3 below.

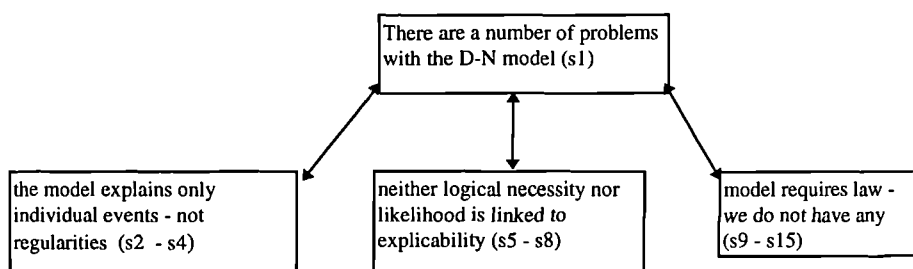


Figure 5.3: Scope and Segmentation of text

At the top level, the text can be seen to consist of a dominant member - s1 - setting up subsequent units of information. The AV in s1 sets up broad units which are further signalled by the repetitions of the AV **problems** - 'another problem' and 'a further problem' (see s2-s8 and s9-s15).

Although in this text, labelling (including the repetition of the label) has been used to segment the text into information units, there are other means of chunking the text, such as, for example, the traditional notion of paragraph. In structuralist grammar, a paragraph is believed to signal openings and closures of main ideas, the main idea typically signalled by a topic sentence. Although in the texts used, paragraphs still play an important function in role in chunking text (such as in the text above), from the point of view of evaluation and relevance markers, the relationship between a paragraph and evaluative segments is not well defined. Although in the text above the chunking /labelling in the text above (ST5.70) coincides with the beginning of paragraphs (i.e. s1 for first paragraph, s5 for second paragraph, s9 for third paragraph and s16 for fourth paragraph), this is not necessarily the norm - there are however many cases where labelling is not linked to paragraphs (see, for example, the text used in Chapter 7 for the illustration of the interrelationship between Scope and Harmony - Appendix 2E).

Finally, it is important to recognise the overlap between the analyses of Scope and Harmony. Though Scope is related to text structure while Harmony is related to texture, both analyses are equally important in accounting for the reader's comprehension of both the content and the point of view of the text. On the one hand,

if we take s1, 'There are, however, a number of problems with the D-N model' in ST5.70, this advance labelling does not only mark an opening of a segment of information (Scope) but it also sets up the harmony for the stretch of text on which it comments - whatever value is expressed within the limits of that stretch should be interpreted against the harmony set up in s1. Thus any disharmonious evaluation has to be interpreted as not the main point. This implies that where there are markers of segmentation, these also set up harmony for the text. Equally, if we take s6 of ST5.58, 'But I believe there are more fundamental difficulties', which has been seen as setting up the harmony for subsequent information, this can also be looked at, from the point of view of Scope, as an advance label which signals the opening of a segment of text on which it comments (see Figure 7.1 on the interrelatedness of Scope and Harmony).

### 5.5.3 Retrospective Labelling

As the name implies, retrospective labelling is realized differently from advance labelling. Francis (1994) argues that the major differences between advance and retrospective labelling are that while the function of an advance label is "to tell the reader what to expect" the retrospective label **encapsulates** a stretch of discourse.

According to Francis, the retrospective label:

indicates to the reader exactly how that stretch of discourse is to be interpreted, and this provides the frame of reference within which the subsequent argument is developed (Francis, 1994: 85).

While the latter type precedes its lexicalisation, the former follows it. The following exemplify retrospective labelling:

## ST5.71: AL7

The pragmatic purpose of the writer's statements of *situation* and *Problem* in the canonical form of such a methods text can be seen to establish *common ground* with the reader, prior to the major communicative act of *suggest/advise*, which is realized as *Response*.... **This useful concept of common ground**, drawn from the work of Stalnaker (1978), Clark and Marshall (1981), and Clark and Carlson (1982), is, however, challenged by Sperber and Wilson (1982, 1986)....

## ST5.72: PSY1

(1) Another, more direct, check on whether individuals vary in their rates of cognitive ageing is to consider the statistical implications of a situation in which some individuals show little or no change with age while others markedly decline. (2) In this age means of scores on performance tests will, of course, decline across successive age groups but these reductions in group means will be accompanied by correlated increases in variance between individuals as increasing age spreads the group across a wider spectrum of performance. (3) Figure 6 gives data for performance on digit span. (4) In tests of this kind it is crucial to allow even the least able individuals to attain non-zero scores and to so avoid 'floor' effects. (5) Accordingly individuals were first given lists of three, then of four, then of five digits, and so on, until their span was reached. (6) Scores are total numbers of lists correctly reported. (7) Given this expansion of the scale over which subjects are scored we see the standard deviations of scores between subjects steadily increase while, in contrast, mean scores steadily reduce with cohort age.

(8) Once again this picture of increasing diversity in ability against a trend of average decline in competence suggests that individuals do, indeed, markedly vary in their rates of cognitive ageing. (9) **This is a very optimistic finding** since it provides the first step towards finding out what factors promote cognitive longevity. (10) The knowledge that fortunate individuals who age unusually slowly do actually exist allows us to identify them, and, by *post hoc* research on their biological and social histories, to recognize which factors promote and which interfere with cognitive integrity in later years.

From these two examples, the labels '**useful concept**' and '**optimistic findings**', respectively, point the reader backward to the preceding text. They retrospectively package this stretch of discourse through the process of encapsulation. This not only provides the reader with a summary of the preceding text but also makes clear the point of view from which the information in the preceding text should be seen. The preceding text is a build-up, as it were, of various evaluations some of which are non-harmonious, but the retrospective label puts everything into the appropriate perspective. In many cases a label marks a switch from TOE to ROE and in doing so translates TOE into ROE. To illustrate this point, let us use ST5.72 above, which is

from a Psychology article about cognitive ageing. The following are examples of conflicting evaluations within TOE:

- s1: some individuals show **little or no change** whereas others **markedly decline**;  
 s2: means of scores of performance will **decline** across successive age groups but these reductions in group means will be accompanied by **correlated increases** in variance between individuals;  
 s7: the standard deviations of scores between subjects **steadily increase** while in contrast, mean scores **steadily reduce** with cohort age;  
 s8: this picture of **increasing diversity in ability** against a **trend of average decline in competence** suggests that individuals **do, indeed**, markedly **vary** in their rates of cognitive ageing.

While in the first three sentences (s1, s2 and s7) , the evaluation is mainly TOE, s8 contains both TOE and ROE and it is here that there is a shift away from TOE signalled by 'this picture...suggests...'. This shift from TOE to ROE is carried into s9 where there is evaluative retrospective labelling, '*This is a very optimistic finding*' in which *finding* encapsulates the preceding information whereas **very optimistic** introduces evaluation of the ROE kind as well as interpreting the preceding information which is now labelled as a *finding*. In this way, the retrospective label can be seen to translate TOE into ROE.

From the above examples of retrospective labelling, we can conclude that by summarising both the preceding discourse and the point of view, as well as checking whether the reader has understood the harmony suggested, the retrospective label indicates the end of the unit and predicts the beginning of another - hence it has a topic-shifting as well as text-organising function (compare Francis, 1994; Hunston, 1994).

As noted above, advance and retrospective labelling are not only useful in the analysis of Scope but can be very important signposts to look for in the analysis of Harmony. For instance, while advance labelling guides the reader by setting up the dominant harmony for a subsequent section and thus signals how to interpret what is to come, retrospective labelling summarises a stretch of text by checking whether the reader has understood and correctly identified the overall evaluative purpose of that stretch.

The discussion has indicated that while evaluation per se is not primarily organisational in function, it shows a strong tendency to coincide with certain stages of the text, more especially the beginning or the end of paragraphs or information units, thus marking the boundaries of such stages. This is consistent with previous findings such as those of Sinclair (1981), Hunston (1989) and Francis (1986, 1994) - as a text is both an interactive construct it is important to show a point of view about what is being put forward (see Sinclair, 1993 on encapsulation and Hunston, 1989 on Relevance Markers).

It should be noted that this chapter draws a great deal from Hunston's (1989) evaluation of relevance which basically deals with the textual function of evaluation. However, there are two important areas of difference between the present study and that of Hunston, more especially in terms of the analysis and emphasis. First, it has been argued that in this study, evaluation is divided into two main categories - TOE and ROE - the fact that all my categories and analyses are based exclusively on ROE and that Hunston does not make such a distinction implies that the two studies deal

with different categories of analysis. Another difference is that in terms of Relevance Markers, Hunston focuses mainly on retrospective labelling whereas I take both prospective and retrospective labels as equally important in exploring textualisation of value. I also take into consideration other signals in addition to labelling - for instance, in my study, Scope is not only signalled by labelling (this is made clearer in Chapter 6 in which conceptual organisation/patterning of text is as important as explicit textual patterning).

## 5.6 Conclusion

This chapter has explored the textual dimension of evaluation from both a microlevel and macrolevel perspective. First the microlevel analysis has shown that in ARAs the realization of evaluation is dependent on the exploitation of virtually all constituents of the lexicogrammar. The analysis has illustrated how any of the four main constituents - the adjective, the noun, the verb and the adverb - can carry evaluation. The data has also shown how another important discourse element, negation, can express evaluation - negating or reformulating a claim simultaneously evaluates it.

This level of analysis reveals that the grammar of the clause also plays an important part in providing a linguistic context for evaluation, enabling the reader to identify the entity being evaluated as well as the value being expressed. For instance, a modifying adverb has been seen as additional - evaluating the dominant evaluation in the proposition. An example is that of an adverb modifying an adjective, for example, **extremely good** where **good** is the major evaluation, thus reducing

**extremely** to a supportive role. The *it*-clause structure, on the other hand, extends the scope of the evaluative adjective over a whole proposition rather than a single constituent in the clause.

The macrolevel dimension, on the other hand, has shown that despite the importance of the microlevel analysis, very often evaluation remains ambiguous until placed within the context of other evaluations going on in the text. The analysis of Harmony, for example, has illustrated how one pole of value might be interpreted differently depending on the surrounding evaluations to the contrary. An example has been that of 'there is no doubt' which set up the harmony of subsequent evaluations so that even the occurrence of conflicting evaluations in subsequent sentences became unimportant. Scope, on the other hand, showed how evaluation can indicate the beginnings and ends of information units, thus segmenting the text into identifiable parts of information for better comprehension. Here the concept of labelling played a major role in marking text (see Hunston, 1989, 1994; and Francis, 1986, 1994, on relevance markers and labelling).

Finally, it is also very important to bear in mind that, in the analysis of textual realizations of evaluation, there are other textual signals which, despite not being related to evaluation, contribute a great deal to our understanding and interpretation of how evaluation works in text. These are, among others, discourse markers such as anaphoric reference, which could signal a link between evaluations, or contrastive markers such as 'but' and 'however' which may signal a switch in evaluative pole. Some of these have been used in the analysis of Harmony in Section 5.4 above.



Although a detailed investigation of these signals lies outside the scope of the present research, it is an important subject for future research.

## CHAPTER 6

### A MULTI-DIMENSIONAL ANALYSIS OF EVALUATION: BRINGING IT ALL TOGETHER

#### 6.1 Introduction

So far the study has focused on individual dimensions of evaluation - writer responsibility, parameters of value, textualisation of value - establishing a different framework of analysis for each dimension. This chapter combines these three dimensions and examines how analysing a text for evaluation from this three-dimensional viewpoint is potentially useful in providing a clearer picture of how the writer attempts to get his point across by signalling the differences between local and global evaluation as a step towards enhancing the reader's comprehension of the text. Applying this three-dimensional analysis to an evaluative stretch of text can help us describe evaluation in terms of its strength (who makes the evaluation as well as how committed the writer is to the truth of the evaluation), what type of evaluation it is (whether process or product-oriented evaluation, and its scale of value), as well as how such evaluation is realized in the language of the text; and to interpret such evaluation within the context of the surrounding evaluations in the text.

As has already been argued in the previous chapters, linguistic expressions of evaluation form an essential component of discourse in that frequent indications of attitude held towards the information given as well as towards the communicative value of the discourse itself provide an invaluable contribution to the organisation of

the content of a text. The contribution of evaluation to text organisation has been observed by several researchers who have found evaluation to be a central element in the rhetorical and discourse patterning of a text. Two of these patterns are Labov's (1972) narrative structure and Hoey's (1979, 1983) Problem-Solution Pattern; and evaluation plays an important role in organisational functions in discourse such as Labelling (Francis 1994) and Relevance Markers (Hunston 1989, 1994).

So far the analysis in this study has been based on a bottom-up processing of the text - first examining lower level cases of evaluation, and then looking at how they work together in the overall discourse of the text - from clause, to proposition and to discourse. In this chapter, however, I pursue a top-down model of analysis. I begin by assuming that a text has an overall pattern determined by factors such as generic conventions, the way in which the research was carried out, the purpose of the text, as well as the individual writer's choices in presentation. I also make the assumption that the writer and the ideal reader are conceptually aware of this pattern - the reader brings to the text the knowledge of the type of text as well as expectations about the text, while the writer attempts to enhance the reader's comprehension by providing linguistic as well as contextual signals to help the reader process the meaning of the text. In short, in this chapter I assume the existence of a conceptual pattern in the text and then examine how this pattern is negotiated between the writer and the ideal reader in the discourse and organisational structure of the text.

For descriptive purposes, I distinguish between pattern and organisation. I use pattern, on the one hand, as an abstract term to refer to the conceptual framing of the

text which exists in the mind of both the writer and the reader (this is based on the awareness of genre and ideology of the text). Although ideally we expect the pattern to be reflected in the actual stages of development of the text, this might not always be the case, as will be seen in the application of Problem-Solution pattern to selected texts below. Organisation, on the other hand, refers to what appears in the text - the textual realization of the pattern.

Since the major concern is with text patterning and organisation, the analysis in this chapter involves samples of whole texts. This is important for our understanding of the movement and the cumulative development of evaluation as well as its function in the expression of a global purpose of a text. The analysis emphasises the role of evaluation in the overall framing of the text - what may be called macropatterns. However, it is also important to remember that these in isolation cannot sufficiently show how the internal networks of evaluation work in the build-up of such large scale framing; where necessary, the analysis of internal or local framing - micropatterns - will be carried out (compare with the interrelatedness of Scope and Harmony). The term 'frame' here is used in the general sense of "the communicative signals indicating how an utterance or action must be interpreted" (Besnier, 1992: 180). (For a detailed discussion on framing see, for example, Bateson, 1972; Goffman, 1974; Fine, 1985).

In order to achieve as fairly balanced a picture of the value system of the ARA as possible, it is necessary to look at representative samples from various disciplines as there is a possibility that each discipline might show characteristic differences in

terms of the kind of topics treated as well as ways of conducting research. For instance, a typical History text is basically a narrated reconstruction of the past whereas an experimental research article from Economics, for example, reports research carried out - the methods, the results - as well as comments on the degree of success of such a study. Although the major aim of the study is to look generally at how evaluation in a whole text works, one of the things that may come out of this investigation is an awareness of variations in terms of macropatterns. Although it is not the main aim of the study to focus on variations, it is worth looking at these in order to help explain the range of options open to the writer as well as to explore these variations in the development of the evaluative resources available in the genre as a whole.

It should be emphasised here that, unlike in Hunston's study (1989, 1994) where the data shows a common macropattern of evaluation across articles, in my study I am not expecting a single pattern to emerge. Unlike Hunston's data - experimental research articles in biochemistry - my data is not only multidisciplinary but also varies according to type (for example, experimental research, review and data interpretation articles).

## **6.2 The Problem-Solution Pattern as the Underlying Discourse Pattern of the ARA**

### **6.2.1 The ARA and the Problem-Solution Pattern**

I start from the premise that the typical pattern of the ARA can be broadly related to the Problem-Solution pattern identified by Hoey (1979, 1983), Jordan (1984) and Hoey and Winter (1986). According to Hoey (1979), a basic model of the Problem-

Solution text consists of four main elements with each element representing the answer to a question. A fifth element - Basis - is in a sense built into Evaluation and is therefore not entirely a separate element from Evaluation (see a detailed discussion of the relationship between Evaluation and Basis below).

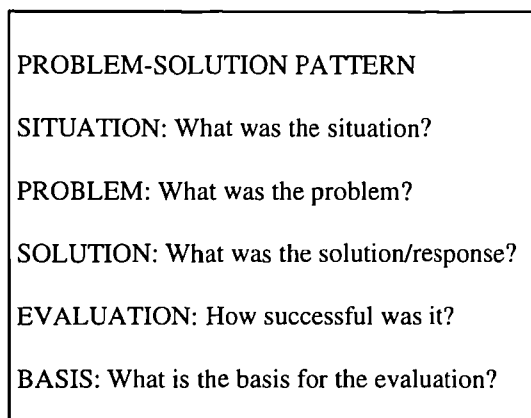


Figure 6.1: The Problem-Solution model (modified from Hoey, 1979)

I should make it clear from the start that for the purpose of my study I use the Problem-Solution model in an abstract sense as a useful way of looking at what an academic paper is trying to do. I assume that a research paper is born out of the realisation of what Swales (1981, 1990) calls a “Gap in the Knowledge” about a particular topic - what can be called a Problem - and that the aim of the research article is to “fill the Gap” (i.e. a Response or Solution). Most analyses of the Problem-Solution texts place much emphasis on textual signals of identification of the constituent elements of the pattern, and such identification is closely linked to clause relations (Winter, 1977; Hoey and Winter, 1986). Although I am using the Hoey-Winter model, I am not attempting to carry out a neat textual analysis by mapping the pattern onto specific elements of the text using clause relations. Rather, I am using Problem-Solution pattern as a conceptual framework of analysis which

will enable me to describe the overall movement of evaluation through text. However, where possible, I will use textual signals to illustrate some of the points raised in the study - this will be applied particularly to the short texts with which I will start my analysis. I am also not claiming that I will be able to use the Problem-solution pattern as a template for all the texts that I examine. However, if the model turns out to be applicable to one text but not to another it could be interpreted as an important pointer towards differences between such texts.

Before demonstrating the potential role of the model in the description of text patterning in the genre in question, it is best to try and relate more explicitly the Problem-Solution model to aspects of Swales' (1981, 1990) Move Analysis of research articles as well as suggesting relevant questions which such elements are trying to address. Figure 6.2 overleaf illustrates this.

On the basis of the questions and their corresponding answers proposed in Figure 6.2, it could be argued that the elements of the Problem-Solution pattern most relevant to the discourse patterning of the ARA are Problem, Response and Evaluation. Although Situation is a crucial element of the pattern, it is very often non-evaluative and as such does not have an important role in the overall evaluation of the text. However, in some cases the Situation element is expressed in an evaluative manner. A good example is the presentation of a 'problematic situation' - both establishing the field and simultaneously signalling a Problem (typically expressed by negative evaluation) - what Hoey terms "Situation as Problem" (Hoey, 1983: 83). In this case, the Situation is obviously important in the evaluative framing of the text.

PROBLEM-SOLUTION PATTERN	ARA RHETORICAL PATTERN AND CORRESPONDING QUESTIONS
SITUATION	Establishing the Field: What is the current state of knowledge about the topic?
PROBLEM	Indicating the Gap in the Knowledge: What is not known that needs knowing/what has not yet been done which needs doing about the topic?
RESPONSE	Filling the Gap in the knowledge: What is the present research doing to address/solve the current 'lack' of knowledge?
EVALUATION	How successful has the research (i.e. methods and/or findings) been in filling the Gap? i.e. What is the contribution of the research to the current knowledge about the topic?
BASIS	Justification of the research outcome: i.e. On what grounds are the evaluations based?

Figure 6.2: The application of Problem-Solution to the ARA rhetorical pattern.

The three obligatory elements - Problem, Response and Evaluation - are very important in the interpretation of the purpose of the text. Problem says that something has not been done or is not known, Response what is or should be done, while Evaluation is intended to persuade the reader to accept the writer's point of view on the adequacy of the Response. In the text, typically the Problem is attributed to either the reliability of the methods used to carry out research or the validity/reliability of the results (which clearly relates to the Process and Product distinction). The Response element describes the methods (i.e. data and methodology) or the conclusions (results); and Evaluation permeates both Problem and Response. For instance, the writer might evaluate Response by either expressing



satisfaction with the methods or results, or suggesting new/improved methods or new/improved interpretation of the findings. A good example of this phenomenon is that of Hoey (1986: 191) where Evaluation is realized by an identifiable separate element in the text:

ST6.1: (1) Charles was a language teacher. (2) His students came to him unable to write coherently. (3) He taught them discourse analysis. (4) Now they all write novels.

According to Hoey's model (1) is Situation, (2), Problem, (3) Response and (4) is Result/Evaluation. As we shall see, however, in my data, it is often difficult to identify separate elements in the text: for example, the way in which Response is expressed is frequently evaluative in itself. This is consistent with Hunston's (1989, 1994) point about evaluation not being always overtly expressed in ARAs, but diffused everywhere - anything which contributes to conventionally accepted goals (for example, establishment of 'truth', etc.) is good, even if this goodness is not stated explicitly.

In a Problem-Solution text, "so powerful is the expectation that a Problem-Solution pattern will end with a positive evaluation of a Response that if it is undermined in any way the effect is to discompose a reader quite markedly" (Hoey, 1983: 83). However, if the Response is given negative evaluation, that signals another Problem and the whole process starts all over again, usually until positive evaluation of the Response is provided to signal the end of the discourse. This is described as a multilayering phenomenon represented by the following recursive model by Hoey:

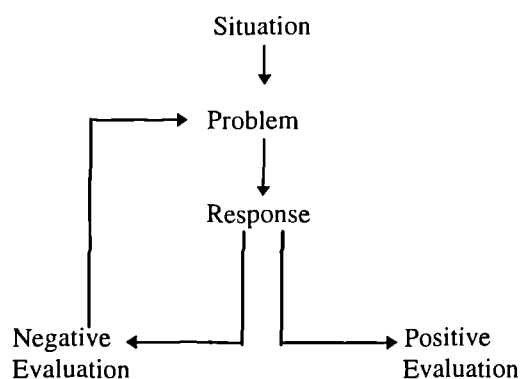


Figure 6.3: The recursive feature of Problem-Solution pattern (Hoey, 1983: 83)

This recursion occurs in the data that I have examined. However, it is not the only way in which Response develops in text. Another way is in what can be called Staged or Cumulative Response in which there is a detailed Response proceeding as a series of stages each of which is given positive evaluation. This latter type of Response will be illustrated in Section 6.3.1 below.

One aspect of the Problem-Solution pattern which has not been discussed so far is Basis. In Hoey's model Basis is at times regarded as an optional element of the pattern. For example, in his analysis of the 'Balloons and Air Cushion the Fall' text, Hoey argues that Evaluation may take one of the three forms: "Evaluation accompanied by Basis, Result accompanied by Evaluation, or combined Result/Evaluation optionally accompanied by Basis" (Hoey, 1983: 78). In the ARA, however, Basis appears to be central to the evaluative system of the text and therefore it is as obligatory as the other three elements.

In text, Basis can be expressed in two main ways. First, it can occur as a separate element from Evaluation (and this is a ‘normal’ pattern) as in the following example:

ST6.2: EC23

*This pattern of preferences* is **inconsistent** with expected utility theory because it implies that the subjective probabilities of black and of red are greater in the 50-50 urn than in the unknown urn, and therefore cannot sum to one for both urns.

Here **inconsistent** evaluates the EE *pattern* whereas the because-clause provides the grounds or justification (i.e. Basis) for Evaluation. In other cases, however, Basis can be expressed as a replacement for Evaluation (and this is a ‘marked’ pattern). In this case Basis is inherently evaluative, as demonstrated by the following example in which the writer is introducing the term Ablocutionary Value:

ST6.3: AL7

Fifthly, the term itself: I introduce it above as a possible way of saying something more informative than speech act theory at present allows about perlocutionary sequel (unintended perlocutionary effect) by taking the perspective of the reader/hearer to account for that person’s own understanding and actions.

In this example, the underlined part of the sentence gives a reason or justification for the introduction of the term (which is part of the writer’s Response) but since it indicates that the term is useful it is also evaluating this step of the Response. In this case Evaluation is expressed by providing Basis. This interrelatedness between Evaluation and Basis further buttresses Hunston’s (1989) concept of Goals. Thus in this case, the provision of Basis is good in that it indicates that the method helps towards the achievement of the set goal(s).

This above fusion between Evaluation and Basis can be explained by the phenomenon of multifunctionality. One of the main contributors to this phenomenon is that of the very nature of Evaluation. In the data I use, Evaluation seems to

permeate the other three elements - Problem, Response and Basis. While Problem is inherently associated with negative Evaluation, Response and Basis may be seen as inherently associated with positive Evaluation (or if it is to be interpreted as a recursion of Problem, with negative Evaluation).

Given that at the highest level the function of the ARA is to provide a Response to a research question (or Problem), it is not surprising that Response is often expressed evaluatively. In the text, there seem to be two options in expressing Response. First, it can be brought in as a separate element from Evaluation such as in the following example:

ST6.4: H4

Further, using information from party records and their own accounts, it was possible to determine the size of the population in 1925 both of the authors' birthplace and of their residence when they joined the party.

In this example the two can be separated thus:

it was possible	to determine the size of the population
Evaluation	Response

In other cases, however - and these are the majority in my data, it is not possible to separate Response from Evaluation since they can occur in the same clause or be simultaneously expressed by a single lexical item - and hence Evaluation and Response are fused. For example, Response might be expressed in the statement of the aim of the paper in terms such as 'find', 'explain', 'discuss'. A good example of evaluative Response is:

ST6.5: AL50

The purpose of this article is to **help** students and teachers (especially those in non-English-speaking countries) to better understand some of the problems and to recognize certain possible solutions.

While **help** announces Response, it simultaneously expresses positive Evaluation of that Response - if the research could **help** both students and teachers, then that is a worthwhile achievement.

The fusion between Evaluation and Basis, on the one hand, and that of Response and Evaluation, on the other, necessitates the reiteration of the concept of Goals in evaluation: Goals are either institutionalised (what desirable qualities are in the genre) and/or explicitly expressed by the writer of the text. As noted above, in ARAs, Evaluation is often expressed through a strong statement of Basis. For instance, instead of the writer telling the reader explicitly that a method is good, s/he gives the Basis for the choice of such a method such as in ‘as a possible way...’ above or what the method can do in terms of enabling research abilities such as in ‘it allows us to choose’; and thus Basis is in fact functioning as Evaluation. In terms of Response, it could be argued that words such as **explain**, **discuss** and **indicate** - which are often used in the statement of Response - are not in themselves evaluative, but since in the context of scientific investigation they are positive moves meant to establish the truth, they are therefore positively evaluative (see Hunston, 1989, for a detailed discussion on Goals).

In order to handle the overlap of functions described above, I see Response as realized potentially by any one or more of three elements: Response Proper, Evaluation and Basis - where Response Proper refers to the factual signalling of a research event. For instance in the following example from an economics text (EC7): ‘we focus on three central issues that seem particularly unclear’, ‘focus’ is Response

Proper. The diagram below illustrates the typical arrangement of the Problem-Solution pattern in the ARA.

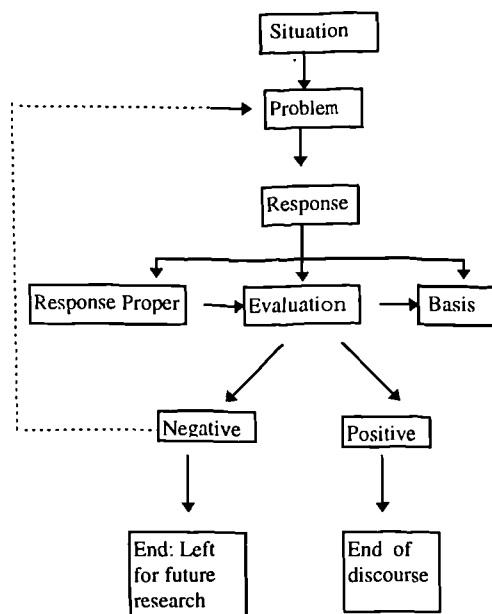


Figure 6.4: The typical organisation of various elements of the Problem-Solution pattern in ARAs.

The dotted line from negative Response back to Problem in the above diagram reflects Hoey's (1983) argument that the evaluation of Response can also be negative and that "whenever a Response is negatively Evaluated, another Problem is normally signalled, except where Negative Evaluation does not allow for any further Response such as in the following, 'This killed him' (Hoey, 1983: 83). In ARAs, however, the pattern may end with less extreme cases of negative evaluation. In this genre, it is conventionally appropriate to present the article as not giving all the necessary answers to a problem and this may be signalled by negative evaluation at the end of the text. The following example illustrates this:

#### ST6.6: PSY1

**Lack of data leaves undecided** the crucial question whether or not age changes in rates of learning of cognitive skills are independent of age changes in the maximum attainable ceiling performance. Without this information *we cannot address* the practical question as to how far cognitive decline in old age represents the effects of disuse of systems which can, perhaps, be rehabilitated with practice, and how far it represents an irremediable change in functional capacity. Until this is resolved *our theoretical models will also remain*

**inadequate** because *we do not know* whether changes in learning and memory and changes in maximum rates of information processing represent changes in functionally and logically 'modular' systems which may age at different speeds....

In this text, there is explicit negative evaluation that comes at the end of the discourse which indicates the need for further research. In some texts, this is not so explicit - the negative evaluation of the Response at the end of the text may be signalled by raising questions such as in the following text:

ST6.7: H4

A related observation, and hence a fourth conclusion, is that in a Gau where the largest number of males whose occupation is known were either a Bauer or a Landwirt (that is, 'farmer')... not a single farmer's wife joined up before 1928. Would it be wrong to assume that the farmer's wife was the most traditional woman? And if 'prostitution, rape, abortion, orgies, venereal diseases, and pornography epitomized traditional women's worst terrors', and if those terrors were characteristic of the liberation of the Weimar Republic brought, should we not expect rural women to have joined up? But they did not. Urban women did. Does that mean that urban women were in fact more liberated to begin with, hence more likely to know what the terrors of liberation were? Not one of them mentions these fears at all, so we cannot confidently conclude that the women were traditional in terms of 'worst terrors'.

The two examples above indicate that, although ideally we expect positive evaluation of Response, it would appear that, conventionally, the research article will often not claim complete knowledge but leave the field open for further research. Therefore negative evaluation at the end of the discourse signals this need for further research.

### 6.2.1 Application of the Problem-Solution Pattern to Short Texts

In order to show the potential role of the Problem-Solution pattern in the description of ARA structure and patterning, I demonstrate this analysis on short samples of texts which in some senses are complete in themselves - abstracts and introductions. The selection of these texts is based on the fact that they resemble miniature papers by virtue of being summaries of whole papers; and very often their pattern and/or

organisation can be mapped onto the papers they summarise. Here I examine three abstracts from Applied Linguistics, Economics and Psychology and one introduction from a History article.

I use ST6.8 as the first example for this analysis because the main steps of the Problem-Solution model are easy to recover from the text.

ST6.8: AL4 Taking explanation seriously; Let a couple of flowers bloom

s0. (1) It is usually thought that one goal of a theory is to explain the phenomena within the theory's domain. (2) Hence one criterion for assessing a putative theory of second language acquisition (SLA), for instance, or of assessing SLA research conducted within a given theoretical perspective, is the degree to which it can be seen as a successful contribution to such an explanation.

(3) Unfortunately, a good deal of SLA research has been less than thorough-going in its commitment to explanatory goals, making it harder to judge the value of the research in question. (4) This paper discusses some of the issues and problems involved in scientific explanation in general, and their relevance to SLA theory in particular. (5) The relation between SLA and the property theory/transition theory distinction (Cummins 1983) is examined, the inadequacies of the deductive-nomological model (Hempel 1965) are detailed, and an approach is outlined towards using Lipton's (1991) account of inference to best explanation as a guide to evaluating SLA theoretical frameworks.

At the highest level, the Problem lies with the efficiency of many SLA theories used in the explanation of Second Language Acquisition; and the Response is to give suggestions on how this can be remedied. The text consists of Situation (s0.1 - 0.2), Problem (s0.3) and Response (s0.4 -0.5). Although the Situation section is not overtly evaluative, it prepares the ground for the problem to come. For instance, the opening it-clause introduces the subsequent reported proposition as a 'thought' which implies a lack of firm scientific basis for such a proposition. The proposition in the that-clause is attributed to a non-specified source through the reporting it-clause, which detaches the writer from the proposition and thus predicts evaluation to come.



This is different from saying, for example, ‘One goal of a theory is to explain the phenomena’, in which case the proposition would have been categorical, committing the writer to the validity of the proposition. In s0.2, which is a continuation of Situation, the cohesive link ‘hence’ indicates a cause- consequence relationship between s0.1 and s0.2, with the latter being a consequence of the former.

It is in s0.3 that the Problem is introduced through the disjunct **unfortunately** which announces negative evaluation to come in the subsequent clause. The negative evaluation which is the basis of the writer’s negative feeling is that much of SLA research has been **‘less than thorough-going** , the result of that being to make it **harder** *to judge the value of the research in question*. The entities ‘research’ and ‘to judge’, suggest that the article is process rather than product oriented. Thus the writer’s focus is to validate methods rather than conclusions or findings.

Sentences s0.4 and s0.5 introduce the present research - the Response. The main element in both sentences is Response Proper expressed in activity verbs such as ‘discuss’, ‘examined’, ‘detailed’ and ‘outlined’. It is only in the last clause of the sentence that there is an indication of Basis - ‘using ...as a **guide** *to evaluating SLA theoretical frameworks*.’ It should be noted that Evaluation here is not explicitly expressed in a separate lexical term but is expressed by a strong Basis - if the approach can be used as a guide, it is by implication a good approach - and hence the two elements are merged. The pattern in this text is illustrated overleaf.

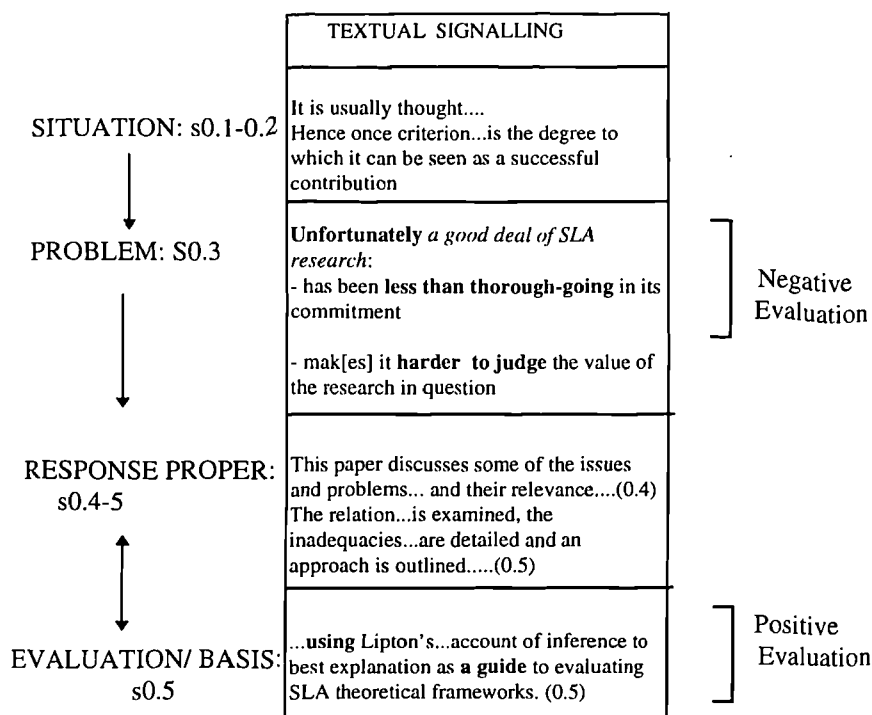


Figure 6.5: A sequential relationship among elements of the Problem-Solution pattern in text

While in the above text it seems relatively easy to identify all the elements of the Problem-Solution pattern, with negative evaluation for Problem and positive evaluation for Response, in some abstracts some elements are missing. This not only makes the point of the research harder to identify, but may also make it difficult to map the abstract onto the texts they summarise. An example of one such abstract comes from a Psychology text.

#### ST6.9: PSY25 Cognitive Psychology and Medical Diagnosis

s0. (1) The nature and acquisition of complex cognitive skills have been intensively investigated over the past 20 years. (2) From such studies in non-medical domains it appears that experts (a) generally remember new information in their field better than do the less expert; (b) work forward to solutions, (c) form superior representations of problems; (d) are superior in knowledge, not in basic processing abilities; and (e) require extensive practice over a period of years to achieve expert status. (3) Studies of expertise in medical diagnosis have found two major departures from the typical findings in other areas of expertise, *viz.* that memory for new information seems best at intermediate levels of skill rather than at high levels, and that a mixture of forward and backward reasoning (hypothetico-deductive

inference) is common at all levels of skill in medical diagnosis. (4) These departures from findings in other domains are explained by the special characteristics of both medical knowledge and the diagnostic task.

The Problem involved here is that of a conflict between research in understanding 'the nature and acquisition of complex skills' in medical and non-medical contexts .

In this abstract, however, only two elements of the Pattern are explicitly stated - Situation (s0.1 - 0.3) and Response (s0.4). In s0.1, the Situation is positively evaluated through **intensively investigated**. What is interesting in this text is the absence of an explicit Problem element. However, the fact there are 'two major departures from the typical findings in other areas of expertise' and that the Response indicates the need to 'explain' these 'departures' between medical and non-medical contexts implies that there is a Problem. The Response **explained** here carries the Response Proper and also, because in science explanation is a desirable value, it is at the same time a positive evaluation of the Response. There is no indication of Basis.

It is worth noting that while the absence of Problem and Basis makes it harder to identify the purpose of the research from the abstract, in the paper itself the picture is different. There are many other signals to indicate the purpose of the text even in the absence of explicitly stated Problem. Let us take the first paragraph of the introduction and the first paragraph of the conclusion (Paragraphs 1 and 29 below):

s1.(1) Medical diagnosis is an important real-life activity in which the level of performance can mean the difference between life and death. (2) Not surprisingly perhaps, skill in diagnosis has often been regarded as something of an unanalysable mystery by both lay people and medical professionals. (3) However, recent years have seen considerable attempts to use cognitive-psychological methodologies and concepts to uncover the nature of diagnostic expertise and its acquisition. (4) These efforts, which have been inspired by the general success of psychological analysis of expertise in a number of domains, are reviewed in this paper and likely directions of future research are outlined.

s29.(1) Compared to other areas of expertise which have been subject to cognitive-psychological investigation, medical diagnosis is a relatively complex domain in which many different types of knowledge are involved and in which the problems are not very well defined. (2) However, the expertise research maxims outlined in the Introduction hold up well in the medical domain.(3) Two apparent discrepancies were: (a) that medical experts do not always remember better and (b) that medical experts do not show a strong forward direction of working. (4) These discrepancies were instructive and have been plausibly explained.

The introduction is in many ways similar to the abstract in that it basically states the Situation without establishing an explicit Problem. However, the Problem is implied in s1.2 by the expression 'regarded as an **unanalysable mystery**.

The conclusion has more explicit expression of the Problem-Solution elements than either the abstract or the introduction. A good example is that of a clear statement of the Problem - the lack of consensus mentioned in the abstract as a 'departure', is here explicitly described as a **discrepancy** in s29.3. Thus while Problem is 'missing' in the abstract, it is present in the conclusion, possibly as a reminder of what the paper has tried to respond to. It is also important to note that **explained** in the abstract (s0.4) is repeated in the conclusion (s29.4) in the same role as Response/Evaluation.

The next abstract from an Economics article is much shorter - only two sentences long - and works slightly differently from the two above.

ST6.10: EC25 How do we know that real wages are too high?

s0.(1) It is a common belief that the existence of involuntary unemployment implies that wages are too high and that wage moderation should be encouraged as a way to keep unemployment down. (2) This paper argues for a reconsideration of this view by showing that it is possible for a binding minimum wage to reduce unemployment or increase employment even if there is involuntary unemployment.

The Problem here is product-related in that it is a 'view' or according to the paper a 'common belief'. The suggestion is that the view needs reconsidering (i.e. it is wrong) and therefore the Response is to 'show' the possibility of an alternative view. First, the Situation set up by s0.1 implies that there is a Problem even though it is not very explicitly stated. It is implied in the prospective label **common belief** which is set up by the fronted it-clause to introduce the main proposition in the that-clause. Labelling something as a **common belief** suggests that it has no verifiable basis and is negatively evaluated in that sense. This suggestion is supported in hindsight by s0.2 which sets up the Response by arguing for a **reconsideration** of the view in s0.1. The fact that there is a call for a reconsideration suggests a knowledge gap which the reconsideration is meant to address. In the same sentence the Response is detailed by the reporting verb **showing** which is also evaluative. The reported clause '*it is possible...to reduce unemployment...*' is the Basis for the Evaluation (see Figure 6.6 overleaf).

In the above text we have identified elements of the Problem-Solution model as well as variations in terms of their distribution. The variations indicate an element of individual writer's choice as well as constraints from factors such as the accepted conventions in the field, the purpose of the paper, for example, experimental versus review of available literature.

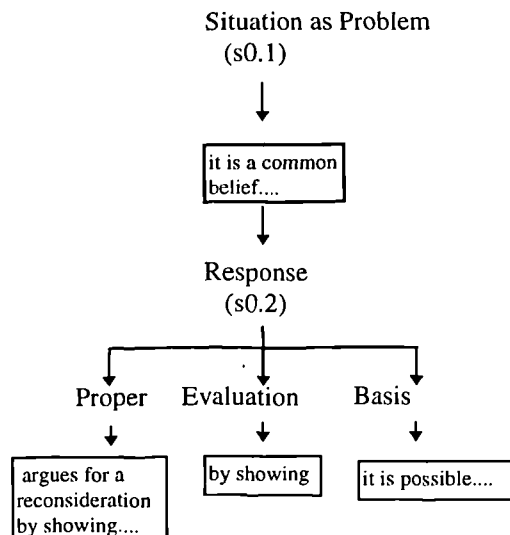


Figure 6.6: The application of a three- part Response to text.

Although all the three texts above have shown simple transitions between different elements of the model, the picture changes when longer texts are involved. Here Hoey's multilayering phenomenon in explaining the pattern of long Problem-Solution texts becomes important. To illustrate this, I use a slightly longer text, an introduction section of a History text (see Appendix 2C for a complete unanalysed text).

ST6.11: H34 Ballads, libels, and popular ridicule in Jacobean England

s1. (1) Very little is known about what it is like to live on the margins of literacy in early modern England.(2) By far the majority of people in this society were illiterate in some sense. (3a) Their inability to write has left the historian with few traces of their thoughts and feelings and, (3b) although they were more likely to possess reading skills, it is very difficult to assess the circulation or reception of most commonly known texts, either in manuscript or print. (4) Much of the rich fabric of this partially literate and quasi-oral culture is irretrievably lost.

s2.(1) In recent years a number of attempts have been made to penetrate the mental world of ordinary men and women in sixteenth- and seventeenth-century England through the medium of contemporary "popular literature".(2) Sufficient numbers of prints and pamphlets, newsbooks and almanacs, broadside ballads and chapbooks are extant to invite such investigation. (3) By paying attention to the price and print runs as well as to the form and content of this material, inferences have been made about the markets to which it was

directed and conclusions drawn about the milieu in which it circulated. (4) A humble audience has been assumed and a “popular” culture imagined.

s3.(1) But such deductions are highly speculative. (2) Due to the paucity of evidence, it is scarcely possible to contextualize any piece of this literature and to place it in the hand of an actual recipient in a given time and place, much less to recapture the way in which it might have been read or read, internalized and appropriated. (3a) Other than limited information about a few hack writers, almost nothing is known about who created these texts; (b) other than scattered glimpses of hawkers and chapmen, very little can be ascertained concerning the scale and extent of their distribution; (c) other than the existence of a few celebrated gentlemanly collectors, it is impossible to say precisely who read them and why. (4) In short, we have the texts but not the contexts.

s4.(1) Thus important questions about cheap print remain unanswered, and perhaps unanswerable. (2) Did broadsides and chapbooks regularly penetrate the lowest levels of rural society, or were they fundamentally destined for urban environments, for the gentry or the literate middling sorts? (3) To what extent were they didactic, instructing and moralizing, fashioning the outlook and conditioning the responses of the recipients; in what senses were they reflective, mirroring the cultural norms and illustrating the sensibilities, beliefs and aspirations of their audiences? (4) Can they justly be taken to represent the enshrining in text of an oral currency from village communities, or are they evidence merely of the transmutation and popularization of more literate and learned traditions? (5) It is uncertain, therefore, if and how print was consumed by the majority of English men and women in this period. (6) But what is certain is that it was in no way produced by them, other than in the sense that all consumption is a form of reproduction. (7) Studies of ephemeral literature largely fail in allowing us to see the common people as creators of their own cultural repertoire, as the authors of their own identities or the architects of their own experience.

s5.(1) There are, however, ways in which to recognize those at the lowest levels of society as more active agents in the construction of their forms of expression and to get closer to a more demonstrably plebeian genre in story and song. (2) For it is possible to penetrate beneath the level of print and recover something of the extempore rhymes, verses and ballads which ordinary men and women frequently composed for themselves and sang or recited among their neighbours. (3) Such things were occasionally preserved amid legal records when they had as their subject an individual who believed the composition to be personally libellous and who, in taking the case before the courts, was required to produce a copy of it in evidence. (4) In the ostensibly unpromising source of proceedings at law, therefore, can be found a “literature” explicitly by the people and for the people, dynamic and contextualized. (5) Unlike in commercial productions, it is clear who invented or wrote those songs, and the circumstances surrounding their creation are explicit. (6) It is possible to know exactly where they were circulated and how they were disseminated among a largely illiterate audience. (7) Born of identifiable situations and less bound by conventional tropes than was much cheap print, they offer perhaps a more vivid and responsive insight into popular attitudes and values, and one which can be positively tested against the responses and reactions which they evoked. (8) Through such sources we can relocate the usually silent majority as producers and initiators in the cultural process and gain an immediacy of access to popular mentalities which it is rare to find.

This text is process-oriented in approach since it focuses on validating methods of research. In the text, the Problem seems to lie with lack of knowledge about what the writer calls the 'partially literate and quasi-oral culture' of ordinary people in Jacobean England. Although at the beginning of this text the Problem is expressed in product terms in the sense that it is Certainty-related, as the text develops it becomes obvious that the paper itself is process-oriented, as will be demonstrated below.

First of all, it is worth noting that the organisation of the text into paragraphs seems to coincide with the various elements of the Problem-Solution pattern, with each paragraph expressing a different element. The first paragraph expresses a problematic situation signalled by the evaluation of Certainty in the opening sentence - 'very little is known'. In the rest of the paragraph (s1.2 - 1.4 inclusive) there is a development of the Problem with evaluation of Certainty in s1.3a signalled in '...has left the historian with very few traces...' and that of Control in 1.3b signalled in 'it is very difficult to assess'.

The semantic function of Paragraph 2 is that of attributed Response which is process-oriented, i.e. what has been done so far, for example, '*attempts* have been made *to penetrate...*' (s2.1), 'inferences have been made'(s2.3) and 'a "popular" culture has been assumed' (s2.4). The Response is in itself non-evaluative, but the fact that it is attributed rather than averred predicts evaluation .

Paragraph 3 presents Evaluation of the methods discussed in paragraph 2. Here there is another combination of Certainty and Control parameters which is clearly signalled



by the cause-consequence relationship, ‘due to the **paucity** of *evidence*, it is **scarcely possible to contextualize...**’. The Basis of the evaluation is given in the contrastive relationship in s3.4 - ‘we have the texts but not the context’. The negative evaluation of methods here signals a recursive Problem.

The pole of value in Paragraph 3 is carried over into Paragraph 4, where there is a restatement of the Problem. For instance, saying that questions remain unanswered picks up ‘very little is known’ (s1.1) and a **paucity** of evidence as well as most of the negative evaluation in Paragraph 3.

The Response comes in Paragraph 5, the longest paragraph of the introduction. While in Paragraph 2 researchers are said to have used ‘popular literature’, the suggestion here is that the most reliable data is that of rhymes, verses and ballads which were composed by the people for their own consumption as well as that for their neighbours - ‘literature explicitly by the people for the people’. This process is evaluated in positive terms such as ‘there are ways to recognize’, ‘it is possible to penetrate...’, in s5.1 and s5.2, respectively. The implication is that improving the methods of research will result in better results.

Irrespective of the pole of value, the dominant evaluations here are those of both Certainty and Control: lack of control over methods (Process) results in lack of certainty (Product). The main function of product-oriented evaluation here is to bring to our attention the problems with Process. (This interrelationship between Process and Product will be discussed in Section 6.3 below). Despite the text moving back

and forth in terms of restatement of Problem because of the negative evaluation of the first Response, the end result is that of positive evaluation of Response which brings this part of the discourse to an end, thereby corresponding to Hoey's recursive model shown in Figure 6.3 above.

While I have suggested that the majority of articles used in my study (about 182 out of 200) follow a broadly Problem-Solution model, it should be noted that there are other articles whose patterns are not necessarily Problem-Solution. The most notable among these are 26 History articles and a few others from the other three disciplines, more specifically State of the Art articles. A sample History article will be briefly discussed in Section 6.4 below to exemplify this variation.

### **6.3 Process-Product Distinction Analysis of Whole Texts**

In the analysis of the texts above, it has been argued that some texts are process-oriented whereas others are product-oriented. The writer who chooses the process-oriented approach is primarily focusing on validating methods while the one who chooses the product-oriented option is primarily focusing on validating conclusions. It should be noted that these are idealised models whose function is mainly to provide a useful basis for describing the differences between the two types of articles. In many of the texts, however, the two are combined: that is, good methods lead to good conclusions, and/or good conclusions validate the methods used to reach them. As has already been established in Chapter 4 above, the distinction between process and product-oriented evaluation is based on the evaluated entity (EE) which in turn determines the type of Ascribed Value (AV). To determine whether the text is

process or product-oriented, therefore, there is a need to establish the main EE of the text. The identification of the main EE of a paper is typically realized in the text in key statements of Problem and/or Response; and where these are not explicitly signalled as being key, the surrounding discourse context is a good indicator of which statements are key.

The following extracts are examples of key statements which illustrate the process-product distinction:

ST6.12: H4

...but because *it is no longer possible to poll these enthusiasts*, we are left with **but a few ways of finding out why** they seem in retrospect to have opposed their emancipation from traditional patriarchal society and the inferior position to which they were assigned to it.

In this example, the main EE is introduced by **no longer possible** which evaluates process-oriented EEs such as *to poll* and of *finding out*. This happens in the statement of Problem. In the following example, however, it is expressed in the Response:

ST6.13: H20

The aim of this article is to **review** recent Russian and western literature on the terror in the Comintern, to **examine** old and new explanations of its origin and scope, and to **indicate** future lines of research.

In this example, the Response is expressed in activity terms by the reporting verbs **review**, **examine** and **indicate**, and the paper's main focus is to look at competing opinions/findings arising from the literature on the Comintern. This suggests a product orientation.

It should be emphasised that the difference between process and product-oriented texts is primarily a semantic matter, in that it is used to establish the main purpose of the paper and the types of EEs and AVs which will appear; it does not necessarily suggest that the broader textual organisation of the two types will be affected by these differences.

### 6.3.1 Product + Staged /Cumulative Response

ST 6.14: EC22 Economic Growth and the Environment (see Appendix 2B for a complete text)

#### 6.3.1.1 Macropatterning

This is an Economics experimental research article. It investigates the claim by environmental groups that continued economic growth results in greater harm to the earth's environment. In their research, the writers (co-authors) adopt what they call the reduced-form approach to examine the relationship between per capita income and various environmental indicators. The main finding of the paper is that there is no evidence to support the claim that economic growth necessarily results in the deterioration of environmental quality.

The three opening sentences of the text express Problem:

s1.(1) Will economic growth bring ever greater harm to the earth's environment? (2) Or do increases in income and wealth sow the seeds for the amelioration of ecological problems? (3) *The answers to these questions are critical* for the design of appropriate development strategies for lesser developed countries

The questions raised in s1.1 - 1.2 imply that the Problem is that of lack of knowledge about the topic; there is therefore a need for answers to provide the necessary knowledge as expressed by s1.3 where the *answers* are evaluated as **critical**. Taking

the three sentences together, the findings (filling the knowledge gap) are presented as more important than the methods, and hence the paper is product-oriented.

Despite this being a product-oriented text, Response is initially expressed as a process. A statement of the aim/goals (s4.1) and the Attributed Response (s7.1-7.2) illustrate this point.

s4.(1) The **main contribution** of *the present paper* is that *it employs reliable data* and a common methodology to **investigate** the relationship between the scale of economic activity and environmental quality for a broad set of environmental indicators.

s7.(1) **Unfortunately, a paucity of data limits** the scope of any such study. (2) **Only** in recent years **have the various aspects of environmental quality been carefully assessed and only a small number of indicators have been comparably measured** in a variety of countries at different stages of development.

Although in s4.1 the process *to investigate* is presented as the **main contribution** of the paper, and the Attributed Response in s7.2 is presented in process terms - **carefully assessed and comparably measured** - the major focus of the paper is on product. The main conclusion explicitly expresses this major focus:

s41.(1) Contrary to the alarmist cries of some environmental groups, we find **no evidence that economic growth does unavoidable harm to the natural habitat**.

The evaluation **no evidence** is related to results - product - and not methods. The *function of the process can therefore be seen to validate the product*. This is expressed by the statement of Basis which justifies the methods used for the study:

s40.(1) While admittedly these measures cover relatively few dimensions of environmental quality, *our study is the most comprehensible possible* given the limited availability of comparable data from different countries.

The above statement of Basis implies that the findings of the paper should be accepted as valid and reliable because they are a result of good methods.

The main purpose of the paper can also be established by devising a question-answer technique based on the concerns of the four elements of the Problem-Solution pattern below:

What is the Problem?: The need for an answer to whether economic growth damages the environment.

What is the Response?: To investigate the truth of the claim above  
How is this done?: Use reliable data for this investigation

What is the Conclusion/Evaluation?: The claim is not true (i.e. there is no evidence to support the claim)

What is the Basis for this conclusion?: The methods we have used to reach this conclusion are the best available.

To examine how the text is organised in terms of evaluation, the Response section (the longest in the paper) is used. First, the data section (paragraphs 6 to 17) functions as an opening to the Response section. Here the writers (co-authors) introduce the data as well as evaluate them. The Global Environmental Monitoring System (GEMS) project on Air and Water quality is presented as the basic data used for the study. The data is presented, its strengths and limitations are shown, and its use in the study is justified. Two stretches of text - Paragraphs 7 and 17 - are used to show the development of evaluation at this stage of the text.

s7.(1) **Unfortunately, a paucity of data limits the scope of any such study.** (2) **Only** in recent years **have the various aspects of environmental quality been carefully assessed** and **only a small number of indicators have been comparatively measured** in a variety of countries at different stages of development. (3) *Comparability and reliability* are the **central aims** of the **effort** spearheaded by GEMS, a joint project of the World Health organization and the United Nations Environmental Programme. (4) For almost two decades *GEMS* has **monitored** air and water quality in a cross section of countries. (5) *These panel data* provide the **basis** for our research.

It is important to note that Paragraph 7 above is a response to s6.6 which emphasises the importance of a **comprehensive** study of environment and growth. Paragraph 7 therefore starts by expressing Problem in relation to availability of data signalled through negative evaluations **unfortunately**, **paucity** and **limits**. Although in Attributed Response (s7.2), there seems to be positive evaluation such as **carefully assessed**, this occurs within negative framing such as **only** and ‘a **small number of indicators** have been **comparably measured**’. In s7.3 the data used for present research is introduced in positive terms as having **comparability** and **centrality** as its central aims. This positive view is further strengthened by reference in s7.4 to ‘almost two decades’ of ‘monitoring’ air and water quality by GEMS. The reliability of the data used in the research is summarised in s7.5. In short, Paragraph 7 appears to be furthering the aim stated in s4.1- making a case for the reliability of data is used for the investigation.

However, after this paragraph, the section continues by evaluating the data and the summary of the evaluation occurs in Paragraph 17.

s17.(1) As we have noted, *the GEMS data do not cover all dimensions of environmental quality*. (2) Besides the air pollutants that affect global atmospheric conditions, **important omissions** include industrial waste, soil degradation, deforestation, and loss of biodiversity. (3) While we view our **inability to examine the effects of growth on these forms of environmental damage** as **unfortunate**, we **believe that there is much to be learned from studying how the many indicators of air and water quality respond to changes in output levels**.

In s17.1, there is an admission that the data used is not without loopholes , for example, **does not cover**. This is followed in s17.2 by **important omissions**. Sentence s17.3 introduces two conflicting evaluations through a hypotactic

concessive relationship between two clauses. In the fronted clause which is introduced by 'while', the evaluation is negative - **inability to examine** which is evaluated further as **unfortunate**. The major clause, however expresses positive evaluation introduced through the subjective 'we believe' - there is **much to be learned**. As the second clause is the main one, the positive evaluation in it has dominance over the negative one in the dependent clause. The pattern in this section of the text can be seen as concessive in that despite the negative evaluation of the data, it is still regarded as useful for research.

Central to the Response element is the methodology section which is predominantly process-oriented. Unlike some Problem-Solution texts where the negative evaluation of Response signals a step to a further Problem (see, for example, the analysis of ST6.16 below), here Response unfolds not only as one but as a series of Responses in which the typical development is for one Response to be presented, positively evaluated (with Basis), before another Response is presented, and the process is repeated. The Staged/Cumulative pattern is illustrated by Figure 6.7 below:

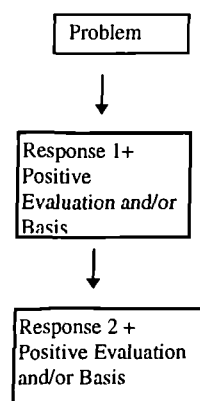


Figure 6.7: Staged/Cumulative Response pattern



The above pattern is exemplified in the paper by the following pairs of evaluative stretches in which the first member of the pair (P1) expresses Response Proper while the second (P2) carries positive Evaluation and/or Basis.

P1: s18.(1) To study the relationship between pollution and growth, we estimate several reduced-form equations that relate to the level of pollution....

P2: s18.(3) We think there are two main advantages to a reduced-form approach.

P1: s21.(2) Although our measures of pollution pertain to specific cities or sites on rivers, GDP is measured at country level.

P2: s21.(3) Since environmental standards are often set at a national level, using a country-level GDP per capita (as opposed to local income) is arguably appropriate.

P1: s21.(5) We have included a cubic of the average GDP per capita in the preceding three years to proxy the effect of “permanent income” and because past income is likely to be a relevant determinant of current environmental standards.

P2: s21.(6) As a practical matter, however, lagged and current GDP per capita are highly correlated, so including just current (or just lagged) GDP per capita does not qualitatively change the results.

P1: s22.(1) In estimating the relationship between pollution and national income, we adjusted for the year in which the measurement was taken by including a linear time trend as a separate regressor.

P2: s22.(2) We did so because we did not want to attribute to national income growth any improvements in local environmental quality that might actually be due to global advances....

P1: s23.(1) We included additional covariates besides income and time to describe characteristics of the site where the monitoring stations were located and to describe the specific method of monitoring.

P2: s23.(3) However, by including these additional variables, we are able to reduce the residual variance in the relationship between pollution and income and thus generate more precise estimates.

P1: s24.(1) We used a more limited set of covariates for the water pollutants because the data set provided less information about the placement of the monitoring station. (2) In addition to the GDP per capita terms and the time trend, we included the mean annual water temperature in the river in which the monitoring station is located.

P2: s24.(3) This is a pertinent variable because, for many pollutants, the rate of dissolution depends on the temperature of the water.

The Staged-Response pattern in the methodology section implies the existence of embedded patterns - minipatterns - within the major pattern of a text which seem to be based on the function and purpose of the individual stages of the text.

### 6.3.1.2 A Three-Dimensional Analysis

Having looked at both the patterning and organisation of the text, it is worth exploring how the different dimensions of evaluation are realized in the text and how this three-dimensional analysis fits into the overall text patterning and organisation.

Chapter 3 above has already demonstrated the importance of the two variables - Source and Message - in the analysis of writer responsibility in this paper. First, in terms of Source, generally speaking there are more averred evaluations than attributed ones, particularly in the first half of the text. For instance, in Sections II and III (data presentation and methodology - Paragraphs 6 to 25), most of the evaluation is averred. The categorical assertion in s7.1, 'Unfortunately, a paucity of data limits the scope of any such study' is a good example of averred evaluation.

However, there are two important sources of evaluation in this text: the 'I Self-Attribution' and 'My text Self-Attribution' (see Chapter 3 on averral and attribution). Starting with the 'I Self-Attribution', this is realized by 'we' reference (reference to the co-authors of the paper). The 'we' as Source should be distinguished from the 'we' as Actor which pervades the text but has no direct relevance to evaluation. An example of the latter use of 'we' is: 'We have estimated equation (1) for each of the pollutants described in Section II' (s26.1). This use occurs where the author describes research activities involved in the research for the paper - what Hunston (1989) calls 'narration of events'. The former kind of 'we' reference is that where 'we' is the originator of the evaluation and/or plays other important evaluative functions in the text. In the article, this occurs where 'we' functions as Senser, Sayer or Carrier in the

clause (see Halliday, 1967 1985a, on participant roles in transitivity). Examples of this phenomenon are:

s7.(3) While *we* **view** our inability to examine the effects of growth on these forms of environmental damage as unfortunate, *we* **believe** that *there is much to be learned from studying how the many indicators of air and water quality respond to changes in output levels.*

s18.(3) *We* **think** *there are two main advantages to a reduced-form approach.*

s18.(8) Nevertheless, *we* **think** that *documenting the reduced-form relationship between pollution and income is an important first step.*

S37.(3) *We* **suspect** that *the eventual improvement reflects, in part, an increased demand for (and supply of) environmental protection at higher levels of national income.*

The above sentences appear in the data and methodology sections of the text at points where the writers are evaluating the reliability of methods (data and approach). In these examples, the self-reference is expressed by reporting clauses which include perception verbs such as **believe, think and suspect.**

The use of 'we' as Source has important implications for the overall comprehension of this text. It is interesting to look at where it occurs and its function in relation to the proposition that is related to 'we'. First, all the above examples occur in the data and methodology sections, particularly where the writers try and justify their choice and use of either data (the GEMS data) or methodology (the reduced-form approach). Taking into consideration that here the writers are aware of the need to convince the reader of the validity and reliability of the methods, the 'we' reference can be seen to have two functions. First, as a form of hedging, it can be seen to exercise caution by indicating the subjectivity of the proposition. Second - and this is the most important - it implies the writers' explicit awareness of opinion in a controversial area. Thus the writers are aware that they are dealing with either data or an approach which other

people might not agree with. This is different from simple caution which can be expressed by the following rewritten version of s18.3: 'There may be two main advantages to a reduced-form approach'. In this version, the proposition is not attributed to the writers but it is modalised through 'may' which comments on the degree of certainty of the proposition. The proposition is an objective modalised statement whose function is that of expressing caution without subjectivity - this can be related to Halliday's explicit objective modality (see Chapter 3 for a discussion on the different effects of self-reference and modality on the writer's responsibility for a proposition).

Another important phenomenon is that of the 'we + perception verb' which occurs in the interpretation and/or evaluation of results, such as 'we find little evidence' (s37.1) and 'we see' (s32.1). In the same way as has been argued above, this personalisation of findings implies that the writers are aware of the possibility of alternative interpretations of the findings and therefore claim primary responsibility for the evaluation in a way which restricts the liability to the authors of the text themselves. The same argument can also be said for cases in which 'we' functions as Possessor of methods and findings.

s42.(1) *Our findings* are **broadly consistent** with those reported in other studies.

s43.(4) *Our methodology* **does not allow** us to reject these hypotheses....

This explicit self-claim to *findings* and *methods* is a further indication that the primary responsibility for both entities lies with the present writers themselves.

The second source, 'My Text Self-Attribution', occurs predominantly in the Results section of the text. Examples of this kind of attribution are:

s26.(3) *The tables in these appendixes* also **show** the p-values for the three current income variables....

s27.(9) *The relative slopes of the curves* therefore **reveal** the relative sensitivity of the different pollutants to changes in income.

s28.(3) *The mean residuals* **suggest** that, in most cases, the assumed cubic functional form does not do injustice to the shape of the observed relationship between pollution and GDP.

The textual sources accompanied by reporting verbs are given the responsibility for the evaluation in the reported clause. As has been argued in Chapter 5, attributing evaluation to textual sources implies a depersonalisation of findings which appears to be a conventional strategy in the ARA - the writer delegates responsibility to the text as an attempt to show the objective status of the findings. The fact that the textual sources such as the *table*, *estimates* and *results* are evaluated through reporting verbs such as **show** and **suggest** implies that it is the research itself and not the writer as a person who is primarily responsible for the findings/conclusions.

The second important variable in the analysis of responsibility is that of the status of the message - whether it is categorical or modified. In this text, the modification of Certainty plays an important role especially in averred statements of evaluation. Here examples from the Results section of the text are used for analysis (the modification is underlined for emphasis):

s26.(6) It appears therefore that national income is an important determinant of local air and water pollution.

s28.(4) We also see from the graphs that there are relatively few observations for most pollutants at the upper extremes of income. (5) As a consequence, the shape of the estimated relationship may be **imprecisely estimated** at these extreme points.

s29.(7) Although the income variables are highly correlated, the lagged GDP terms tend to **have** the lower  $p$ -values, perhaps indicating that past income has been a major determinant of current pollution standards.

s33.(4) This latter result is quite plausible, because fecal contamination does not stem from economic activity per se. (5) Since contamination can be controlled by the treatment of raw sewerage, our result could be explained by a lagged response of treatment plant construction to per capita income growth.

s35.(1) The results relating to total coliform are rather baffling.

s35.(5) We have no explanation for these findings. (6) Perhaps they reflect a spurious relationship inasmuch as the presence of some types of coliform does not necessarily indicate fecal contamination, and these bacteria have many nonanthropogenic sources.

Although the evaluative expressions above are not attributed but averred, they are *hedged*. *The use of epistemic modal expressions such as perhaps, may, and could indicates lack of absolute certainty about the validity of the propositions being put forward. The function of these hedged expressions is to exercise caution. It is important at this stage to reiterate the different effects on a proposition by ‘taking a stand’ as expressed by the ‘we’ self-reference and the modification of certainty expressed by modality and hedging. If we take, on the one hand, ‘we believe’ in s7.3 and on the other, ‘it appears’ in s26.6, two different things seem to be going on. In the former example, the writers seem to be saying, “We are sure of the point we are making, but we are aware that other views exist. However, we need to emphasize our own point”. Here the writers are neither being polite or exercising caution but they are taking a position in the argument. In the latter example, however, they seem to be saying, “We are not sure about the point we are making (or we want to appear properly cautious)”. In this case, lack of absolute certainty or the desire for caution is the primary focus for the proposition.*

Concerning the value system in this text, it is important to relate this to the overall purpose of the paper. In this paper, the aim is expressed in s4.1, which is to employ “reliable data and a common methodology to investigate the relationship between the scale of economic activity and environmental quality...”. Through this statement of aim/goal, the writers position the reader into taking as key those sentences whose evaluations are related to reliability of data and methodology as well as the conclusions of the investigation.

On the basis of this assumption, I will look at key evaluations of the entities (data, methodology and findings) and look at in what terms these are evaluated. To do this, I will briefly look at key evaluations in the data (Section II), methodology (Section III), results (Section IV) separately and then look at how they work together in the text as expressed in the conclusion (Section V).

In Section II, the main Problem referred to is that of related to data. This is expressed by s7.1: ‘**Unfortunately a paucity of data limits** the scope of any such study’. Recognising this problem, the writers suggest a Response - using alternative data from the GEMS project. This is used on the basis of its central concerns of **comparability** and **reliability** (s7.3) which seem to be desirable qualities in the writers’ research. However, this alternative data is also shown to have imperfections.

The following sentence expresses this:

s12.(2) *The number of observations from lake groundwater stations is, however, **too small for any meaningful statistical analysis.***(3) Therefore, we focus our study on the data that describe the state of river basins.

Looking at this stretch of text one sees s12.2 as negative evaluation of the previous Response. Therefore s12.3 presents yet another Response - the choice of more reliable data - that describes the state of river basins.

The examples given above demonstrate an interplay between the evaluation of Control and that of Usefulness. On the one hand, Control is expressed by **paucity** (s7.1) and **too small** (s12.2) - these two evaluations imply that the data are not enough. Usefulness, on the other hand, is expressed in '**limits the scope**' (s7.1) and '**[no] meaningful analysis**' (s12.2) which imply that the data are therefore not useful. *It is important to note that in both stretches Control precedes Usefulness and not the other way round. This interdependence between Control and Usefulness is clearly captured by Paragraph 17 which encapsulates the section:*

s17.(1) As we have noted, *the GEMS data do not cover all dimensions of environmental quality.* (2) Besides the air pollutants that affect global atmospheric conditions, **important omissions** include industrial waste, soil degradation, deforestation, and loss of biodiversity. (3) While *we view our inability to examine the effects of growth on these forms as unfortunate, we believe that there is much to be learned from studying how the many indicators of water quality respond to changes in output levels.*

In this example, Usefulness is expressed by negative statements **do not cover**, **important omissions** and **much to be learned** whereas Control is expressed in **inability to examine**. Usefulness appears to be dominant in the whole section. For example, in s17.3, the Control parameter is expressed by the dependent 'while'-clause, whereas Usefulness is carried by the dominant clause. The message that comes out of the data section is that although the data's Fixedness (Control) has not yet been established - '**our inability to examine...as unfortunate**', its Worthiness (Usefulness) can be argued for - 'there is **much to be learned from studying...**'. In



this sentence, Usefulness appears a more dominant evaluation than Control and is signalled as thus by the grammar of the clause.

Like the data, the methodology is primarily evaluated in terms of Control and Usefulness. The section examines the strengths and limitations of the methodology - the reduced form approach. Key evaluations here are:

s18.(3) *We think* there are **two main advantages** to a *reduced-form approach*.

s18.(7) A **limitation** of a *reduced-form approach*, however, is that it is **unclear** why the *estimated relationship between pollution and income exists*. (8) Nevertheless, we think that *documenting the reduced-form relationship between pollution and income* is an **important first step**.

s23.(3) However, *by including these additional variables*, we **are able** to *reduce the residual variance in the relationship between pollution and income and thus generate more precise estimates*.

All the above examples comment on Control and Usefulness. Although **unclear** in s18.7 could be seen as Certainty, its function is to comment on Control: it could be interpreted as 'we cannot tell why'. An example of Usefulness are the advance label **limitation** in s18.7 (note that the EE is *reduced-form approach*, which is process) while Control is carried by s23.3 with '**we are able to reduce...**'. It is important to note that even here Usefulness dominates Control. For example, while in s18.3 there is only Usefulness, in the two latter examples both evaluations are expressed. While in s18.7 the advance label **advantages** comments on the usefulness of the approach, **unclear** comments on the Control parameter. This dual evaluation parameter can also be seen in s23.3 where Control is expressed by *we are able* and Usefulness by the expression **more precise estimates**.

The results and findings, on the other hand, are evaluated along the Certainty and Significance parameters. Examples of Certainty are:

s32.(4) ...*the consistency of the estimates* across these different samples **gives us some added confidence** in each one.

s33.(4) *This latter result* is quite **plausible**, because fecal contamination does not stem from economic activity per se.

s35.(1) *The results* are rather **baffling**.

whereas significance is realized in, for example:

s32.(1) ...we find a **statistically significant** *beneficial relationship* only for dissolved oxygen...

s39.(1) **Of particular interest** are *the estimated coefficients on the time variable*.

Despite the dominance of product-oriented evaluation in the results, there are also a few examples of process.

s26.(3) *The tables in these appendixes* also **show** the *p*-values for the three current income variables, the three lagged income variables, and the six income variables together. (4) In view of the strong multicollinearity between current and lagged GDP, as well as among powers of GDP, it is **difficult to infer much about the individual coefficients**. (5) However, in most cases *the collection of current and lagged GDP terms* is **highly significant**. (6) It appears therefore that *national income* is an **important determinant** of local air and water pollution.

Although in this extract the concern is with the results, especially the evaluation of Significance expressed by **show**, **significant** and **important**, there is also the evaluation of Control - **difficult** - in s23.4 which indicates how the problem with the product affects process - *to infer*. The presence of the process evaluation in results does not undermine the fact that the results will typically be evaluated in terms of product-oriented value but indicates possible combinations of value statements determined by the purpose of the message at that particular point in the discourse.

The conclusion section appears to put equal emphasis on both process and product.

For instance, there is evaluation of Usefulness as in the following example:

s43.(4) *Our methodology* **does not allow** us to reject these hypotheses, or even investigate the means by which income changes influence environmental outcomes.

whereas Certainty is expressed in:

s42.(1) *Our findings* are broadly **consistent** with those reported in other studies.

This equal emphasis on both process and product could be due to the fact that the conclusion typically summarises the whole paper and therefore comments on aspects ranging from methods to findings. However, in many of the texts I have examined the balance between process and product orientation is not always even - some conclusions are dominated by evaluation of methods whereas others emphasise the results. In the case of the present paper, the two strands have been kept in mind throughout the paper, and it therefore makes sense to include both in the conclusion.

To summarise, evaluation here seems to vary in terms of what is being evaluated as well as at what stage of the paper the evaluation comes. It has already been seen that process-oriented evaluation dominates the methods section whereas the product-oriented evaluation dominates the results. It is also important to say that Response appears to be process-like because here the concern is about what has (not) been done as well as what should be done. This seems to be consistent with Hoey and Winter's Problem-Solution texts where Response is typically expressed in activity terms.

The previous chapters have emphasised the role of the lexicogrammar in evaluation as well as how evaluation contributes to the structuring and organisation of the text.

For instance, so far labelling has been implied to be a way of identifying key propositions. It has also been argued that an evaluative label normally provides framing for a stretch of text over which the label has scope. Two examples of advance labelling, one from the methodology section and the other from the conclusion section, show this technique in use. In both examples, the extent of the scope of the label is signalled through enumeration (see Tadros, 1985, 1989, on enumeration in prediction). The enumeration signals are underlined below for emphasis.

s18.(3) We think **there are two main advantages to a reduced-form approach**. (4) First, the reduced form estimates give us the net effect of a nation's income on pollution.... (5) Second, the reduced-form approach spares us from having to collect data on pollution regulations and the state of technology, data which are not available and are of questionable validity.

s43.(1) *Several points need to be emphasized* concerning the interpretation of our findings.

s43.(2) First, even for those dimensions of environmental quality where growth seems to have been associated with improving conditions, there is no reason to believe that the process has been an automatic one.

s44.(1) Second, it is possible that downward sloping and inverted U-shaped patterns might arise....

s45.(1) Finally, it should be stressed that there is nothing at all inevitable about the relationship that have been observed in the past.

Although this is a very explicit way of signalling relevance and helping the reader to make the correct inferences, not all propositions which seem to be key are labels. This then raises the question on how the reader manages to identify key propositions where there is no labelling. As has been argued, the writer and reader's shared knowledge and expectations about the text pattern and discourse function are crucial in the interpretation of the text. For example, for Problem-Solution texts, the reader

is primed to look for Problem and Response, and thus suitable candidates for the expression of these elements are 'picked up'.

As has already been demonstrated, the questions at the beginning of this text signal Problem which predicts Response - the reader is therefore positioned to look for answers to the questions in the text. Another example has been that of a statement of Response (aim) in s4.1 whose scope has been seen to extend across the whole text by virtue of signalling an important goal of the paper. Thus taking this aim into consideration, the ideal reader will look for statements which work towards the achievement of this goal as candidates for important evaluations. To show how non-labelling sentences can carry key evaluations and maintain text coherence, the three sentences below can be seen as summarising the whole article.

**PROBLEM:** s1.1 Will economic growth ever bring ever greater harm to the earth's environment? Or do increases in income and wealth sow the seeds for the amelioration of ecological problems?

**RESPONSE:** s4.1 The main contribution of the present paper is that it employs reliable data and common methodology to investigate the relationship between the scale of economic activity and environmental quality...

**CONCLUSION/EVALUATION:** s37.1 To summarize, we find little evidence that environmental quality deteriorates steadily with economic growth.

Based on the discussion above, it is now possible to refine a little the concept of labelling. In the papers I have examined, labels typically occur more in the body of the text than in either the introduction or the conclusion. To account for this phenomenon, it is important to differentiate between the function of the introduction, on the one hand, and that of labelling on the other. This could be done by using clause relations analysis, especially that of General-Particular type by Hoey (1983). While both the introduction and the label can be seen as general statements in

relation to the texts they comment on, they work quite differently. The kind of General-Particular relationship between the introduction and the body of the text and that of the label and its lexicalisation, is that of Preview-Detail, with the former constituting the Preview element of the Preview-Detail pair and the latter the Detail element. According to Hoey, this relation can be tested by “whether or not the passage can be projected into dialogue using the broad request ‘Give me some detail of *x*’ or ‘Tell me about *x* in greater detail’ (Hoey, 1983: 138). Despite both the label and the introduction constituting the Preview element, their relation with the rest of the text works differently. For instance, while the introduction is self-contained in the sense that its meaning is independent of the details in the body of the text, the label is given meaning by the text over which it has scope - the label is meaningless in the text until it has been lexicalised. The difference between the two is that while both predict the Detail to follow, the introduction does not demand it whereas the label demands it (see Hoey, 1983: 139, on the difference between predicting and demanding the Detail by the Preview element). The fact that it is imperative that the label be lexicalised demonstrates that labelling has a text structuring role whereas the introduction does not. In the texts I have examined, labelling plays a major organisational role in the body where fuller details of the paper such as discussions, descriptions or analyses take place, and therefore there is a need to remind the reader from time to time what to expect (prospective labelling) or what has expired (retrospective labelling) in relation to where the discourse is at that point in time (compare with Sinclair, 1987 on encapsulation in discourse). This does not mean that there may not be labels in either the introduction and conclusion sections but that such labels often have very short scopes in that both the label and its lexicalisation

are within the same sentence. An example of this phenomenon is that of s4.1 where **main contribution** is an advance label of the evaluation in the that-clause within the same sentence.

The analysis of the three dimensions that has been carried out here has several implications for text patterning and organisation. It is clear that process and product-oriented evaluations are interdependent, with one function validating another. As demonstrated in the above text, to evaluate product, it may be useful to evaluate process as well in that a good product is a result of a good process - the writers persuade the reader to take their findings as valid partly by positively evaluating the methods used to achieve such findings. This strategy is clearly summarised in s40.3: '*our study is the most comprehensive possible*'.

The choices of patterns and organisation identified in the above text are by no means the only ones. There are many other options as the analysis of the two articles below will demonstrate.

### 6.3.2 Process + Body of Text as Basis

ST6.15: H34: Ballads, Libels and Popular Ridicule in Jacobean England (see Appendix 2C for a complete text)

#### 6.3.2.1 Macropatterning

The analysis of its introduction in ST6.11 above has shown that this article is process-oriented in that it aims at validating research methods. The discussion of the introduction has indicated that even though the Problem is presented in a product-oriented way - lack of knowledge - in s1.1, the rest of the paper shows that it is

process-oriented, for example, the statement of Response in Paragraph 5. The process-oriented approach in the introduction is carried on by the conclusion to the paper - Paragraph 57. This paragraph is about the evaluation of the Response suggested by the paper - to use ballads and libels to obtain information about the lives and culture of ordinary people in Jacobean England. Examples of this evaluation of methods are:

s57.(1) *Verse libels offer valuable insight....*

s57.(2) As such, *they demonstrate* some of the relationships....

s57.(3) *They illustrate* the common currency in popular ridicule....

s57.(4) *They suggest* those forms of behaviour most often labelled as deviant... and **point out** those individuals most disliked....

s57.(5) There is *an anti-deferential tone to many of these compositions* which **allows** us to *add another dimension to our appreciation of contemporary social relations.*

s57.(6) To be sure, *the elusive and ephemeral nature of such material makes it difficult to recover*, but it is also *these qualities* which **give it an invaluable immediacy and spontaneity.**

From the examples above, it is clear that the major entity is not the knowledge as suggested by the way the Problem is expressed in s1.1, but the methods needed to achieve that knowledge.

This paper works very differently from ST6.14 above. What is immediately noticeable is that the body of the text (paragraphs 6 to 56) is dominated by TOE. The following paragraph exemplifies this:

s48.(1) Libels were obviously an effective way in which people might jeer, and so assault and wound, their betters.(2) Historians generally tend to regard social relations in early modern England as being characterized by a nexus of paternalism and deference. (3) In normal circumstances, landlords, masters and figures in authority offered their protection to the lower orders (more or less) in return for a tacit acceptance of the existing hierarchy of wealth and power. (4) Sometimes this reciprocity was disturbed when the governors abused their position, or when the governed expressed their grievances in the violent protest of riot and rebellion. (5) But the evidence of libels suggests that another dimension might be added to this rather polarized model.(6) Between the extremes of acquiescence and unrest there was a whole dynamic of interpersonal tensions, an oscillating interplay of conditional respect and cautious mutuality by which, in practice, people lived together across the gulfs of inequality and negotiated the day-to-day configurations of their vertical relationships.



In this paragraph, examples of ROE can only be found in s48.1 with **obviously** expressing the certainty of the proposition that is otherwise TOE, a proposition attributed to *historians* in s48.2 and evaluation expressed by *evidence* in s48.5. The rest of the paragraph has a different orientation as expressed by EEs such as *libels, landlords, masters, figures in authority, the governors and the people*, negative evaluations such as **jeer, assault, wound, abused, extremes of acquiescence and unrest and tensions**; and positive evaluations as in **protection, acceptance, respect and mutuality** - all these express the 'good' and 'bad' in the world outside research and are therefore TOE.

The dominance of TOE can be explained by the fact that the body is predominantly a recount of past historical events. Given the Response as stated in Paragraph 5 - to recommend the use of ballads and libels as a good method of research - the body can be seen as providing all the useful information which can be derived from these ballads and libels: their composition and composers, how they were used (e.g. to jeer at or ridicule the undesirable members of society), and their effect on the lives of the people in Jacobean England. The semantic function of the body can therefore be interpreted as that of Basis. That is, in order to match or contradict the writer's evaluations expressed by Paragraph 57 where *verse libels* are said to **offer valuable insights, demonstrate, illustrate and give an invaluable immediacy and spontaneity**, the reader needs the body of the text as evidence to such evaluations.

It is important to note that although the body of the paper is dominated by TOE, there are examples of ROE at intervals. Because of the paper being process-oriented, the overall focus of ROE here is that of the validation of a method - the use of ballads and libels. The following table exemplifies major EEs and AVs:

Sentence	Evaluated Entity (EE)	Ascribed Value (AV)
s9.1	The case of George Hawkins	provides a vivid, though by no means untypical example...
s15.1	The Star Chamber records	yield important information
s17.7	The latter statistic	is...the important one to bear in mind
s19.6	the burden of proof	ensures that...both the circumstances and the precise contents...can be retrieved
s20.1	producing a copy...	difficulty
s36.5	Examples such as these	provide rare evidence
s47.1	to gauge the audience response	it is sometimes possible
s56.4	the libels	paradox

Table 6.1: EEs and AVs in paper H34

The above examples of ROE in the overwhelmingly topic-oriented text imply that the writer is (presumably) reminding the reader at regular intervals of the overall purpose of giving all this information. Although most of the EEs above are product (e.g. s9.1, s15.1, s17.7 and s36.5), and thus their evaluation is product-oriented, it can be argued that because their use in research is put forward as an efficient method/approach to follow, the product is presented as a means towards an end - to validate methods.

### 6.3.2.2 A Three-Dimensional Analysis

In terms of responsibility, in this paper there seems to be more a verall than attribution. In the body, for example, the events are presented as historical facts without the writer disclosing his sources of information. Even at stages where the

writer comes in to evaluate events, thereby switching from TOE to ROE, he seems to prefer averral rather than attribution. There are very few cases where there are textual sources mentioned, for example:

s47.(1) *As these examples suggest, it is sometimes possible to gauge the audience response to such ballads and libels in a way that is really allowed by cheap printed text.*

The use of modality in the introduction has already been discussed under ST6.11 above. In the body of the text, the expression of certainty seems to be important in the interpretation of the historical facts, the movement from TOE to ROE. An example here is:

s56.(1) *It **may have been the case** that in prosecuting their assailants at Westminster, some libel victims were seeking to exploit such official anxieties over subversion and disorder.*

Other examples of modalised/hedged expressions are evaluative words such as **clearly** (s18.1) and **obviously** (s48.1); and modal auxiliaries such as might (s48.6) and modal lexical verbs such as perhaps (s49.4) - all of which indicate the writer's caution in interpreting events that took place in the past.

Another form of expressing Certainty is that of hypothetical-real situations. An example here is:

s23.(3) *If, as is usually assumed, the basic skills of reading were learned before those of writing, then this common form of defence suggests, as it was designed to do, that the accused was incapable of framing a document.*

In this example, there is an assumption being made. This is done by using the hypothetical-real situation in which the truth of the hypothetical stretch (the if-clause) is a condition for that of the real stretch (the then-clause). It should be noted that the hypothetical stretch is in itself an assumption signalled by 'as is usually assumed',

suggesting lack of absolute certainty by the writer, and thus reducing the degree of certainty for whole hypothetical-real situation stretch.

Despite the paper being process-oriented, as in other texts both product and product-orientation occur in the text, albeit performing different functions. Although examples of all parameters of value can be identified, three parameters are dominant: Significance, Certainty and Control. Let us look at the following:

s9.(1) *The case of George Hawkins provides a vivid, though by no means untypical, example* of the way in which ordinary men and women in this period composed and had written out extempore songs in order to publicize news or rumour, information or entertainment. (Significance)

s19.(6) *Fortunately, the burden of proof ensures that, in greater majority of cases, both the circumstances and the precise contents of such documents can be retrieved.* (Certainty + Control)

s15.(1) For this reason, *the Star Chamber records yield important information* about the way in which slander and libel were coming to be regarded in this period and about the forms which they most often assumed. (Significance)

s17.(7) *The latter statistic is, of course, the important one to bear in mind* if one is discussing the composers of libels. (Significance)

s18.(1) *Clearly, the practice of inventing ballads and songs in order to ridicule and shame a rival or adversary was one well-known* at all social levels. (Certainty).

s20.(1) The *difficulty in producing* a copy of some libels was a consequence of the fact that many of them were intended to be chanted or sung; they were transmitted orally to the extent that some were never written down at all. (Control)

s35.(6) *Examples such as these provide rare evidence* of the penetration of cheap print at the lowest levels of provincial society before the Civil War. (Significance + Certainty)

s47.(1) As these examples suggest, *it is sometimes possible to gauge the audience response to such ballads and libels in a way that is rarely allowed by cheap printed texts.* (Control)

s56.(4) The *paradox* of the libels examined here is that they were usually a supremely parochial phenomenon but one disputed and settled at the most elevated of all levels. (Significance).

As has already been said, the function of the ROE in the body of the text is that of evaluating the information about the writer's suggested method - the use of the libels and ballads. These are evaluated in product terms. According to the examples above, they are dominated by Significance and Certainty. However, this translates to the Control parameter. An example is that of s19.6 where Certainty results in Control - *the burden of proof* (Certainty) has the result that '*both the circumstances and the precise contents of such documents can be retrieved* (Control).

The above can be seen as supporting the fact that product validates process - Significance and Certainty of the sources result in Control over methods.

In the conclusion, however, process-oriented evaluation is overtly dominant - Usefulness and Control. Here the main EE is *verse libels*. These are evaluated in terms such as **offer valuable insight** (s57.1), **demonstrate** (s57.2) and **gives it an invaluable immediacy and spontaneity** (s57.6) - all these are Usefulness; whereas **allows us to add** (s57.5), **difficult to recover** (s57.6) express Control.

In terms of textualisation, a striking feature here is the use of labelling, particularly retrospective labelling, in the body of the text. This occurs at points in the text where the writer is summarising the content of the text - bringing the past historical events to the 'here and now' which can be seen as a movement from the autonomous to the interactive plane (see Sinclair, 1981, for a detailed discussion on planes of discourse).

s35.(1) Libellers such as these were obviously adapting to their own purposes, perhaps by inserting new names, ballads which they knew from printed broadsides. (2) This may have been the case with George James, a serving-man from Lutterworth, Leics. (3) In February 1616 he was employed in the household of Warwickshire gentleman, Henry Bressye. (4) He soon fell out with his mistress, however, who decided to lock away his livery coat, and in a fit of revenge and resentment, he contrived a "libellous songe or ditty" against her. (5) It

began with a well-known rallying cry, “Roysters give roome!”, and James was able to claim, quite plausibly, that his supposed “libel” was no more than a regular

songe or jygge and comedians which the servants to the late highe and mightie Prince Henrie, Prince of Wales, did often, in the presence of his highnes and manie nobles and peeres of this reallme, act, daunce and singe as a jygge in the end of their interludes and plaies, being a generall song without particuler nomination or allusion to anie. Which said songe or joygge hath bene seene, approved and allowed by the right worshipping the Maister of the Revells to his majestie.

(6) *Examples such as these* **provide rare evidence** of the penetration of cheap print at the lowest levels of provincial society before the civil war. (7) *They* **indicate** how broadsides might provide the basis for an extemporized song reworked and applied in a specific context.

The retrospective evaluation in s35.6 - 7 coincides with an important summary of the content of the whole paragraph. The paragraph is basically a recount of events and the evaluation is mainly that of the TOE type. The function of this is to package the text, to encapsulate the content of the text and in so doing signal to the reader how that information should be understood and judged. The information is retrospectively referred to as *examples* and these are given a positive attribute **provide rare evidence**, suggesting the usefulness of the information given.

From the discussion of this paper, it has been suggested that the text is different from others in terms of the distribution between TOE and ROE. It has been seen that ROE is concentrated in the beginning and final sections, with TOE dominant in the rest except at intervals where the latter is translated to the former through evaluative summaries such as retrospective labelling. This pattern could be explained by pointing that this is a History text whose main focus is recounting historical events and that this is done through the traditional “storytelling” function which characterises History writing. This will be discussed fully in the analysis of ST6.17 below.

### 6.3.3 Combined Process and Product + Cyclical Pattern

ST6.16: AL40: A critical period for learning to pronounce foreign languages? (see Appendix 2A for a complete text).

The article is a critical analysis of the 'Critical Period Hypothesis' (hereafter called the CPH) as a heuristic for explaining adult-child differences in learning L2 speech. According to the CPH, the lack of success in mastering the L2 pronunciation among adults can be accounted for by neurological maturation or re-organisation which takes place in the early teens. At around this age the plasticity of speech muscles disappears, resulting in failure by an individual to reach the L2 native speaker level of pronunciation. The writer argues that adherence to the CPH as a heuristic for explaining L2 learning fails to take into account important environmental and social factors which may account for adult-child differences in L2 learning. The paper's conclusion is that there is no conclusive evidence to support the existence of the critical period and that confining the explanation of adult-child differences in L2 learning to the CPH inhibits research into other testable hypotheses which might explain the adult-child differences in learning L2 even better.

In terms of evaluation, it should be noted that the title of this article is in the form of a question rather than a statement. In everyday conversation, a question demands an answer. In written language however, the fact that a text is a monologue makes the situation more complex. For instance, in written text, there is no face-to-face interaction between the writer and reader. To ensure successful interaction with the reader, however, through choices from the lexicogrammar and discourse, the writer very often assigns various roles to him/herself and to the reader (see Thompson and Thetela, 1995, on enacted and projected roles in written discourse). Despite the

differences between spoken and written discourse in terms of interaction management, in both situations a question predicts a response. In this case, therefore, the question signals Problem requiring Response. In addition to predicting a Response, the question, which is in the form of moodless interrogative clause, implies the writer's scepticism about the existence of a critical period.

Unlike with the Fox paper where it was relatively easy to categorise the main focus as either process or product, the pattern in this paper is much more complex in that there is equal emphasis on both process and product. While at the highest level, the main EE is the existence of a critical period, as signalled by the title, the paper expresses a dual purpose in the concluding paragraph of the introduction:

s8.(1) The discussion leads to the conclusion that *existing evidence does not provide firm and conclusive support for the existence of a critical period for human speech learning*, and that *assuming the existence of a critical period may inhibit the search for testable hypotheses* concerning the basis for observed adult-child differences in L2 pronunciation.

The conclusion is two-fold: first, 'existing evidence does not provide firm and conclusive support' and secondly, 'assuming a critical period does exist may inhibit the search for testable hypotheses'. While the former is product-oriented, the latter is process-oriented. The two aspects of the conclusion seem to be equally important, this equality being grammatically signalled by the additive 'and' which demonstrates a paratactic relationship between the two propositions. This dual purpose runs through the paper as the analysis of the introduction below will show.

The information in the paper is organised under sections dealing with specific issues about the topic:

- (i): literature in support of the CPH
- (ii): literature providing evidence against the CPH
- (iii): a critique of previous research's methods and findings
- (iv): suggestions for alternative methods of investigation
- (v): Conclusion



The organisation of the paper can be summarised by the following diagram:

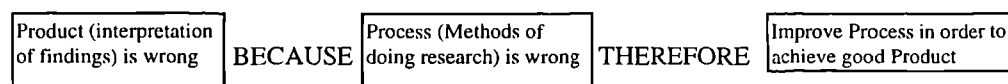


Figure 6.8: Overall organisation of AL40

The organisation of the paper presented in the above diagram will be exemplified by Sections 2, 3 and 4 below, with each section corresponding to each of the three functions suggested by the diagram.

### SECTION 2: THE PRODUCT IS 'WRONG'

SENTENCE	EVALUATED ENTITY (EE)	EVALUATION (AV)
S9.1	to question whether a critical period...truly exists	many good reasons
s12.2	existing neurological evidence	does not provide firm support for the existence of a critical period
s12.3	evidence for a discontinuity in neural development....	there does not seem to be evidence
s13.3	regarding the age at which cerebral lateralization reaches completion	there has been controversy
s13.7	that lateralization per se would impair language learning....	it has never been clearly established
s13.8	a recent dichotic listening experiment	casts doubt....
s14.2	this expectation	was not supported....

### SECTION 3: THE PROCESS IS 'WRONG'

SENTENCE	EVALUATED ENTITY (EE)	EVALUATION (AV)
S16.1	the CPH	presupposes an overly simple view of the speech learning process
s17.2	a <b>failure</b> to consider all three aspects	is reductionistic and apt to lead to misunderstanding....
s25.1	previous studies examining the role of affective factors	few if any...have been directly related to pronunciation
s26.5	<b>no</b> existing research	has clearly shown...nor provided unambiguous information
s30.1	- comparing child to adult subjects -differences in the rate of learning	potential difficulty may be misinterpreted....

## SECTION 4: CHANGE/ IMPROVE PROCESS IN ORDER TO GET GOOD PRODUCT

SENTENCE	EVALUATED ENTITY (EE)	EVALUATION (AV)
s31.1	- to control for all the potential confounding factors... - to provide unequivocal behavioral evidence....	it would be difficult if not impossible  it is <i>probably impossible</i>
s32.1	one hypothesis	could be tested
s35.5	an issue	should be investigated
s36.3	to think that English learners of French will judge the acoustically different phone....	it seems reasonable
s38.2	to determine whether English children are more likely to develop a new category....	it would be useful
s38.3	This	could be done in two ways
s40.1	- Neither of the two broad 'cognitive' hypotheses - (but) both	has been adequately tested  could be tested....

Table 6.2: Detailed organisation of AL40

With the exclusion of the introduction (Section 1), each of the remaining sections is dominated by a specific kind of evaluation. Whereas in the first section, the EEs are predominantly interpretations of the findings, for example, *evidence*, *controversy* and *expectation*, the two latter sections focus on process entities, for example, *accepting*, *to consider* and *oversimplification* in Section 3, and *to control*, *to think* and *to determine* in Section 4. While Section 3 concentrates on previous research - Attributed Response - section 4 concentrates on present research - Averred Response. Although the latter sections are process-oriented, the evaluation in the latter is very much modalised or hedged. Examples of modality are 'would', 'could', 'should' and 'seems'. This implies that the writer takes a careful approach in suggesting new methods needed for the study of L2 speech learning research.

The focus of the analysis in this chapter will be that of its overall cyclical pattern.

This will be illustrated by analysing the introduction which effectively summarises

the whole paper. For example, it covers aims/goals, methodology, results and conclusions; and it can in fact be easily mapped onto the rest of the paper.

For an overview analysis of this pattern, two sentences, s1.1 and s8.1, will be used. The choice of these sentences is based on their important positions in the text as well as the roles they play in the discourse of the text. First, s1.1 is the opening sentence of the text whereas s8.1 can be seen to carry the overall evaluation of the text. Secondly, the sentences express contradictory evaluations. The contradictory evaluation between the two raises the question about the movement of evaluation through the text - that is how the writer handles the shift from one evaluative stance to another in the course of the text.

s1.(1) *The results of many acoustic and perceptual experiments **have provided empirical support** for the **popular belief** that the earlier an individual begins to learn a foreign language (henceforth L2), the better will be his or her pronunciation of that language (e.g., Asher and Gracia 1969; Fathman 1975; Cochrane 1977; Williams 1979; Tahta *et al.* 1981; Oyama 1982a, b).*

s8.(1) The discussion leads to the conclusion that *existing evidence **does not provide firm and conclusive support for the existence of a critical period*** for human speech learning, and that *assuming the existence of a critical period **may inhibit the search for testable hypotheses*** concerning the basis of observed adult-child differences in L2 pronunciation.

As an opening sentence, s1.1 provides the background information about the topic as well as evaluating that information. For example, the main proposition carried by the that-clause defines the concept, the 'critical period', the existence of which is the focal point of the paper. In terms of evaluation, there appears to be some ambiguity of evaluative position - the sentence contains both negative and positive values. However, on close examination, there appear to be two entities being evaluated. For example, on the one hand, *the results* are evaluated as having provided **empirical support**. It should be noted that in scientific investigation, **empirical support** is

positive. On the other hand, there is the evaluation of the concept carried by the that-clause which is evaluated through the advance label **popular belief**. In this genre, a *belief* is unscientific and therefore the label is potentially negative in that sense. From the distinction above, this conflict between the negative and the positive values in the same sentence suggests that the writer's criticism is not of the research findings - the *results*, but of their interpretation. Overall the framing in the sentence can be seen not as explicitly negative but as anticipating negative evaluation.

It has already been argued that s8.1 reflects the paper's dual purpose by expressing two independent evaluations in the conclusion, one product-oriented and the other process-oriented - the *existing evidence does not provide firm and conclusive support* and '*assuming the existence of a critical period may inhibit the search for testable hypotheses*', respectively. However, unlike in s1.1, the evaluation in this sentence is explicitly negative. Taking into consideration that s1.1 expresses a more or less neutral framing which anticipates negative evaluation, the evaluation in s8.1 might be seen as fulfilling that anticipation.

To demonstrate the movement of evaluation in a cyclical pattern, I use the term "stance" based on Biber and Finegan's definition of "the lexical and grammatical expression of attitudes, feelings, judgements, or commitment concerning the propositional content of a message" (Biber and Finegan, 1989: 93). Thus negative or positive lexicogrammatical evaluations of the CPH will be interpreted as signalling either positive or negative position/stance (or in some cases neutral stance) vis-à-vis the main EE - the CPH.

STANCE 1: Negative Anticipation: As has been argued s1.1 as an opening sentence sets up the negative frame from which the rest of the text hangs for harmony.

STANCE 2: Attributed Response (Positive Evaluation)

This stage of the text is found between s1.1 and s5.1. Here the writer reviews previous literature in support of the CPH. Positive evaluation can be seen in the choice of lexical terms such as the following:

s1.(4) *These findings have inspired research....*

s2.(1) ... there seems to be **widespread agreement** among L2 researchers that adults lose some important aspect of speech-learning ability that children still possess.

s2.3 *The CPH makes two important predictions.*

s3.(1) The literature abounds with *statements in support* of the view that adults are less able than children to learn new forms of pronunciation because they have passed a 'critical period' ....

s4.(1) Walsh and Diller (1981: 12) recently provided specific new arguments concerning **possible neurological basis** for 'difficulty' in eliminating foreign accents after childhood ....

s4.(5) *These conclusions are consistent*, they suggested (1981: 8), with the view that the identification of speech sounds depends on the existence of feature 'detecting' neuronal circuits which are established early in development and do not evolve with experience.

s5.(1) *The possibility of a neurally-based loss of 'plasticity' finds prima facie support* in the loss of ability for further song learning observed in certain avian species - a phenomenon known as 'crystalization' (Marler and Mundinger 1971; Studdert-Kennedy 1981)....

Despite evaluating the Response in positive terms, the writer detaches himself from the evaluation by attributing the evaluation to previous research. This is typically realized by reporting. Most of the reporting verbs used are predominantly neutral (or non-factive). Examples of such verbs are 'demonstrated' (s1.2 and s1.3), 'asserted' (s3.2), 'concluded' (s3.3), 'speculated' (s3.4), 'argued' (s3.5), 'claimed' (s3.6), 'noted' (s4.2) and 'suggested' (s4.5). This choice of fairly neutral verbs to report other research further supports the detachment of the writer from the attributed

Response and allows him to come in later to evaluate such research (see Tadros, 1985, 1989, on the argument that detachment predicts involvement).

Besides reporting verbs, there are other signals of attribution. First, there is reporting without the use of reporting verbs, for example, 'according to Walsh and Diller' in s4.4; and nominalised reports such as 'in support of the view...' (followed by the that-clause). Secondly, there is attribution through passivisation such as 'is known to' (s5.5 and s5.6), 'is used to rationalize empirical studies' (s6.1), and 'was accepted as a fact' (s6.4). Although the source here is unspecified, the passive implies the writer's lack of commitment to the proposition expressed.

The above discussion points to the fact that although attributed response is positively evaluated, the detachment of the writer predicts a reversal in the pole of value to come.

### STANCE 3: Negative Evaluation Averred

The writer's highest responsibility can be seen in the Averred Response in s5.2, where after a long period of detachment the writer comes in to make the first categorical negative evaluation of the CPH.

s5.(2) However, Walsh and Diller's hypothesis concerning the role of innate neural 'feature detectors' would be accepted by few speech-perception researchers today, and is inconsistent with research pertaining to the perception of L2 phonetic contrasts by L2 learners.

s6.(4) Thus Mack - like many before her - appeared unwilling to interpret her evidence as possible counter-evidence against the CPH, because the CPH was accepted as a fact, rather than viewed as a hypothesis.

The switch from positive evaluation attributed to negative evaluation averred fulfils the prediction of negative evaluation set up in s1.1.

#### STANCE 4: Negative conclusion (with Basis)

The conclusion of this paper as expressed in s8.1 has already been seen to be negative. Since this is the evaluation of Response in the paper, the negative pole at the end of the text leaves open the topic for further research. This negative ending can be seen as taking the reader back to the Problem. It would seem that the writer is saying there are no answers yet because recommended methods for the study of L2 speech learning - 'testable hypotheses' - are not yet in place.

The cyclical development of evaluation in the introduction can be summarised by the diagram below:

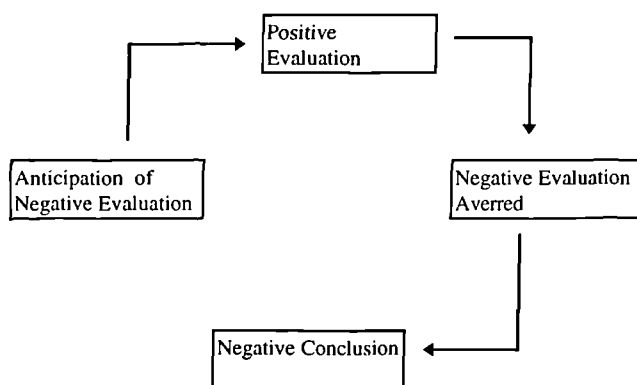


Figure 6.9: Cyclical patterning of the CPH text

In terms of organisation in the text, it is clear that while large scale cohesive markers are virtually absent in the introduction, the rest of the article is organised not only under subheadings but under several markers of relevance such that of labelling, particularly advance labelling. This organisation makes it relatively easy to identify

parts of the content of the text. An example of a good relevance marker is that of s9.1 which sets up the harmony for the whole of Section 2 (paragraphs 9 to 15).

s9.(1) I believe that **there are many good reasons to question** whether a critical period for speech learning truly exists.

The good reasons above are relexicalised in the form of listing or enumeration : first (s9.2), second (s11.1), third (s12.1) and fourth (s14.1).

There are other sentences which have broad scopes even though they are non-labelling. The following are examples of non-labelling sentences with broad scope:

s17.(3) More specifically, I believe that the existence of adult-child differences is likely to arise from a variety of factors other than (or in addition to) a critical period, because the age of L2 learners is inevitably confounded with other conditions that co-vary with chronological age.

s31.(4) **A more important reason**, perhaps, is *that accepting the CPH may impede the development of specific hypotheses that can be tested.*

While the scope of s17.3 extends over the rest of Section 3 (Paragraphs 18 to 30), that of s31.4 extends over the rest of Section 4 (Paragraphs 32 to 40). While both the above sentences are non-labelling, they have an organisational function in that the relationship with the subsequent text over which they have scope is that of the Preview-Detail relationship. This illustrates how even without explicit signalling of structure the reader can still identify the harmony between various parts of the text.

According to Hoey:

The Preview member may contain no clues that it is part of a relation with a subsequent Detail member, or it may contain a clue in the form of listing, the extreme form of the latter being enumeration, which normally demands Detail to follow (Hoey, 1983: 138).



In the organisation of Sections 3 and 4, the clue in the Preview member (s17.3 in Section 3 and s31.4 in Section 4) of the Preview-Detail pair is the nominal group. For s17.3, it is “a variety of factors...” which is picked up by the list of subheadings:

- 3.1. Developmental factors
- 3.2. L2 input
- 3.3. Motivational and affective factors
- 3.4. Social factors
- 3.5. Incomplete learning

While the word ‘factors’ is repeated in 3.1, 3.3, and 3.4, in 3.2 and 3.5, it is implied rather than stated. In s31.4, the clue is “testable hypotheses” which is picked up in subsequent sentences such as in “One hypothesis that could be tested” (s32.1), “A related hypothesis” (s34.1); and by the concluding sentence:

s40.(1) Neither of the two broad ‘cognitive’ hypotheses just outlined has been adequately tested to date, but both could be tested in a series of focused experiments comparing adults to children.

In all the Detail members, the term ‘hypothesis’ including its post-modification ‘that could be tested’ are repeated.

Although the paper itself has been seen to be divided into functional stages signalled by different kinds of evaluation (whether process or product), overall the paper is still very complex to categorise. The fact that key evaluations in the text - for example, the opening sentence of the text, the conclusion in the introduction (s8.1) and that of the whole text (Paragraph 41) - express a dual purpose by giving equal importance to both process and product means that the paper can only be described as a combination of both. This dual purpose in the body of the paper is expressed by the concluding paragraph:

s41.(2) The conclusion is reached that the CPH represents an assumption regarding inherent differences between L2 learners of different ages, rather than a testable hypothesis concerning the nature of speech learning.

s41.(4) It was further concluded that the CPH, while it represents an idea which is perhaps 'good to think', may in the long run impede progress in the field of L2 speech learning because it makes certain hypotheses which can be tested appear unwarranted.

The conclusions in s41.2 and s41.4 above are treated as independent of each other.

This is signalled by a repetition of the term 'conclusion' and the fact that s41.4 is expressed as independent by 'further'. The implication of this dual purpose for the reader is that in this text one would expect all sorts of evaluations going on at the same time - Usefulness, Control, Significance and Certainty - and that all are of equal dominance in the text.

#### **6.4 Are There Alternative Patterns in the ARA?**

The analyses and discussions of selected articles have so far suggested that the majority of articles follow the Problem-Solution pattern. However, from the selected data, there are certain articles which cannot be easily classified as Problem-Solution using the same criteria discussed in this chapter. The majority of such articles are from History where, out of 50 papers, 26 in many ways deviate from the Problem-Solution pattern. Text ST6.17 will be used here to illustrate this deviation.

ST6.17: H1: Labour or Conservative: Does it matter in Anglo-American Relations (see Appendix 2D for a complete text).

The title of the text is very important and suggestive in that it is in question form. As has already been argued in the previous text, the question suggests Problem since it

implies the need for an answer. Even before reading the text itself, the reader is already positioned to expect a Response to the question.

The paper is divided into 56 paragraphs without any subtitles (e.g. Introduction, conclusion, etc.). In terms of the content, the paper is a recount of historical events and not a discussion of the research proper (i.e. methods or findings) in the same way as it has been the case with the texts analysed above in which the Process-Product distinction has been used as the basis for the identification of the Problem-Solution elements of the texts. The opening paragraph of the paper illustrates this point.

s1.(1) In the political tradition of the Western liberal democracies, both moral convention and prudence dictate that one state should not interfere by either comment or action in the internal political affairs of another. (2) Respect for the individual, and by extension for an independent nation-state, has much to do with the moral aspect of this, especially when one is dealing with a properly elected democratic government. (3) The values of free government and individualism necessarily complement each other. (4) Both demand the kind of respect which will allow their unique integrity to remain intact. (5) The prudential grounds for avoiding involvement in the domestic affairs of another state, for example by expressing a clear preference for one political party over another, are twofold. First, by doing so a state invites retaliation of a kind. (7) Secondly, bilateral affairs may be rendered more difficult if the party for which a preference has been expressed does not gain power.

In the criteria which have been used so far to identify elements of the Problem-Solution pattern, this paragraph could be seen as Situation in that it provides the setting for the whole paper. However, as the text develops, it becomes difficult if not impossible to identify other elements - for example, there is no explicit statement of Problem or Response, which have been very important in the decision of whether a text is process or product-oriented. This is different from the History text, ST6.11 above, in which 'very little is known' (s1.1) is an explicit statement of Problematic Situation. What is immediately noticeable about the present text is that its focus is on the topic under

discussion - the 'aboutness' of the paper and not on the research involved in the making of the paper itself. For instance, there is no mention of data, methodology or indeed any aspect of the investigation procedure. This means that the evaluation here is predominantly TOE and not ROE. For its evaluation, the paper uses highly vivid descriptions of historical events as in the following stretch:

s9.(1) For a while Mr. Kinnock, the Labour leader, behaved more prudently than Reagan and declined to comment on this obviously partisan statement, but the temptation was too great and in the end he even suggested that the Conservatives had prompted Reagan to make his remarks. (2) This drew from Mrs Thatcher a riposte defending the President, which was laudable in its loyalty to their mutual friendship, but of questionable validity regarding conventions of what is normally permissible in such situations.

In this stretch for example, attributes are given to entities such as Mr Kinnock's behaviour which is described in terms such as **prudently**, Mr. Reagan's statement as **obviously partisan**, while Mrs. Thatcher's response is termed a *riposte* and is described as **laudable** but of **questionable validity**. The EEs and AVs here are those of the TOE type. The problem with this text is that the model of analysis used so far in the identification of the Problem-Solution pattern has been based on ROE and not TOE. Applying the same model to the text therefore would demand the use of other set of criteria for identifying the Problem-Solution elements, and hence it would mean a different analytical framework from the one used for this study.

Although the evaluation in the present text is predominantly TOE, there are instances of ROE which come in at certain stages of the text. The following is a good example:

s49.(1) One of the most sinister aspects of the Wilson period has recently come to light during the so-called Spy-Catcher Affair, with allegations from the British and American personnel that Wilson was a Soviet agent. Such allegations are quite preposterous, but James Angleton, Chief of CIA counter-intelligence at the time, and Peter Wright, a senior British intelligence officer, were party to them. Whether they had any real impact on the quality of Anglo-American relations *it is difficult to assess*, but they were undoubtedly potentially dangerous and what is more, *it is difficult to believe* that even Peter Wright (author of the book *Spy-*

*Catcher*) paranoia could extend to making similar accusations against a Conservative Prime Minister.

This switch from TOE to ROE signalled by 'it is difficult to assess' and 'it is difficult to believe' shows the need for the writer's intervention by expressing a point of view about the content, the indication that even within a clearly storytelling recount of historical events there is still a need for the 'I-You' communication between the writer and the reader (compare Sinclair's (1985) features of plane-change - from the autonomous to the interactive plane through reporting).

Although the argument here is that the Problem-Solution pattern does not seem to be applicable in this text, this has implications for reconstruction of meaning in ARAs. If one takes the element Problem, for instance, it would appear that in the 26 articles the option taken is that of focusing on the topic instead of talking about the research. However, if one takes the view that the ARA is written to fill a 'gap' in knowledge, it appears that in History it is not always necessary to explicitly state the 'gap' - the Problem is probably understood even if it is not explicitly spelt out as in other disciplines.

The difference between the Problem-Solution pattern option (as in the Fox paper) or the present predominantly TOE text implies two options in writing History, both of which are conventionally acceptable - focusing on the research aspect of History, which I will refer to as 'talking about' History or focusing on the content and leaving the research aspect implicit, which I refer to as 'doing' History. The differences between 'talking about' and 'doing' History can be explained by reference to rhetorical studies

in History (e.g. Baudel, 1980; Hughes, 1964; Gay 1974; Struever, 1985; Nelson and McCloskey, 1987). Many researchers on the rhetoric and writing of History see the discipline as both an art and a science. They argue that this dual nature determines the writing of History itself. Among others, Hughes (1964) and Baudel (1980) look at the different approaches to the writing of History - the traditional storytelling function (History as an art, or 'doing' History) and the contemporary analytic methods (History as a science , or 'talking about' History), what Baudel (1980) calls two kinds of History - the narrative and analytic history. The differences in writing History therefore reflect the two approaches. However, the researchers argue that the advent of contemporary history meant a movement from the traditional storytelling nature of History to scientifically-inclined writings. Hughes and Baudel argue that a dilemma for the writer of contemporary History is to move along with the modern methods of natural science while preserving the traditional pre-science identity. In Hughes' (1964) words:

the historian's supreme technical virtuosity lies in his fusing the new method of social and psychological analysis with his traditional storytelling function. If he can keep the "how" and the "why" moving steadily alongside each other ...then he is a writer who understands his business well (Hughes, 1964: 77).

According to Baudel, contemporary history can be seen as a synthesiser of the social or human science in that it seems to treat topics related to the neighbouring social science disciplines such as economics, sociology, anthropology, and linguistics - and situating these within the study of time (Baudel, 1980: 69). The changes in topic resulted in the change in methods of investigation and thus a change in the rhetoric of History to incorporate the new methods.

The two ways of writing History - 'doing' and 'talking about' History - demonstrated by the Fox (ST6.11 and ST6.15) and Dobson's (ST6.17) articles above - illustrate two main ways of indicating the Gap in the knowledge in History. While in both cases the gap is accepted, it is, however, not always explicitly stated. In the first case, exemplified by those articles which conform to the Problem-Solution pattern (e.g. the Fox paper), the gap is related as being either in our sources or in conflicting possible interpretations, in which case the focus is likely to be on research. Alternatively, the gap may be simply in our knowledge of what happened (e.g. the Dobson paper) - in this case an accurate record of the events fill that gap.

### **6.5 A Three-Dimensional Viewpoint Interpretation of a Sample of Text**

As has been argued in this chapter in particular, in order to understand the overall evaluation of the text, it is important to see choices made from each of the three dimensions within the context of other choices made from the other two dimensions. Thus in order to interpret the point that the writer is making in a text, it is necessary for the reader to know, for example, the source and strength of the claim, and the kind of value being assigned as well as being aware of how the evaluation is expressed in the language.

For most of this chapter, I have been working at a fairly general level in order to be able to show the movement of evaluation through whole papers. However, it will be useful to conclude the discussion in this chapter by illustrating in detail how the choices from the three dimensions can be looked at together clause-by-clause for the correct

interpretation of what is going on in the text. For this type of analysis, I will use a short stretch of text from the CPH text (AL40) on which an overall analysis has already been done (see Section 6.3.3): this will allow me to situate the clause-by-clause choices within the context of the evaluation in the paper as a whole. The section that I will be focusing on is paragraph 13, reproduced here for convenience:

s13.(1) Probably the most important evidence offered by Lenneberg (1976) in support of a critical period was that children, unlike adults, are capable of complete recovery from certain types of aphasia as the result of shifting language functions from the dominant to the non-dominant hemisphere after a trauma has occurred. (2) However, Snow (1986; see also Snow and Hoefnagel-Höhle 1982) has reviewed more recent evidence suggesting that complete recovery from aphasia does not occur, even in young children. (3) There has been controversy regarding the age at which cerebral lateralization reaches completion. (4) Arguments have been advanced that it occurs at the age of five or at the age of twelve. (5) Both of these ages have, as a result, been proposed as marking the end of a critical period for speech learning. (6) However, evidence reviewed by Studdert-Kennedy (1984) and Snow (1986) suggests that hemispheric specialization for the kinds of sequential processing important to speech production is evident at birth. (7) In any case, it has never been clearly established that lateralization per se would impair language learning by either hemisphere (Oyama, 1982a). (8) Moreover, a recent dichotic listening experiment casts doubt on the assumption that degree of lateralization (as assessed by the magnitude of the right-ear advantage) is related to L2 proficiency (Schouten et al. 1985).

The paragraph comes in the section of the paper entitled 'Arguments against the CPH'.

In this section, the writer is going through the 'many good reasons' (s9.1) for questioning the validity of the CPH. Paragraph 13 deals with issues relating to cerebral lateralisation, and is constructed in a way which reflects the organisation of the paper as a whole: it begins with stating an argument in favour of the CPH and then proceeds to show why the argument is of dubious validity (cf. the analysis of the introduction to the paper in 6.3.3).

As has already been seen, the CPH text is an argumentative text whose main purpose is to discuss and evaluate alternative explanations of certain phenomena. This means that the EEs are primarily propositions as opposed to, for example, an experimental



research paper in which the majority of the EEs might well be experimental procedures. To handle the type of analysis that I wish to undertake here, therefore, it is useful to begin by extracting from the text the propositions being argued about (i.e. evaluated). This involves modifying the text in some cases to separate the propositions from the evaluative stretches. Figure 6.10 below shows a list of the propositions (labelled P1 to P7). It should be mentioned that s13.3 has no separate proposition to be evaluated since it has a different function in the discourse - it is primarily metadiscoursal and can be seen as introducing a new topic in the ongoing discourse of the paragraph (this is illustrated in Table 6.3). The discourse markers showing logical relations between the propositions are included, since they relate both to the propositional content and to the evaluative frame in which that content is presented.

From Figure 6.10, it is noticeable that the propositions are primarily non-evaluative in terms of ROE. Explicit evaluation only occurs in P5 in which *hemispheric specialization* is said to be **important** and **evident** - these relate to significance and certainty, respectively. It is also worth noting that with the exception of P6 in which there is the use of modalisation 'would' (which can be seen as hedging of certainty), the propositions are basically categorical. The evaluation in the paragraph is essentially going on in the framing or matrix clauses, as is illustrated in Table 6.3 on page 298.

SENTENCE		PROPOSITION
s13.1	P[roposition]1	children, unlike adults , are capable of complete recovery from certain types of aphasia as the result of shifting language functions from the dominant to the non-dominant atmosphere after a trauma has occurred.
s13.2	P2	HOWEVER complete recovery from aphasia does not occur, even in young children.
s13.4	P3	[cerebral lateralization] occurs at the age of five or at the age of twelve.
s13.5	P4	both of these ages mark the end of the critical period for speech learning.
s13.6	P5	HOWEVER hemispheric specialization for the kinds of sequential processing important to speech production is evident at birth.
s13.7	P6	IN ANY CASE lateralization per se would [not] impair language learning by either hemisphere.
S13.8	P7	MOREOVER degree of lateralization (as assessed by the magnitude of the right-ear advantage) is [not] related to L2 proficiency.

Figure 6.10: A sequential list of propositions at a stage in the CPH text.

Let us first look at the evaluation in the text proposition by proposition - bearing in mind the overall evaluative context ('Arguments against the CPH') to which we will return later.

In s13.1 the writer begins by evaluating the *evidence* offered by Lenneberg. This is positively evaluated in terms of its significance in research - it is **the most important**

*evidence*. Although the evaluation is sourceless, the degree of writer responsibility is downgraded through the modality ‘probably’ indicating the lack of absolute commitment to the truth of the proposition being advanced. This may be interpreted as the writer defending his own claim against the possibility that others (including Lenneberg) might not agree that this is the ‘most important’ evidence. The proposition itself, which constitutes the evidence, is attributed to a specific source but is presented as positively evaluated for certainty (it is *evidence*). The proposition therefore appears within a double evaluative frame, the first relating to the place of the proposition in the arguments (**most important**), and the second to its certainty status. Another proposition (2) is introduced in s13.2 through the contrastive however which signals a counter-argument. This counter-argument is that which has been reviewed by Snow, and is evaluated by the writer as **more recent evidence**. Here the writer, although evaluating it positively as **recent**, still detaches himself from it both through attributing it to someone else and choosing the neutral verb **suggest** to report it, thereby signalling that its validity is only a possibility and not absolute certainty.

The next sentence s13.3 does not have a proposition in it, which is the reason for its absence from Figure 6.10. It appears to have a different function: it can be seen as having a metadiscoursal role in that it is an advance label which introduces a new topic - that of different views about the age at which cerebral lateralization reaches completion. These views are expressed in P3, P4 and P5. The evaluation is averred here rather than attributed: this can be seen as a function of the statement’s role as metadiscourse. The term **controversy** suggests lack of consensus and therefore expresses negative certainty. In P3, the source for the proposition is not specified, but it

is attributed; in addition, the writer calls the findings arguments and not facts - thus the proposition that cerebral lateralization occurs between the age of 5 and 12 is not yet accepted knowledge. The evaluation here can therefore be seen as relating to certainty but it is left open and hence the writer detaches himself from the proposition. The next sentence carries this lack of definite certainty further by suggesting that the ages mentioned in s13.4 are 'proposed'. Here we know that a proposal is not a fact even though it is positive in the sense that it might be proved right or wrong, and therefore the evaluation here is still that of certainty but the writer's attitude remains neutral, a further signal of writer detachment. Again, no specific source is identified but the proposition is attributed away from the writer.

CLAUSE ID.	EVALUATIVE CLAUSE	SOURCE + MODIFICATION	CATEGORY + POLE OF VALUE
s13.1	- Probably the most important evidence is P1  - Lenneberg offered evidence [= P1] in support of a critical period	None + Probable  Specified Other + Categorical	Significance (+)  Certainty (+)
s13.2	- Snow (1986...) has reviewed more recent evidence  - evidence suggest[s] that P2	None + Categorical  Other(s) + Possible	Certainty (+)  Certainty (Neutral)
s13.3	There has been controversy [with regard to the age of cerebral lateralization completion]	None + Categorical	Certainty (-)
s13.4	- Arguments have been advanced that P3	Other(s) + Possible	Certainty (Neutral)
s13.5	- [it has] been proposed [that] P4	Non-Specified + Possible	Certainty (Neutral)
s13.6	- Studdert-Kennedy (1984) and Snow reviewed evidence  - evidence...suggests that P5	None + Categorical  Other(s) + Possible	Certainty (Neutral)  Certainty (Neutral)
s13.7	it has never been clearly established that P6 (Oyama, 1982a).	None (+ Supportive Attribution) + Known	Certainty (-)
s13.8	a recent dichotic experiment casts doubt... (Schouten et al. 1985)  [people have made] the assumption that P7	None (+ Supportive Attribution) + Categorical  Other(s) + Possible	Certainty (-)  Certainty (Neutral)

Table 6.3: A Three-Dimensional Analysis of a stage in the CPH text

The next sentence s13.6 is introduced by a contrastive marker however which suggests yet another introduction of an alternative proposition. Here the proposition advanced is evidence reviewed by Studdert-Kennedy and Snow which suggests that ‘hemispheric specialization is evident at birth’, thus contradicting the propositions in s13.4 and s13.5. Even here the writer still leaves his options open in that the evidence is said to **suggest** this, indicating possibility and not fact. It is noticeable that there is a kind of small-scale pattern emerging, by which propositions with which the writer disagrees (P1, P3, P4) are directly attributed to others (not necessarily specified), whereas propositions with which he agrees (P2, P5) are presented in the frame of a categorical report of research actions of others (‘reviewing evidence’) before the propositions comprising the ‘evidence’ are presented as attributed to the evidence rather than directly to the researchers carrying out the review.

An important transition in the nature of the evaluation begins in s13.7 where there is a shift from attribution to averral with the use of Supportive Attribution. In this sentence and also in s13.8, the writer comes up with strong expressions of negative certainty while at the same time providing the source of his evaluation in the form of parenthetical, supportive attributions. In s13.7 there is negative evaluation of certainty signalled by ‘*it has never been clearly established*’ and in s13.8 ‘*a recent dichotic experiment casts doubt*’. Thus **recent** is positive evaluation of the *experiment* but the main evaluation here is that of negative certainty because the experiment does not support the proposition that ‘degree of lateralization...is related to L2 proficiency’, which is further labelled an *assumption* suggesting that the proposition is not yet acceptable as scientific fact.

If we now look at the movement of evaluation through the paragraph in context, it is clear that there is a repeated switch from propositions which are to be negatively evaluated to propositions which are to be positively evaluated. However, this is not done in a simple way ('X wrongly says ... but the truth in fact is ...'), but through a subtle interplay of different signals. The first derives from the context: the title of the section warns the reader that any proposition in support of the CPH is being introduced at best concessively, and will be followed by a counter-proposition. This means that the clause-level evaluation can appear to be neutral or even positive for much of the time. There are small differences in the way that agreed and contested propositions in s13.1 - s13.6 are attributed to other sources, which reflect the discourse-level evaluation; but it is only as the paragraph moves to its conclusion that the writer shifts towards overtly negative evaluation for which he takes full responsibility (with other sources mentioned only as supportive authorities). The effect of this delaying of explicit negative evaluation is to give the impression of even-handedness and a solid, impartial basis for the final evaluation.

It is worth noting that all the evaluation has related to certainty except the first AV (**most important**). This evaluation of significance serves a special role in the paragraph: by establishing the evidence in favour of the CPH as significant (for its proponents), the writer indicates to the reader why it is worth contesting. The contestation is carried out in terms of certainty; the fact that the evidence is significant makes the negative evaluation of it in terms of certainty more damning for the CPH. Thus the initial evaluation of significance, given with almost full acceptance of

responsibility by the writer, acts to relate the discussion at a metadiscoursal level to the general aims of the paper at this point.

## **6.6 Conclusion**

In this chapter, I have attempted to bring together the three dimensions of evaluation in the analysis of whole texts. This three-dimensional analysis has been used to explore the ways in which the three dimensions work together to highlight the main purpose of the text. The analysis and discussion in this chapter have not only indicated the complexity of the phenomenon of evaluation but have also supported the approach to the analysis of evaluation through the three perspectives proposed in this study.

## CHAPTER 7

### CONCLUSION

#### **7.1 Introduction**

Part of the conclusion to this study has been covered by Chapter 6 through the three-dimensional study of samples of whole text in order to explore the cumulative development of evaluation towards an overall purpose of the text. In the chapter, evaluation has been shown to contribute to the organisation and patterning - signalling elements of the Problem-Solution pattern which has been seen as the main model of patterning the ARA. I do not wish to re-examine these findings in the present chapter as they have been reasonably dealt with in the relevant chapter.

In this chapter, instead, I intend to summarise the work done on evaluation in this thesis with the intention of exploring its contribution to the work that has already been done on written discourse as interactive, particularly that on evaluation. I start by summarising the overall approach to the study of evaluation as presented in this thesis - the major assumptions and analyses as well as the main findings of the investigation. Secondly, I recapitulate some of the important theories of written discourse as interactive which have contributed to the present study - the notion of multifunctionality in Halliday's systemic theory and Sinclair's model of discourse structure, Hoey's Problem-Solution pattern and the ideological (and genre-based) approach to the ARA. Thirdly, I explore the theoretical implications of the present study for some of the above theories of discourse. Finally, I look at pedagogical



implications of the study and at the same time make some recommendations for future research.

## 7.2 The Study of Evaluation

One of the main points raised by this thesis is that of the complex nature of evaluation which is evident in the various definitions and perceptions about its realization as has been discussed in Chapter 2. On the one hand, evaluation is commonly seen as an expression of personal opinion, attitude or point of view based on the evaluator's beliefs and assumptions about the proposition advanced (e.g. Simpson, 1993). In this approach alone, there is a diversity of opinion about how attitude is expressed in language: attitude as 'good' or 'bad' signalled through attitudinal lexis (e.g. Cruse, 1986) and deviant grammar (e.g. Labov, 1977, Hunt and Vipond, 1986); attitude as modality signalled by expressions of probability and obligation (the narrow view of modality as in Halliday, 1985a); and attitude as a combination of modality and 'good' or 'bad' - the broad view of modality expressed in Biber and Finegan's concept of *stance* which forms the basis of Hunston's (1989) approach, and my own approach to evaluation as discussed in this thesis.

On the other hand, the phenomenon of evaluation has been defined from an ideologically (and genre) based point of view in which it is seen as an expression of the value system of a particular ideology, the view shared by many researchers in sociological studies of science (e.g. Latour and Woolgar, 1979). Since the present research is based on the ARA as a specialised genre of scientific writing, this

ideological view of evaluation has been found to be equally crucial in the study of evaluation.

This dual-nature of evaluation in itself can be used to explain the difficulty of any attempt to restrict evaluation to any single classificatory system. At present, there does not seem to be a systematic way of identifying evaluation as a linguistic category to distinguish it from non-evaluation. For instance, if, on the one hand, evaluation is seen as an expression of a personal point of view then every sentence in the text is evaluative in one way or the other since every syntagmatic (as well as paradigmatic) choice made by the writer reflects a point of view. As Stubbs (1996) points out “Because one way is selected (often unconsciously), it follows that utterances always encode a point of view” (Stubbs, 1996: 197). This view is shared by systemic linguists who see language as a system of choices (Martin, 1992); dialogical studies also emphasise that text construction is motivated by the intention to mean (Sinclair, 1985). If, on the other hand, evaluation is an expression of the value-system of a particular genre, the problem of identification remains unresolved since, as argued by Hunston, “If evaluation is an assignment to a value-system, then again no choice by the writer is neutral with regard to an ideological *mind-set*” (Hunston, 1989: 356).

Rather than attempting to relegate evaluation to any individual system as a linguistic category, I have in this study taken Hunston’s (1989) approach to evaluation which proposes seeing “a whole text as a single realization of evaluation” (Hunston, 1989: 356). From this view, the purpose of the research article is to realize certain goals:

those set by the writer of the article as well as those which are imposed on the writer by the demands of the genre (what Hunston calls institutional goals). Evaluation from this perspective is based on the achievement or non-achievement of those goals. The former is good while the latter is bad. The approach to evaluation proposed in this study is based on the underlying assumption that the ARA is a knowledge-bearing genre. Through the ARA, the writer-researcher initiates or responds to an ongoing scientific-academic debate and (s)he does this by presenting knowledge claims in an argumentative manner in order to persuade the reader (a community of researchers) to accept not only his/her findings but also his/her assessment of such findings.

Using a basically descriptive approach, I have proposed three dimensions of evaluation which I have analysed from three different analytical frameworks. Before revisiting the actual dimensions themselves, it worth pointing out that in my study, I distinguish between two kinds of evaluation based on the function of the evaluation in the ARA - research-oriented evaluation (ROE) and topic-oriented evaluation (TOE). The ROE-TOE distinction is based on the assumption that the research paper has two main functions - simply reporting the phenomena in the natural world and negotiating the interpretation of such phenomena. Interpretation is what has been referred to as the construction of knowledge (i.e. scientific facts and claims). Thus while the truth of the existence of the phenomena in the natural world cannot usually be challenged, the interpretation or value of such truth is negotiable. In a research paper TOE and ROE evaluate different entities - the former evaluates events, states, people and things in the natural world whereas the latter evaluates entities more specifically associated with the research world, i.e. methods, findings, ideas, and so

on. From this perspective, therefore negotiation between the writer and other researchers takes place within ROE and not TOE. Two examples from a History article (H2) below are used as a reminder of the ROE-TOE distinction.

(1). The *result* I have found is around 15 maternal deaths per 1000 births, which **corresponds well** with Schofield's national findings. (ROE)

(2). Until this **revolution** in obstetric methods, **obstructed labours** usually entailed the **death** of a child, and posed much greater **risks** to the mother than did live births. (TOE)

While in the first example, the evaluation **corresponds well** evaluates a research entity *result*, in the second example the evaluation is not that of research entities - for example, **obstructed** evaluates an entity in the real world (i.e. *labours*) and therefore it is of the TOE type (see Chapter 4 for a detailed discussion of ROE and TOE). Because my study focuses on the role of evaluation as expressing the purpose of the article, my findings in this study have been derived exclusively from ROE and not TOE. It is from ROE that the three dimensions of evaluation proposed in this study have been derived.

The first dimension - writer responsibility - involves interaction between the writer (in this case the researcher) and the reader (a community of researchers) particularly in negotiating statements from the point of view of 'factuality' as defined by Almeida (1992):

factual statements are considered to express true facts about the world if these facts have been accepted as part of a culture's or society's knowledge base, i.e., what is commonly considered to be a fact in this sociocultural grouping. Methodologically, this theoretical position links our perception to what constitutes a fact to our understanding of the epistemological assumptions that pervade a culture (Almeida, 1992: 237).

The factuality (or externality) of a statement is evaluated by the writer through choices from source and modification of certainty. Thus a non-sourced categorical assertion is higher on the factuality cline than a sourced modalised statement (compare with Latour and Woolgar's, 1979, classification of claims along the cline of facticity and Hunston's, 1989, concept of *status*). One of the assumptions in this study is that the higher the factuality of a claim, the higher the degree of writer responsibility for that claim; conversely, the lower the level of the claim, the lower is the degree of writer responsibility.

To recapitulate what I mean by writer responsibility in this study, it is useful to compare it with a similar category by Hunston - that of *status*. While for both studies the terms refer to basically the same phenomenon, the studies differ in terms of purpose and emphasis. To Hunston, the term *status* refers to what she calls the "thingness" assigned to a proposition or information - examples are an *assumption*, a *speculation* or a *proposal* (see Hunston, 1989: Chapter 4) - which is measured along the certainty-uncertainty parameter based on three intersecting variables - writer activity, whether or not the statement refers to knowledge or non-knowledge claim, and whether or not it is categorical or modified. In my study, I examine the same thing from a different angle - from the point of view of writer-reader negotiation of statements made in the text. From the perspective of source, I focus on whether or not the writer is accepting responsibility for the validity of the proposition advanced by the text. I suggest that by averring a statement, (s)he is accepting primary responsibility whereas by attributing it the responsibility lies with the cited source. The actual degree of responsibility is however dependent on a combination of source

and choices from other systems such as the lexicogrammar. Through choices from modification of certainty, on the other hand, the writer may be indicating the level of his/her own degree of certainty about the truth of the proposition or may be admitting that the point being made at the time is controversial and therefore requires a cautious approach: this caution may be signalled through choices of modality (or hedging) such as 'perhaps' or through a combination of source and modality such as in 'In my opinion' or 'I believe that' (see Chapter 3 for the analysis of writer responsibility). In short, the difference between my approach and Hunston's is that while she is focusing on the statement itself, I am focusing on why the writer is making such a statement and how (s)he anticipates challenges to such a statement by assigning either source or modification (or both) to it. To illustrate writer-reader negotiation through responsibility, we can take the point made in this study as well as by several writers on the rhetorical structure of the ARA - that of a heavy concentration of modalised or hedged statements as one moves towards the end of the text - i.e. in discussion and conclusion sections (see Hunston, 1989). In my study, I see this as an indication of the writer's conscious choice based on the awareness that as one gets away from objectivity of accessible facts, (s)he is more likely to be challenged for claims being advanced and thus needs to negotiate the acceptance of his/her own value judgements through signals of certainty and personal intervention, which leads to the use of conventionally accepted forms of 'fuzzy' language (see Channell, 1994). In other words, I see the writer's choice of source and modification of certainty as motivated by the need to persuade others to accept his/her point of view. The writer-reader based analysis of facticity of propositions explains the use of the term writer responsibility as opposed to Hunston's status.

The second dimension - the parameters of value - involves both the type of entities to which value is assigned and the type of values assigned to those entities (the EEs and AVs, respectively). The interpretation of this dimension is not directly linguistic but is based on the knowledge about the value-system of that genre (in the present study, the ARA) in which interaction takes place. It is thus closely linked to ideological (and genre) conventions as has been seen in this study in the discussion on the ideology of science in Chapter 2. Basing my analysis on the ideology of the ARA, I have used common occurrences of the type of EEs (whether process or product) and AVs to suggest a simple categorisation of the parameters of value of the ARA - and hence I proposed the parameters Usefulness, Significance, Control and Certainty - which characterise the genre. Of course, lexical expressions might differ - e.g. **important** and **interesting** may express the same parameter of value (e.g. significance) depending on their grammatical realizations - for instance both terms express significance if their EE is packaged in the that-clause, for example, 'It is important that...' and 'It is interesting that...' (see Chapter 4 on relevant examples). I have also shown that the four parameters can be grouped under general categories of Worthiness and Fixedness on the basis of their different manifestations according to the EEs to which they are attached.

The third dimension - the textualisation of value - involves the realization of the first two dimensions in the language of the text. This dimension has been analysed in terms of the related concepts of Scope and Harmony. On the one hand, Scope is related to the organisational aspects of the text in which evaluation plays a part. One of the main features of Scope discussed in this study is that of labelling - advance and

retrospective labelling - the former prospecting what is to come in the text whereas the latter encapsulates what has already passed in the text. It has been argued in Chapter 6, however, that labelling is not the only feature of Scope: contextual (or rhetorical) features such as a question in the title might predict or prospect the Response to come later in the paper and therefore the scope of the question may be seen as extending over the whole paper. Scope has also been shown to signal boundaries between/among information units in the text - and hence it has a text structuring function. Harmony, on the other hand, relates to the point-by-point coherence of the text. Unlike Scope, it shows how various parts of the text fit together. Given that a text normally consists of conflicting evaluations and yet still retain its coherence, the study indicates that different evaluation harmonies may run through a text, but need to arrive at a resolution at key points - for example, at the end of a section or at transition points within the text. Thus in a text a particular kind of harmony is associated with a change of section even though at that point Scope may not necessarily be explicitly signalled.

While I do not want to go into a detailed analysis of the relationship between Scope and Harmony, which has been done in Chapter 5, it will be useful to summarise very briefly the relationship by using an extract (paragraphs 2 to 6) from the Discussion section of a Psychology text (see Appendix 2E for a complete section). The text is a research article based on the experiment to test the hypothesis that the right hemisphere of the brain mediates the reading of some patients with acquired dyslexia. The paper is based on several experiments done on JG, a pure alexia patient



whose reading ability is tested using the Transcranial Magnetic Stimulation (TMS) on the right hemisphere.

The main point of this section is set up by the opening sentence of Paragraph 2 through advance labelling. The relationship between this sentence and the rest of the text can be illustrated by Figure 7.1 below (note that in this diagram, the ring represents Scope whereas the line joining the rings represent Harmony; the largest ring reflects the largest scope in the text).

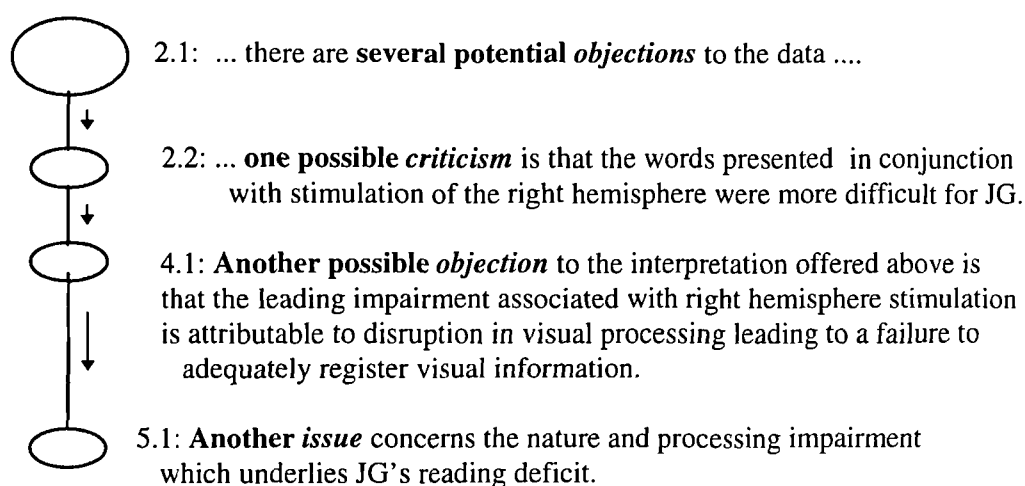


Figure 7.1: An illustration of the structuring of Paragraphs 2 to 6 on the basis of scope

The above diagram illustrates the chunking of text into several units of information which is first set up in s2.1 through advance labelling 'there are several objections', which predicts a list and/or discussion of the '**objections**' mentioned. This prediction is fulfilled by the enumeration of the objections in s2.2, s4.1 and s5.1 as illustrated in Figure 7.1 above. Although the sentences s2.2, s4.1 and s5.1 create separate boundaries of information units, they are related in terms of meaning, hence they are harmonious. First of all, the harmony can be seen in the labels themselves which

introduce the sections. While s2.1 sets the main harmony through the label *objections*, the sections are referred to in synonymous terms as highlighted in the illustration above. For example in s2.2 the first unit referred to as *criticism*, in s4.1 the term *objection* is repeated; whereas s.5.1 prefers a general term *issue*.

There are however, other signals of harmony between and among information units in this section of the text. I would like to illustrate the interrelationship between scope and harmony by looking at Paragraph 4 of the Discussion section.

4 (1) Another **possible objection** to the interpretation offered above is that *the reading impairment associated with right hemisphere stimulation is attributable to disruption of early visual processing*. (2) *Several lines of evidence argue against this possibility*. (3a) First it should be noted that *the omissions or failures to respond to stimuli were never encountered*; (3b) as this type of error is observed with TMS-induced visual deficits (Amassian et al., 1989), *the absence of these errors in this experiment suggests that the reading deficit observed with the right hemisphere stimulation was not attributable to a disruption of visual feature registration or integration*. (4) Second, the similarity between the errors profiles observed in Experiments 1, 2A and 2B suggests *that the reading disruption was not attributable to a visual deficit*; in light of the lateral placement of this stimulating coil, one might expect that the lateral or temporal portions of the visual field would be most likely to be adversely affected by the TMS. (5a) If this were so, one might expect stimulation of the right hemisphere to be associated with impaired registration and identification of the initial letters of the stimulus; (3b) as previously noted, however, under all conditions, including right hemisphere stimulation, visual errors tended to involve the end of the word. (6) Last, although introspective reports may be misleading, *it is noteworthy that JG as well as controls explicitly denied that TMS induced visual loss*.

The opening sentence s4.1 can be seen as what has traditionally been regarded as the topic sentence for the paragraph. Its relationship with the rest of the paragraph is however that of Contrast. For instance while in the sentence the main claim is that ‘the reading impairment ... **is attributable to disruption of early visual processing**’ the rest of the paragraph negates this. The negation is first set up by s4.2 ‘several lines of evidence **argue against this possibility**’ where *possibility* is an encapsulation of the proposition in s4.1. The sentence s4.2 is an advance label which provides harmony for the rest of the paragraph by positioning the reader to expect a

list of the lines of evidence denying the suggestion in s4.1. The lines of evidence introduced in s4.2 are listed numerically - 'first'(s4.3), 'second' (s4.4) and 'last' (s4.6). In addition to listing, the contrastive relationship is carried over by the negation '**not attributable**' (see the underlined sections of the text in s4.3a, s4.3b and s4.4). While there is conflicting evaluation between the opening sentence and the rest of the sentences in the paragraph, the last sentence s4.6 which is introduced by 'it is noteworthy' restates the negation of the proposition in s4.1: it can be seen as resolution of the harmony for the whole paragraph and thus marking the closure of the information unit represented by the paragraph.

The discussion indicates that while scope focuses on the 'packaging' of the text into various units of information, the evaluation carried in the signals of scope (e.g. labels) simultaneously provides the harmony for the text over which it has scope. Based on the analysis above, the interdependent concepts scope and harmony can be related to Halliday and Hasan's (1976) concepts of structure and texture - while scope has a structural function, for instance marking the boundaries between/among information units, harmony brings the units together and thus maintains the texture of the text.

Having summarised the position of the present study on evaluation, it is important to stand back and look again at some of the major theories/approaches on interaction in written discourse - Halliday's systemic theory, Sinclair's discourse structure, Hoey's Problem-Solution Pattern and the ideological/genre-based view of the ARA - with a view to examining, on the one hand, their contribution to the approach to evaluation

taken by the present study and, on the other hand, the implications of the present research to some of those theories.

### **7.3 Evaluation and Systemic Theory**

#### 7.3.1 Evaluation and the three Metafunctions

Having analysed evaluation from the perspective of three dimensions, it might seem tempting to equate these dimensions with Halliday's three metafunctions - interpersonal, the ideational and the textual functions. In order to avoid this temptation, it is important to reiterate the point made in this study - that evaluation is unambiguously interpersonal. However, to understand this interpersonal role of evaluation, it is necessary to look at the context within which evaluation takes place - this involves taking into consideration the contribution of the experiential and textual functions in shaping the evaluative environment of the text. I am not claiming in this study that the value system is either experiential or textual in terms of grammar: any attempt to relate the dimensions of value and the metafunctions from the lexicogrammatical perspective is bound to be controversial. I am instead looking at the relationship from the semantic or contextual viewpoint - exploring what aspects of the real world influence interpersonal choices, and consequently, evaluation.

#### 7.3.2 Evaluation and Context

According to Halliday's approach the three features of Context of Situation - Field, Tenor and Mode - determine each of the three metafunctions - Experiential, Interpersonal and Textual, respectively. This relationship is illustrated by Figure 7.2 overleaf.

CONTEXTUAL FEATURE	DETERMINES/ REFLECTS	METAFUNCTION	DETERMINES/ EXPRESSES	REALIZATION IN TEXT
Tenor	←→	Interpersonal	←→	Mood, Modality (or Evaluation)
Field	←→	Experiential	←→	Transitivity
Mode	←→	Textual	←→	Theme

Figure 7.2: Halliday's linear relationship between the features of Context of Situation and Metafunctions

This linear relationship between contextual features and metafunctions illustrated by Figure 7.2 above explains a common practice by many 'Hallidayan' linguists to associate evaluation with Tenor (e.g. Eggins, 1994). For these linguists, Tenor is not only responsible for all "the social role relationships played by interactants" (Eggins, 1994: 63) but also for the linguistic realizations of the interpersonal meanings.

While in this study, I do not question the influence of Tenor on interpersonal choices, particularly on evaluation, I however see evaluation as taking place within a context much broader than can be explained solely from the point of view of Tenor. Figure 7.3 (overleaf) illustrates how I see the relationship between evaluation and the Context of Situation.

According to Figure 7.3, evaluation occurs within a broader context in which the three features of Context of Situation - Tenor, Field and Mode - all play a part. First, the dimension of writer responsibility is related to Tenor in that it focuses on evaluation as central to writer-reader interaction: it deals with the negotiation of role relationships between interactants and these affect meaning choices in text. For example, the discussion on writer responsibility in Chapter 3 has shown how interpersonal considerations such as modesty, caution and politeness, can influence

ways of evaluating things, for example, the use of modality and hedging in argumentation and also the need to validate claims in the research paper by appealing to established knowledge through citations of source of information - and depending on the purpose of attribution, the choice of an appropriate reporting verb is important (see Thompson and Ye, 1991, on the evaluative meaning of reporting verbs).

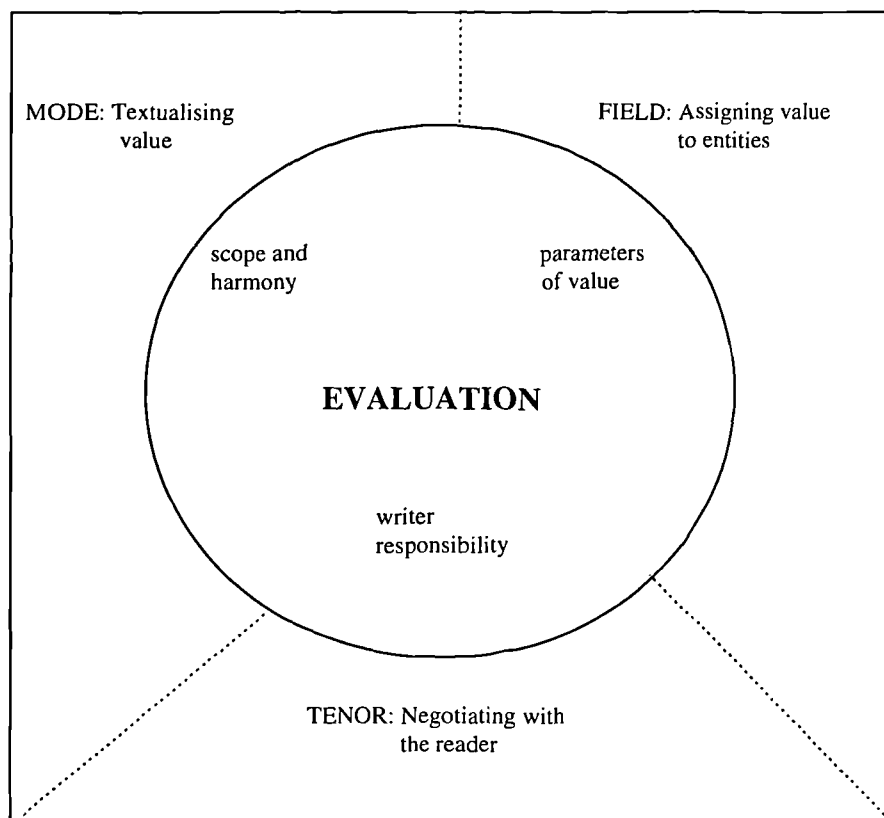


Figure 7.3: The context of evaluation from a systemic-functional perspective

Secondly, the evaluation is related to Field in the sense that the interpretations of the proposed parameters of value are dependent on the writer and reader awareness of the accepted value systems of a particular genre - the entities and the terms in which they are evaluated (according to my study, the EEs and the AVs). Thus in order to categorise evaluation under any of the parameters, the awareness of Field is crucial - the nature of the social action taking place. In the present genre, the social action

taking place is that of constructing knowledge by persuading the scientific-academic community to accept the findings of the research as well as the writer's own evaluation of such findings: the values available are those 'imposed' upon the writer by the conventions of the academic community and the rationale of the genre.

The third dimension - textualisation of value - is Mode dependent in the sense that it is concerned with the role of evaluation in discourse structure and texture. As the study has indicated, particularly in Chapters 5 and 6, there are preferred ways of expressing evaluation in the ARA: at lower levels, projections are typical explicit signalling of evaluation (see Hunston, 1993a). At the higher level, evaluation can be seen to have an important role in discourse organisation, for example, the 'general - specific - general' pattern as suggested by Hill et al. (1982) which is illustrated by the distribution of verb tense, voice and 'person' markers in the IMRD structure of the ARA (Heslot, 1981).

The discussion on the context of evaluation reaffirms the argument made earlier about the complexity of evaluation as a phenomenon which defies any attempts at systematic classification. It also supports one of the major assumptions made in this study (and supported by Hunston, 1989 and Francis, 1986) - that evaluation is context-specific. It is reasonable to assume that different contexts will call for different ways of evaluating (i.e. in terms of writer-reader negotiation of claims; entities and values; and the realization of evaluation in the language). This context-dependency of evaluation can also be explained in terms of the goals of the text - from the point of Tenor, the text is argumentative, purposeful and persuasive; in

terms of Field, the text expresses ideologically acceptable values; whereas in terms of Mode, the evaluation is made in particular ways acceptable in that genre. This view has important implications for Halliday's linear relationship between the Context of Situation and the metafunctions to which I now turn.

### 7.3.3 Implications for Halliday's Model of Analysis

While the thesis emphasises evaluation as an interpersonal feature, which is thus related to Tenor, in terms of its interactive role, the discussion above has shown that it is also related to Field in terms of being an expression of the value system of the genre, and related to Mode in terms of its realization in the language of the text. This view of evaluation as impacted on by all three features of Context of Situation may be illustrated in Figure 7.4 below.

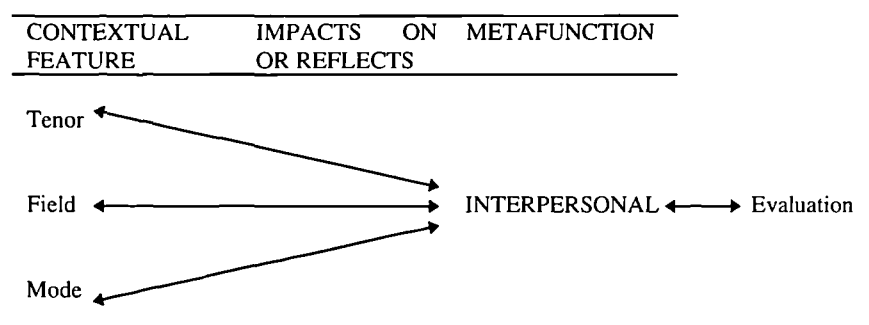


Figure 7.4: The impact of Context of Situation on the Interpersonal function (evaluation)

Figure 7.4 above shows how all the three features of Context of Situation affect interpersonal choices (and, consequently, evaluation). Although it is not my intention to discuss the relationship between the three contextual features and the two other metafunctions - experiential and textual - it may be useful to extend the relationship



illustrated in Figure 7.4 above to reinforce the general point about the complex relationship between context and metafunctions - see Figures 7.5 and 7.6 below.

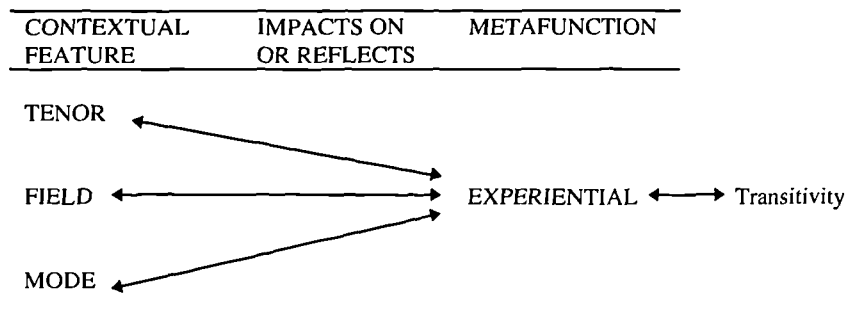


Figure 7.5: The impact of Context of Situation on the experiential metafunction

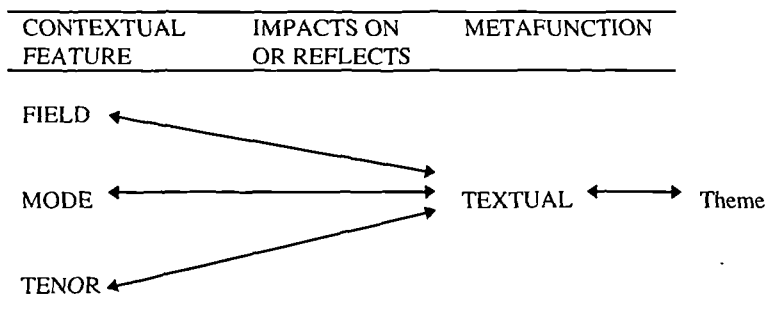


Figure 7.6: The impact of the Context of Situation on the textual metafunction

The implication of the above diagrams can be made even clearer by using a simple image of how the writer and reader approach the text. The writer, on the one hand, approaches writing within a particular context of which (s)he is aware when writing a paper. Within such context, (s)he negotiates with the reader - an aspect of Tenor. In this negotiation process, the writer has to select the type of values according to the Field in which the text is being written and also has to textualise the evaluation in ways in which are acceptable in that Field, hence the Mode dependency. The reader, on the other hand, starts from the text and the text itself constructs the Context of Situation. By responding to negotiation with the writer the reader is responding to

the Tenor aspect, by understanding the values (s)he sees the Field, and by understanding the way the text is written (s)he is responding to the Mode.

The argument above on how the three features of Context of Situation impact on the metafunctions as illustrated in Figures 7.4, 7.5 and 7.6 brings the three functions of language even closer together than has originally been thought. This explains why in many contexts the meanings between the metafunctions, particularly between the interpersonal and ideational/experiential functions tend to overlap. It is therefore not always easy to refer to exclusively interpersonal or experiential meanings of language. This problem of exclusiveness of meaning has been observed by many writers and there is evidence of emerging research which challenges the notion of tight boundaries between the metafunctions as has been suggested by Halliday. An example which was mentioned in Chapter 2 was that of Hunston's (1989) scepticism about Halliday's distinction between experiential and interpersonal epithets in which she argues that in many contexts the boundaries between the two tend to blur. Even though Halliday seems to emphasise the existence of boundaries between the metafunctions, in his analysis of a spoken discussion among an adult and three nine-year old schoolgirls, he finds many overlapping features across the metafunctions and admits that:

There are relatively few absolute clearcut categories in language; there are many tendencies, continuities, and overlaps. Many actual instances can be analyzed in two or more different ways, none of which can be ruled out as impossible..." (Halliday, 1985b: 54).

All in all the context of evaluation indicates that while evaluation is an interpersonal function, interpersonal choices in language are affected by all the features of the

different contexts in which they are used. In terms of Tenor the roles and relationship between the interactants, for example, a particular way of persuasion - choosing the level of the claim through source and modification of certainty; in terms of Field - evaluating the appropriate entities and using the acceptable terms (i.e. parameters of value); and in terms of Mode - whether and how evaluation should be explicitly stated.

#### **7.4 Revisiting some Theories of Written Discourse as Interaction**

Having explored the implications of this study for Hallidayan systemic theory, it is now worth looking very briefly at the contributions of some of the theories of discourse to the present study as this might help us see how the study fits in with current research on interaction in written discourse, and particularly, that on evaluation.

##### **7.4.1 Sinclair's Discourse Structure**

Sinclair's theory of discourse discussed in detail in Chapter 2 is mainly a theory of discourse structure motivated by interactive goals. Sinclair sees written text as purposeful and directional and its development as an accumulation of meanings working towards a specific goal. This view is used in the present study in which evaluation in a paper is seen as cumulative and working towards one main purpose. Sinclair's three-faceted theory of discourse organisation - planes of discourse, averral and attribution and encapsulation - has made an immense contribution to the analysis of the role of evaluation in text organisation and patterning described in this study.

First, in Chapter 3 on writer responsibility, the concepts of averral and attribution are used to differentiate between the evaluation made by the writer him/herself and that attributed to other voices in the text (compare Thompson's 1996b concept of voices in the text). Thus factual statements are typically averred whereas non-factual ones may be attributed. My approach to attribution can be seen as a refinement of Sinclair's model in that it suggests seeing attribution as a cline based on the writer's purpose and signalled in the grammar of the clause - not every attributed statement signals total avoidance of responsibility. For instance, a statement may be attributed to another source in order to support the present writer's claim or to refute the validity of the claim made by the cited source. In my study, I have proposed two basic kinds of Attribution - 'Attribution-Delegated' and 'Attribution-Detached'- the former referring to the writer's agreement with the cited source whereas the latter refers to the writer's disagreement with the source. The writer's involvement with or detachment from the cited proposition has been shown to be signalled by means such as the choice of a reporting verb - for example, 'found that' and 'pointed out' with reference to the source may signal involvement whereas 'claim', and 'speculate' may signal detachment from the cited proposition (see Thompson and Ye, 1991, on evaluation in reporting verbs); or other grammatical structures such as the as-clause - an example of this is 'As Sinclair argues...' in which the choice of the 'as' structure indicates the writer's agreement with Sinclair's argument (see Chapter 3 on attribution).

Another important contribution of Sinclair's theory is that of planes of discourse, particularly the concept of plane-change. According to the features of the interactive

plane, for example prediction, prospection and other interactive functions, this plane can be seen as metadiscoursal and having a text structuring function (Sinclair, 1981). Since the interactive plane emphasises language as negotiation between the writer and reader, evaluation (or at least ROE) has been seen in this study as based primarily on the interactive plane. One of the features of academic text (and it is not unique in this) is that plane-change may be made explicit, by 'pulling out' the evaluation into a separate clause, with 'it' representing the whole proposition following. For example in the sentence below from a History article (H20) "It is probably true that the 'political class' among the émigrés was more susceptible than ordinary citizens", the 'it' pronoun has pulled out the evaluation **probably true** on the interactive plane into a separate clause, and the pronoun represents the 'that-clause' that follows. In other words, this is a very clear case of language talking about itself - the proposition is 'packaged' so that it can be encapsulated in the pronoun 'it', which then forms part of a metadiscoursal, evaluative statement.

In Sinclair's dynamic model of discourse, the notion of *posture* described as "a movement from one state of affairs to another" (Sinclair, 1985: 15) is potentially useful in explaining the development/ movement of evaluation through the text. Sinclair describes successive sentences in the text as representing various postures. He argues also that posture is not necessarily realized by single sentences but can be realized by whole chunks of text (Sinclair, 1985). As the discourse develops, postures may change or be maintained. From the point of view of evaluation the notion of posture may be used to describe movement in the text from one evaluative position (stance) to another and thus account for the existence of conflicting evaluations in the

text. But it needs to be complemented by the idea of a 'temporary' posture based on the assumption that in some ways the reader knows that a posture is going to be negated or changed later in the text. The analysis in this study, especially that of evaluative patterning in Chapter 6, has indicated that when discussing current knowledge on the topic (i.e. summarising previous literature) at the beginning of the text, the writer normally evaluates this positively. However at this point in the text, the reader knows that the positive posture is only temporary and predicts negative evaluation to come - the indication of a 'gap' in the knowledge. An example of the first two paragraphs from a History text (H2) illustrate temporary posture:

1.(1) For the twentieth-century historian it is always open season on early modern attitudes. (2) Much has been published on such topics as the magical belief systems of early modern men and women; their lack of romantic love; and their indifference to children. (3) Such studies seem to suggest a radical difference between our own sensibilities and those of our early modern ancestors.

2. (1) The attitudes of women towards childbirth have often been approached within this framework. (2) A consensus has developed, according to which women in the seventeenth and eighteenth centuries were racked by fears of giving birth. (3) As we shall see in a moment, the historiography is actually more complex than this.

From the text above, one can see two main postures : the first posture is that from s1.1 to s2.2. Here the posture is that which can be seen as giving positive evaluation to previous research; while the second posture is that in s2.3 marked by the metadiscoursal phrase 'as we shall see in a moment' which introduces a 'gap' through '**much more complex**'. On seeing positive evaluation of previous research at the start of the text, the reader who is familiar with the conventional organisation of such texts knows that it is temporary (and concessive) and therefore expects a reversal of that posture somewhere in the text. Otherwise if the previous research was to be presented as having achieved everything, then there would have been no need for another research article in the first place. Thus postures may be presented and

removed to be replaced by other postures which keep on changing in the build-up to a final posture at the end of the text (see the analysis of the introduction of the CPH text in Chapter 6).

#### 7.4.2 The Problem-Solution Pattern

The study has used Hoey's (1979, 1983) Problem-Solution pattern as a practical way of exploring the semantic and rhetorical patterning of the ARA. Unlike in the original model where Hoey and Winter's clause-relations analysis is primarily used to offer a textual model of realization of the pattern, my approach has placed more emphasis on the conceptual pattern underlying the text itself. The use of this as a general pattern is based on the function of the ARA in research: the reason for research is the realisation of a 'gap' (Problem) and the purpose of the research paper is to 'fill' that gap (Response/Solution), and hence the ARA can be seen as a Problem-Solution text at the most general level.

In this approach, evaluative statements have still been used as signals of functions of the various stages of the text: for instance negative evaluation to signal Problem and positive evaluation to signal Response. Through the Problem-Solution model of analysis, discourse functions of different sections of the IMRD structure of the text have been explained and different mini-patterns have been identified: for instance, the Process-Product distinction and the Staged/Cumulative pattern in some of the Method sections (see Chapter 6).

The concept of Problem-Solution as the underlying pattern has been used to explain how readers are primed to interpret possibly conflicting signals: for example, they 'expect' a 'gap', so positive evaluation at the start of a paper is likely to be seen as temporary or not the main point - the negative evaluation will come along soon. It is also possible to relate Problem-Solution (more especially Solution) with goals of the text - the reader expects solutions to be suggested and evaluated.

Another important observation made from using the Problem-Solution pattern is that of differentiating between text types more especially based on differences of carrying out research in the four disciplines used as data sources. A good example is that of the 26 History articles which deviate from the common pattern mainly because of different ways of presenting a research paper in History. The mainly narrative History papers are not Problem-Solution in that their evaluation is basically TOE, which has not been used in the analysis of the three dimensions of evaluation proposed in the present study.

#### 7.4.3 The Research Article: Ideology and Genre

The ARA has been described in this study as a knowledge-bearing genre in which evaluation is both personal and ideologically-oriented. What the study has done in one sense is to reaffirm the argument by sociologists (e.g. Bazerman, 1984) and linguists (e.g. Hunston, 1989) that scientific fact is not objective: it is a product of a negotiated consensus among researchers based on whether acceptable theories, models and other research methods were used by the producer of the research article



as well on the researcher's interpretation and evaluation of his/her new information expressed in the researcher's knowledge claims.

On the other hand, the study has brought evaluation to the centre as an integral negotiating strategy for the construction of knowledge claims. The value-system of the ARA imposes on the writer the rules or conventions of what to evaluate as well as how to evaluate it. The establishment of simplified categories of evaluation in Chapter 4 - Worthiness and Fixedness which are further divided into Significance, Usefulness, Control and Certainty - enables us to identify what is judged as evaluative in the ARA which differentiates it from other genres. For instance, the categories of Worthiness and Fixedness indicate that the broad view of modality used to define evaluation in this study is appropriate in science: for instance Worthiness is related to the notion of 'good' or 'bad' whereas Fixedness is related to Certainty (the narrow view of modality). The fact that both are terms of evaluation in the ARA supports the view that good and bad and certainty are two sides of the same coin. As has already been argued in the study, given the goals of scientific investigation, certainty is good whereas lack of certainty is bad for research. This explains the reason for relating certainty to writer responsibility as well treating it as a separate parameter of value in its own right (see Chapter 4).

## **7.5 Pedagogical Implications**

After looking at the contributions of various theories of discourse to the present study, it is equally important to explore the possible contributions of the study to language teaching. Before going into pedagogical implications for the present study,

however, I should reiterate that originally the purpose of my study on evaluation was pedagogical. My initial purpose in carrying out this research was to investigate how the interpersonal function - and evaluation in particular - can help me in the teaching of reading and writing to students following an EAP course at the National University of Lesotho. This had been motivated by my recognition of problems faced by the students in writing academic essays, as well as writing project papers which are compulsory in the final (i.e. fourth) year in most of the disciplines. Talking to lecturers at various inter-faculty (and inter-departmental) meetings about the writing problems of the students, it struck me that most of the problems students have apart from grammatical ones could be put under the category of evaluation at least in the broad view of evaluation that has been taken in the present thesis (i.e. handling citations, and expressing one's own point of view, failure to persuade the reader, etc.). My initial ambition in this study was therefore to be able to design teaching materials which would address the problems shown. However, as my research progressed I was drawn away from this pedagogical goal by the awareness of the complexities of the phenomenon of evaluation which made me realise the importance of studying how evaluation works in text, without which knowledge designing materials for teaching evaluation would be an impossible task. The findings of my research therefore are as a whole not yet pedagogically applicable. However, given the emphasis of various studies that evaluation is an important phenomenon in the production (including interpretation) of text, it follows that the awareness of evaluation and its function in text is crucial for the teaching of EAP and ESP reading and writing. In this section, therefore, I intend to make suggestions about the potential usefulness of simplified versions of some of my findings (as well as those

derived from Hunston, 1989) for the development of writing and reading pedagogy in both EAP and ESP classrooms.

### 7.5.1 Writing Pedagogy

It is important, however, to note that there are already many pedagogical models based on various theories of interaction in which even though evaluation is not emphasised but is nevertheless subsumed. For example, cognitive studies in college composition writing such as those of Flower and Hayes (1981) have emphasised that a written text is an end-product of the decision-making processes which take place prior to writing. Examples of research in such studies are think-aloud protocols (Flower and Hayes, 1981) and pause-protocols by Matsuhashi (1982) in which writers have to say what they are doing in the process of writing, and it becomes clear that this involves a great deal of evaluation. A similar view has also been expressed by dialogical studies on writing (discussed in Chapter 2) in which text construction is seen to be motivated by interpersonal factors such as purpose and audience. One example of dialogical studies discussed in Section 7.4, is that of Sinclair in which the concepts of plane-change, averral and attribution, encapsulation and posture have been shown to play a crucial role in the study of evaluation and to have a pedagogical relevance by virtue of providing a descriptive framework of how the learners can actually look at each sentence or paragraph (or larger sections) as making an additional contribution to several meanings in the text and how these meanings work together in the build-up towards a global goal of the text.

Studies such as those mentioned above have resulted in a proliferation of pedagogically applicable models for the teaching of writing (and reading) in academic settings. Given the major work already going on in the teaching of writing, I suggest that evaluation could be used to reinforce such work. For instance, in the teaching of openings and closures of information units (i.e. relevance markers, prospection and encapsulation) suggested by Sinclair (1986, 1987), students should be sensitised to the role of evaluation in such structures. For example, in teaching paragraph writing, in which traditionally the emphasis has been on the role of the topic sentence, it would be useful to make students aware of the importance of signalling not just the 'content' to be presented but also a point of view in such a sentence - this could be extended to beginnings and closures of units as well as at transitional stages of the text. In these cases, the concepts of scope and harmony would have great potential usefulness.

In academic writing, specifically, learner-writers should be sensitised to features of the academic genre which according to Bartholomae (quoted in Hunston, 1989) is a set of 'peculiar ways of knowing, selecting, evaluating, reporting, considering and arguing' (Hunston, 1989: 375). It is this 'peculiarity' of features of academic writing which should be emphasised in order to help orient students' writing towards the model emphasised by sociological studies in science as well as genre-based research. For instance, learners should be made aware of the style acceptable in academic writing which distinguishes it from other genres, for example, literary texts. The students should be aware of the purpose of academic writing - the traditional emphasis on 'objective content' view of the ARA needs changing through emphasis

on the argumentative and persuasive nature of the genre as suggested by sociological studies of science. In this regard, the students should be made aware of the communicative goal in writing, the target audience and the latter's knowledge topic and aim the text to meet the writer's needs - they should therefore be sensitised to the important role of evaluation in this endeavour. Moreover, the learners should be made aware of the constraints of the genre and thus should make choices within the limits of what is acceptable in the genre.

The concept of acceptability in academic writing should be explained from the point of view of the expectations of the discourse community. One aspect of the study which could be used to guide the learner-writers would be that of the four parameters of value - students should be sensitised to the constraints guiding the options for making value judgements in academic writing. This approach could also be extended to the choice of appropriate reporting verbs such as those suggested in Thompson and Ye (1991), thus learning scholarly rules of handling citations in text.

### 7.5.2 Reading Pedagogy

From the perspective of reading, the teachers should emphasise the importance of understanding not only the content but also the angle from which the writer wants that content to be interpreted and judged. It is important for EAP and ESP teachers to use professional academic writing - the academic research articles - to sensitise students to models of well-written academic texts. These texts can be used in the teaching of various types of reading comprehension. For instance, the teachers could emphasise features such as evaluative nominalisations, the use of impersonal constructions, and reporting verbs, as well as the overall development of the text such

as the hour-glass model of Hill et al. (1982) discussed in Chapter 2, at the same time emphasising the motivation for such choices. This would particularly be useful in L2 situations in which the 'myth' of strict objectivity in academic writing in which a complete removal of the writer's personality from the text is still prevalent.

In order to improve the students' awareness of the role of evaluation, students should be made to look for the purpose of the paper and therefore the ROE-TOE distinction could be used as an important step towards identifying the point of view as opposed to the general content of the text. That is, if the student cannot assign an instance of evaluation to the ROE categories, such evaluation will probably be TOE, and thus not directly relevant to the overall purpose of the research paper. If and when students are able to separate the content from the purpose of the text, the next step is to use this to improve their own writing skills in the EAP classroom and beyond.

The identification of ROE could also be used to help students handle conflicting evaluations. Here the concepts of Scope and Harmony can be used as guidance. For instance, in a situation where there are conflicting evaluations, there will be a need to identify the dominant evaluation which is very likely to be carried either through organisational features such as advance labelling or encapsulated by retrospective labels or suggested by various signals of harmony such as meaning relations between and among clauses or various sections of the text - for example, markers of contrast such as the hypothetical-real relations, general-specific relations and so on which are very useful in solving ambiguities resulting from conflicting evaluations in text.

## 7.6 Implications for Further Research

The study has emphasised that evaluation is genre (or register) specific. Following on the work of Swales (1990) and the approach by Hunston (1989), it can be suggested that the characteristic nature of evaluation in the ARA based on categories of Worthiness and Fixedness differentiates the ARA from other genres. The implication of this therefore is that similar analyses could be carried out in other genres in order to find out how the value-systems of those genres work. Pioneering work in this area can be seen in Hunston (1993a) who compares texts in academic and non-academic settings in relation to the use of projections in evaluation.

Secondly, the work done in Chapter 6 on the conceptual framework of Problem-Solution Pattern (Hoey, 1983) used to explain the major pattern of the ARA has indicated variations between texts probably influenced by different ways of doing research in different disciplines. For instance the fact that many History texts could not fit in the Problem-Solution model does not in any way undermine their status as effective ARAs but shows that they are different. The evaluation in these papers is predominantly TOE. Since the analysis in this study is based on ROE, it would be interesting for future studies to do similar work on the role of TOE in ARAs.

Finally, since the motivation for conducting the present research was pedagogical in that it was a result of the awareness of the problems faced by the students at the National University of Lesotho in academic reading and writing, there is a need to develop the study further with the hope that some of its findings might eventually be

used in the designing of materials for the teaching of reading and writing in EAP and ESP in L2 situations like my own.

### **7.7 Summary**

The study of evaluation in this thesis can be seen to have done two main things - to reaffirm some of the major assumptions on evaluation and the ARA derived from established research and to extend those assumptions in certain aspects. First, the study has re-emphasised the major argument advanced by both sociological and linguistic research on the ARA - that scientific knowledge which is mainly communicated in the forum of the ARA is not as objective as traditional studies have made us believe. While it is acknowledged that scientific activity is based on objective and empirical research on natural phenomena, the findings of such research are encoded in language and presented as new information by the researcher-writer to other researchers in the field who can either accept or reject it. In order to ensure acceptance the writer has to show that acceptable scientific theories and practices have been followed as well as persuading the researchers to accept new information in the form of knowledge claims. Evaluation is an integral part of this persuasion.

The second reaffirmation is that of evaluation as context-specific as suggested by Francis (1986, 1994) and Hunston (1989, 1993a, 1994). The analysis in this study about the dual nature of evaluation has shown how as an interpersonal phenomenon it is impacted on by the three features of the Context of Situation and therefore we assume that different contexts determine different ways of evaluation. This assumption implies that the value-system of one genre is likely to differ from that of other genres. For example, while moral goodness (e.g. observing and adhering to



conversational rules such as turntaking) is a desirable value in conversation, in the ARA, different values are emphasised (e.g. relevance). Pioneering work on the differences of evaluation among genres is that of Hunston (1993a) on the study of evaluation in academic and non-academic texts.

The main contribution of the present work on evaluation is that of the ROE-TOE distinction in text which is potentially useful in differentiating between the writer-reader negotiation and the general content of the text. Through this distinction I have been able to look at what things are assigned value as well as the terms in which that value is expressed in the ARA. The simple categories of Significance, Usefulness, Certainty and Control can be used as a guide to the value system of the ARA - the good and bad in research terms - as opposed to good and bad in the world outside research.

Evaluation as has been seen is a very broad and complex field and as such there is still need for extensive research both from the theoretical and practical standpoints. As has already been said my immediate concern is to translate my work into pedagogical use for my benefit as well as others in my teaching situation - this is still a long way from being achieved.

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APPENDIX 1: RESEARCH ARTICLES USED AS  
DATA (NB. ARRANGED BY SUBJECT)

**APPENDIX 1A: Applied Linguistics Research Articles (AL)**

- AL1: Owen, C. 1993. 'Corpus-based grammar and the Heineken effect: lexico-grammatical description for language learners'. *Applied Linguistics* 14(2): 167 - 187.
- AL2: Schumann, J.H. 1993. 'Some problems with falsification: an illustration from SLA research'. *Applied Linguistics* 14(3): 295 - 306.
- AL3: Brown, G. 1989. 'Making sense: the interaction of linguistic expression and contextual information'. *Applied Linguistics* 10(1): 97 - 108.
- AL 4: Gregg, K.R. 1993. 'Taking explanations seriously; or, let a couple of flowers bloom'. *Applied Linguistics* 14(3): 276 - 293.
- AL5: Johnson, D.M. 1992. 'Compliments and politeness in peer-review texts'. *Applied Linguistics* 13(1): 51 - 69.
- AL6: Alderson, J.C. and D. Wall. 1993. 'Does washback exist?'. *Applied Linguistics* 14(2): 115 - 129.
- AL7: Edge, J. 1989. 'Ablocutionary value: on the application of language teaching to linguistics'. *Applied Linguistics* 10(4): 407 - 417.
- AL8: Fulcher, G. 1989. 'Cohesion and coherence in theory and reading research'. *Journal of Research in Reading* 12(2): 146 - 163.
- AL9: Low, G. 1996. 'Intensifiers and hedges in questionnaire items, and the lexical invisibility hypothesis'. *Applied Linguistics* 17(1): 1 - 37.
- AL10: Williams, E. 'Reading in two languages at year five in African primary schools'. *Applied Linguistics* 17(2): 182 - 209.
- AL11: Holliday, A. 1996. 'Developing a sociological imagination: Expanding ethnography in interactional English language education'. *Applied Linguistics* 17(2): 234 - 255.
- AL12: Fleming, D. 1996. 'Professional-client discourse in design: variation in accounts of social roles and material artefacts by designers and clients'. *Text* 16(2): 133 - 160.
- AL13: Chambliss, M.J. and R. Garner. 1996. 'Do adults change their minds after reading persuasive text?'. *Written Communication* 13(3): 291 - 313.

- AL14: Coupland, J. 1996. 'Dating advertisements: discourse of the commodified self'. *Discourse and Society* 7(2): 187 - 207.
- AL15: Maleville, M. 1995. 'Ideological values in the workplace: denials of the unstated assertions in English, French and Dutch conversations'. *Text* 15(4): 503 - 530.
- AL16: Hamilton, H.E. 1996. 'Intratextuality, intertextuality, and the construction of identity as patient in Alzheimer's disease'. *Text* 16(1): 61 - 90.
- AL17: Flower, L. 1996. 'Negotiating the meaning of difference'. *Written Communication* 13(1): 44 - 92.
- AL18: Nystrand, M. and J. Wiemelt. 1991. 'When is a text explicit? Formalist and dialogical conceptions'. *Text* 11(1): 25 - 41.
- AL19: Gosden, H. 1993. 'Discourse function of subject in scientific research articles'. *Applied Linguistics* 14(1): 56 - 75.
- AL20: Kalman, J. 'Joint composition: the collaborative letter writing of a scribe and his client in Mexico'. *Written Communication* 13(2): 190 - 220.
- AL21: Hutchby, I. 1996. 'Power in discourse: the case of arguments on a British talk radio show'. *Discourse and Society* 7(4): 481 - 497.
- AL22: Medway, P. 1996. 'Virtual and material buildings: construction and constructivism in architecture and writing'. *Written Communication* 13(2): 473 - 514.
- AL23: Morrison, A. and A. Lowe. 1996. 'A discourse of disillusionment: letters to the editor in two Zimbabwean magazines 10 years after independence'. *Discourse and Society* 7(1): 39 - 75.
- AL24: Cameron, D. and J. Coates. 1985. 'Some problems in the sociolinguistic explanation of sex differences'. *Language and communication* 5 (3) : 143 -151.
- AL25: Francis, G. and J. Sinclair. 1994. 'I bet he drinks Carling Black Label: a riposte to Owen on corpus grammar'. *Applied Linguistics* 15(2): 190 - 200.
- AL26: Clark, C. P. Drew and T. Pinch. 1994. 'Managing customer 'objections' during real-life sales negotiation'. *Discourse and Society* 5 (4) : 437 - 462.
- AL27: Williams, J. 1990. 'Another look at yes/no questions: native speakers and non-native speakers'. *Applied Linguistics* 11(2): 159 - 182.
- AL28: Coupland, N. J. Coupland and H. Giles. 1989. 'Telling age in later life: identity and face implications' *Text* 9(2) : 129-151.

- AL29: Winter, E. 1994. 'Clause relations as information structure: two basic text structures in English'. In M. Coulthard (ed.), *Advances in Written Text Analysis*. London: Routledge.
- AL30: Nida, E.A. 1992. 'Sociolinguistic implications of academic writing'. *Language and Society* 21(3): 477 - 485.
- AL31: Merin, A. 1991. 'Imperatives: linguistics vs. philosophy'. *Linguistics* 29(4): 669 - 702.
- AL32: Graber, D.A. 1994. 'The infotainment quotient in routine television news: a director's perspective'. *Discourse and Society* 5(4): 483 - 508.
- AL33: Thompson, S. 1994. 'Aspects of cohesion in monologue'. *Applied Linguistics* 15(1): 58 - 76.
- AL34: Toolan, M. 1985. 'Analysing fictional dialogue'. *Language and Communication* 5(3): 193 - 206.
- AL35: Tyler, A. 1994. 'The role of syntactic structure in discourse structure: signalling logical and prominence relations'. *Applied Linguistics* 15(3): 243 - 262.
- AL36: Kennedy, C. 1988. 'Evaluation of the management of change in ELT projects'. *Applied Linguistics* 19(4): 329 - 342.
- AL37: Flowerdew, J. 1992. 'Definitions in science lectures'. *Applied Linguistics* 13(2): 202 - 221.
- AL38: Taylor, D. S. 1988. 'The meaning and use of the term 'competence' in linguistics and applied linguistics'. *Applied Linguistics* 9(2): 148 - 167.
- AL39: Coupland, J. , J.D. Robinson and N. Coupland. 1994. 'Frame negotiation in doctor-elderly patient consultations'. *Discourse and Society* 5(1): 89 - 124.
- AL40: Fledge, J.L. 1987. 'A critical period for learning to pronounce foreign languages?'. *Applied Linguistics* 8(2): 162 - 177.
- AL41: Kellerman, S. 1992. 'I see what you mean': the role of kinesic behaviour in listening, and implications for foreign and second language learning'. *Applied Linguistics* 13(3): 239 - 258.
- AL42: Billig, M. 1988. 'Common-places of the British Royal Family: a rhetorical analysis of plain and argumentative sense'. *Text* 8(3): 191 - 217.
- AL43: Fries, P.H. 1992. 'Lexico-grammatical patterns and the interpretation of texts'. *Discourse Processes* 15: 73 - 91.



- AL44: Potter, J. and M. Wetherell. 1988. 'Accomplishing attitudes: fact and evaluation in racist discourse'. *Text* 8(1/2) : 51 - 68.
- AL45: Dijk Van, T.A. 1992. 'Discourse and the denial of nazism'. *Discourse and Society* 3(1): 87 - 118.
- AL46: Mann, W.C. and S.A. Thompson. 1988. 'Rhetorical structure theory: toward a functional theory of text organisation'. *Text* 8(3): 243 - 281.
- AL47: Potter, J. and M. Wetherell. 1989. 'Fragmented ideologies: accounts of educational failure and positive discrimination'. *Text* 9(2): 175 - 190.
- AL48: Ranney, S. 1992. 'Learning a new script: an exploration of sociolinguistic competence'. *Applied Linguistics* 13(1): 25 - 50.
- AL49: Tyler, A. and C. Davies. 1990. 'Cross-linguistic communication missteps'. *Text* 10(4): 385 - 411.
- AL50: Skehan, P. 1996. 'A framework for the implementation of task-based instruction'. *Applied Linguistics* 17(1): 38 - 62.

## APPENDIX 1B: Economics Research Articles (EC)

- EC1: Gregg, P. and R. Naylor. 1993. 'An inter-establishment study of union recognition and membership in Great Britain'. *The Manchester School of Economics LXI*(4): 367 - 385.
- EC2: Smith, C.E. 1992. 'Stock markets and the exchange rate: a multi-country approach'. *Journal of Macroeconomics* 14(4): 607 - 629.
- EC3: Jones, L.D. 1993. 'Defining judgements and exercise of the default option in home mortgage loans'. *Journal of Law and Economics XXXVI*: 115 - 138.
- EC4: Lipford, J., R.E. McCormick and R.D. Tollison. 1993. 'Preaching matters'. *Journal of Economic Behaviour and Organisation* 21(3): 235 - 250.
- EC5: Danaher, P.S. 1992. 'A Markov-Chain model for multivariate magazine-exposure distributions'. *Journal of Business and Economic Statistics* 10(4): 401 - 407.
- EC6: Thompson, P.A. and T. Nordewier. 1992. 'Estimating the effects of consumer incentive programs on domestic automobile sales'. *Journal of Business and Economic Statistics* 10(4): 409 - 417.
- EC7: Westaway, P. and S. Wren-Lewis. 1993. 'Is there a case for the MTFs?'. *The Manchester School of Economics and Social Studies* 61(3): 227 - 247.
- EC8: Fielding, D. 1994. 'Money demand in four African countries'. *Journal of Economic Studies* 21(2): 2 - 21.
- EC9: Madden, D. 1996. 'Marginal tax reform and the specification of consumer demand systems'. *Oxford Economic Papers* 48(4): 556 - 567.
- EC10: Smith, J. and C. Murphy. 1994. 'Macroeconomic fluctuations in the Australian Economy'. *The Economics Record* 70(209): 133 - 148.
- EC11: Smith, G.W. 1996. 'Method-of-moments measurement of UK business cycles'. *Oxford Economic Papers* 48(4): 568 - 583.
- EC12: Frank, J. and E. Smith. 1996. 'Seniority seating at the Royal Opera House'. *Oxford Economic Papers* 48(3): 492 - 498.
- EC13: Wilson, P. 1994. 'Tourism earnings and instability in Singapore 1972 - 88'. *Journal of Economics Studies* 21(1): 21 - 30.
- EC14: Wolfson, M.H. 1996. 'Irving Fisher's debit-deflation theory: its relevance to current conditions'. *Cambridge Journal of Economics* 20(3): 315- 334.
- EC15: Smith, V.L. and J.M. Walker. 1993. 'Monetary rewards and decision cost in experimental economics'. *Economic Inquiry XXXI*(2): 245 - 261.

- EC16: Dutt, A.K. 1996. 'Southern primary exports, technological change and uneven development'. *Cambridge Journal of Economics* 20(1): 73 - 89.
- EC17: Frank, J. and J.M. Malcolmson. 1994. 'Trade unions and seniority employment rule'. *European Economic Review* 38(2): 213 - 234.
- EC18: Hart, P.E. 1996. 'Accounting for the economic growth of firms in UK manufacturing since 1973'. *Cambridge Journal of Economics* 20(2): 225 - 242.
- EC19: Helsley, R.W. and A. O'Sullivan. 1994. 'Altruistic voting and campaign contributions'. *Journal of Public Economics* 55: 107 - 119.
- EC20: Dorward, A. 1994. 'Form planning with resource uncertainty: a semi-sequential approach'. *European Review of Agricultural Economics* 21(2): 309 - 324.
- EC21: Shiller, R.J. 1995. 'Hedging inflation and income risks'. *The Manchester School Supplement* 63: 1- 21.
- EC22: Grossman, G.M. and A.B. Krueger. 1995. 'Economic growth and the environment'. *Quarterly Journal of Economics* CX(2): 353 - 377.
- EC23: Fox, C.R. and A. Tversky. 'Ambiguity aversion and comparative ignorance'. *Quarterly Journal of Economics* CX (3): 585 - 603.
- EC24: Young, A. 1995. 'The tyranny of numbers: confronting the statistical realities of the East Asian growth experience'. *Quarterly Journal of Economics* IX(3): 641 - 671.
- EC25: Manning, A. 1995. 'How do we know that wages are too high?'. *Quarterly Journal of Economics* CX(4): 1111 - 1125.
- EC26: Roberts, M.A. 1995. 'Keynes, the liquidity trap and the gold standard: a possible application'. *The Manchester School of Economics and Social Studies* LX III(1): 82 - 94.
- EC27: Bowles, P. and B. MacLean. 1996. 'Regional trading blocks: will East Asia be next?'. *Cambridge Journal of Economics* 20(4): 393 - 412.
- EC28: Fishman, A. 1996. 'Search with learning and price adjustment dynamics'. *The Quarterly Journal of Economics* CXI(1): 253 - 268.
- EC29: Levitt, S.D. 1996. 'The effect of prison population size on crime rates: evidence from prison overcrowding litigation'. *The Quarterly Journal of Economics* CXI(2): 319 - 352.

- EC30: Horn, H. H. Long and S. Lundgren. 1994. 'Competition, long run contracts and internal inefficiencies in firms'. *European Economic Review* 38(2): 213 - 234.
- EC31: Driver, C. 'Stagnation as a problem of transition: arguments and proposals'. *Cambridge Journal of Economics* 20(4): 553 - 564.
- EC32: Fischer, R.D. and P. Serra. 1996. 'Income inequality and choice of free trade in a model of intraindustry trade'. *The Quarterly Journal of Economics* CXI(1): 41 - 64.
- EC33: Cuthbertson, K. 1996. 'The expectations hypothesis of the terms structure: the UK interbank market'. *The Economic Journal* 106(436): 578 - 592.
- EC34: Bell, D.N.F. and R.W. Wright. 1996. 'The impact of a minimum wage on the wages of the low paid: evidence from the wage boards and councils'. *The Economic Journal* 106(436): 650 - 656.
- EC35: Levin, D. and J.L. Smith. 1996. 'Optimal reservation prices in auctions'. *The Economic Journal* 106(438): 1271 - 1283.
- EC36: Evans, J.L. 1995. 'The demand for money: hyperinflation of high inflation traps'. *The Manchester School Supplement* 63: 40 - 56.
- EC37: Anderson, S. P. and V. A. Ginsburgh. 1994. 'Price discrimination via second-hand markets'. *European Economic Review* 38(1): 23 - 44.
- EC38: Jones, D.R. and G.H. Makepeace. 1996. 'Equal opportunities: pay and promotion in an internal labour market'. *The Economic Journal* 106(435): 401 - 409.
- EC39: Rose, A. K. and L. E. O. Svensson. 1994. 'European exchange rate credibility before the fall'. *European Economic Review* 38(6): 1185-1216.
- EC40: Lund, M., P., H. Jacobsen and L. C. E. Hansen. 1993. 'Reducing non-allocative costs on Danish dairy farms: application of non-parametric methods'. *European Review of Agricultural Economics* 20(3): 327 - 342.
- EC41: Connor, J. M. 1994. 'Northern America as a precursor of changes in Western European food-purchasing patterns'. *European Review of Agricultural Economics* 21(2): 155 - 174.
- EC42: Nolan, P. 1996. 'Large firms and industrial reform in former planned economies: the case of China'. *Cambridge Journal of Economics* 20(1): 1 - 29.
- EC43: Burton, M. and T. Young. 1992. 'The structure of changing tastes for meat and fish in Great Britain'. *European Review of Agricultural Economics* 19(2): 165 - 180.

- EC44: Klein, B. 1996. 'Why hold-ups occur: the self-enforcing range of contractual relationships'. *Economic Inquiry* 34(3): 444 - 463.
- EC45: Holden, S. 1994. 'Wage bargaining and nominal rigidities'. *European Economic Review* 38(5): 1021 - 1040.
- EC46: Banley, J. E. R. Blundell and I. Preston. 1994. 'Life-cycle expenditure allocations and the consumption costs of children'. *European Economic Review* 38(7): 1391 - 1410.
- EC47: Palley, T. I. 1996. 'Inside debt, aggregate demand and the Cambridge theory of distribution'. *Cambridge Journal of Economics* 21(2): 465 - 474.
- EC48: Foreman, S. E. et al. 1996. 'Monopoly, monopsony and contestability in health insurance: a study of Buck Cross plans'. *Cambridge Journal of Economics* 20(3): 662 - 677.
- EC49: Alexander, C.O. and W. Lederman. 1996. 'Are Nash bargaining wage agreements unique?: an investigation into bargaining sets for firm-union negotiations'. *Oxford Economic Papers* 48(2): 242 - 253.
- EC50: Skully, D. W. 1992. 'Price discrimination and state trading: the case of US wheat'. *European Review of Agricultural Economics* 19(3): 313 - 330.

## APPENDIX 1C: History Research Articles (H)

- H1: Dobson, A.P. 1990. 'Labour or Conservative: Does it matter in Anglo-American relations?'. *Journal of Contemporary History* 25: 387 - 407.
- H2: Wilson, A. 1993. 'The perils of modern procreation: childbirth with or without fear?'. *British Journal of Eighteenth-Century Studies* 16(1): 1 - 15.
- H3: Dressler, S. 1994. 'Whose abolition? Popular pressure and the ending of the British slave trade'. *Past and Present* 143: 136 - 166.
- H4: Andrews, H.D. 1993. 'Thirty- four gold medallists: Nazi women remember the Kampfzeit'. *The Journal of the German Society* 11(3): 293 - 315.
- H5: Gray, J. 1993. 'Gender and plebeian culture in Ulster'. *Journal of Interdisciplinary History* XXIV(2): 251 - 270.
- H6: Hadley, D. M. 1996. 'Conquest, colonisation and the church: ecclesiastical organisation in the Dane law'. *Historical Research* 69(169): 109 - 128.
- H7: Lynn, J. A. 1996. 'The Evolution of army style in the Modern West'. *The International History Review* XVIII (3): 505 - 545.
- H8: Thatcher, I. D. 1996. 'Leon Trotsky in New York City'. *Historical Research* 69(169): 166 - 180.
- H9: Freeze, G. L. 1996. 'Subversive piety: religion and the political crisis in late imperial Russia'. *The Journal of Modern History* 68(2): 308 - 350.
- H10: Smith, T. B. 1996. 'Public assistance and labour supply in nineteenth-century Lyon'. *The Journal of Modern History* 68(11): 1 - 30.
- H11: McMahon, R. J. 1996. 'The illusion of invariability: American reassessments of the Soviet threat, 1955-1956'. *The International History Review* XVIII (3): 591 - 619.
- H12: Seidman, M. 1996. 'Individualism in Mediocrity during the Spanish Civil War'. *The Journal of the Modern History* 68(1): 63 - 83.
- H13: Booth, A. 1996. 'How long are light years in British politics: The Labour Party's economic ideas in the 1930s'. *Twentieth Century British History* 7(1): 1 - 28.
- H14: Coulson, C. 1996. 'Cultural realities and reappraisals in English castle-study'. *Journal of Medieval History* 22(2): 171 - 208.
- H15: Tax, E. 1996. 'Universal health care act self-help: paying for district nursing before the National Health Service'. *Twentieth Century British History* 7(1): 83-109.

- H16: Lucas, S. 1996. 'Campaigns of Truth: The Psychological strategy Board and American ideology, 1951-1953'. *The International History Review* XVIII (2): 279 - 303.
- H17: Edgerton, D. 1996. 'The 'white Heat' resisted: The British Government and technology in the 1960s'. *Twentieth Century British History* 7(11): 53 - 82.
- H18: Boone, M. 1996. 'State power and illicit sexuality: the persecution of sodomy in late medieval Bruges'. *Journal of Medieval History* 22(2): 135 - 153.
- H19: Cormack, W. S. 1996. 'Legitimate authority in revolution and war: the French navy in the West Indies, 1789-1793'. *The International History Review* VXVIII (1): 1 - 28.
- H20: McDermott, K. 1995. 'Stalinist terror in the Comintern: new perspectives'. *Journal of Contemporary History* 30: 111 - 130.
- H21: Fedorowich, K. and B. Moore. 1996. 'Co-belligerency and prisoners of war: Britain and Italy, 1943-1945'. *The International History Review* VXVIII (1): 28 - 47.
- H22: Walton, J. K. 1996. 'Leisure towns in wartime: the impact of the First World War in Blackpool and San Sebastian'. *Journal of Contemporary History* 31(4): 603 - 618.
- H23: English, R. 1996. 'The inborn state of things English: Ernie O'Malley and the Irish Revolution 1916-1923'. *Past and Present* 151: 174 - 199.
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- H26: Hurd, M. 1996. 'Education, morality, and the politics of class in Hamburg and Stockholm, 1870-1914'. *Journal of Contemporary History* 31(4): 619 - 650.
- H27: Strang, G. B. 1996. 'Once more into the breach: Britain's guarantee to Poland, March 1939'. *Journal of Contemporary History* 31(3): 721 - 752.
- H28: Harris, B. 1995. 'England's provincial newspapers and the Jacobite rebellion of 1745 - 1746'. *History: The Journal of the Historical Association* 80(258): 5 - 21.

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- H30: Hennessy, P. 1995. 'Searching for the 'Great Ghost': The palace, the premiership, the cabinet and the constitution in the post-war era'. *Journal of Contemporary History* 30: 211 - 231.
- H31: Smail, D. L. 1996. 'Common violence: vengeance and inquisition in fourteenth-century Marseille'. *Past and Present* 151: 28 - 59.
- H32: Thompson, N. 1994. 'Hobson and the Fabians: two roads to socialism in the 1920s'. *History of Political Economy* 26(2): 203 - 220.
- H33: Pettergrew, J. 1996. 'The Soldier's faith': turn-of-the-century memory of the civil war and the emergence of modern American nationalism'. *Journal of Contemporary History* 31(1): 49 - 73.
- H34: Fox, A. 1994. 'Ballads, libels and popular ridicule in Jacobean England'. *Past and Present* 145: 47 - 83.
- H35: Grayson, R. S. 1996. 'The British government and the Channel Tunnel, 1919-39'. *Journal of Contemporary History* 31(1): 125 - 144.
- H36: Daunton, M. J. 1996. 'Payment and participation: welfare and state-formation in Britain 1900-1951'. *Past and Present* 150: 169 - 216.
- H37: Marshall, A. 1996. 'Sir Joseph Williamson and the conduct of administration in Restoration England'. *Historical Research* 69(168): 18 - 41.
- H38: Brown, D. 1996. 'From cotton lord to landed aristocrat: the case of Sir George Philips Bart, 1766-1847'. *Historical Research* 69(168): 62 - 82.
- H39: Tone, J. L. 1996. 'Napoleon's uncongenial sea: guerrilla warfare in Navare during the Trimester War; 1808-14'. *European History Quarterly* 26(3): 355 - 382.
- H40: Rapp, D. 1996. 'The British Salvation Army, the early film industry and urban working-class adolescents, 1897-1987'. *Twentieth Century British History* 7(2): 157 - 188.
- H41: Lockett, D. A. 1996. 'Henry VII and the Lords Willoughby de Broke'. *Historical Research* 69(170): 254 - 265.
- H42: Smith, M. M. 1996. 'Time, slavery and plantation capitalism in the ante-bellum American South'. *Past and Present* 150: 142 - 168.



- H43: Russell, D. 1996. 'Sport and identity: the case of Yorkshire country cricket club, 1890-1939'. *Twentieth Century British History* 7(2): 206 - 520.
- H44: Myers, F. 1996. 'British trade unions and the end of conscription: the tripartite committee of 1950-56'. *Journal of Contemporary History* 31(3): 483 - 507.
- H45: Barker, H. 1996. 'Catering for provincial tastes: newspaper's readership and profit in late eighteenth-century England'. *Historical Research* 69(168): 42-61.
- H46: Roberts G. 1996. 'The Alliance that failed: Moscow and the Triple Alliance negotiations; 1939'. *European History Quarterly* 26(3): 383 - 414.
- H47: Andrews, G. R. 1996. 'Brazilian racial democracy, 1900-90: an American counterpoint'. *Journal of Contemporary History* 31(3): 483 - 507.
- H48: Wordie, R. 1996. 'A triumph of middle-class idealism: rural England and the Folk movement, 1850-1979'. *Twentieth Century British History* 7(2): 262 - 270.
- H49: Grayson, R.S. 1996. 'The British government, the Channel Tunnel and European unity, 1948-64'. *European History Quarterly* 26(3): 415 - 436.
- H50: Burke, J. M. and M. C. Jacob. 1996. 'French Freemasonry, women, and feminist scholarship'. *The Journal of Modern History* 68(13): 513 - 549.

## APPENDIX 1D: Psychology Research Articles (PSY)

- PSY1: Rabbitt, P. 1990. 'Applied cognitive gerontology: some problems, methodologies and data'. *Applied Cognitive Psychology* 4: 225 - 246.
- PSY2: Cates, K.L. and D.M. Messick. 1996. 'Frequentistic adverbs and measures of egocentric biases'. *European Journal of Social Psychology* 26(1): 155 - 161.
- PSY3: Clark, P. G. 1996. 'Communication between provider and patient: values, biography, and empowerment in clinical practice'. *Ageing and Society* 16 : 747 - 774.
- PSY4: McDonald-Miszczak, L. et al. 1996. 'Age differences in recall and predicting recall of action events and words'. *Journal of Gerontology: Psychological Sciences* 51B(2): 81 - 90.
- PSY5: Campbell, A. et al. 1996. 'Social representations of aggression: crossing the sex barrier'. *European Journal of Social Psychology* 26(1): 135 - 147.
- PSY6: McFadyen, R. 1996. 'Gender, status and 'powerless' speech of international students in lectures'. *British Journal of Social Psychology* 35(3): 353 - 367.
- PSY7: Clark, R.L. and N. Ogawa. 1996. 'Public attitudes and concerns about population ageing in Japan'. *Ageing and Society* 16(4): 443 - 465.
- PSY8: Macintyre, P.D. and C. Charos. 1996. 'Personality, attitudes, and affect as predictors of second language communication'. *Journal of Language and Social Psychology* 15(1): 3 - 26.
- PSY9: Orpen, C. 1995. 'The multifactorial Achievement Scale as a predictor of salary growth and motivation among middle-manages'. *Social Behaviour and Personality* 23(2): 159 - 162.
- PSY10: Weatherall, A. 1996. 'Language about women and men: an example from popular culture'. *Journal of Language and Social Psychology* 15(1): 59 - 75.
- PSY11: Muller, B. 1991. 'Group composition, salience and cognitive representations: the phenomenology of being in a group'. *Journal of Experimental Social Psychology* 27(4): 297 - 323.
- PSY12: Lord, C. G. et. al. 1991. 'Typicality effects in attitude - behaviour consistency: effects of category discrimination and category knowledge'. *Journal of Experimental Social Psychology* 27(6): 550 - 575.
- PSY13: Fleming, D. et al. 1996. 'Training - induced enhancement of insulin action in human skeletal muscle: the influence of ageing'. *Journal of Gerontology* 51A(4): 247 - 252.

- PSY14: Hayslip, B. et al. 1996. 'Employee age and perceptions of work in self-managing and traditional work groups'. *International Journal of Ageing and Human Development* 42(1): 21 - 41.
- PSY15: Turner, H.A. 1996. 'Determinants of perceived family support and conflict: life-course variations among the physically disabled'. *International Journal of Ageing and Human Development* 42(1): 21 - 41.
- PSY16: McGill, A. L. 1991. 'Conjunctive explanation: accounting for centres that differ from several names'. *Journal of Experimental Social Psychology* 27(6): 527 - 547.
- PSY17: Dutt, J. 1992. 'Education and authoritarianism among English-old Afrikaans-speaking white South Africans'. *The Journal of Social Psychology* 32(6): 701 - 708.
- PSY18: Hymes, R. W. and M. M. Akiyama 1991. 'Depression and self-enhancement among Japanese and American students'. *The Journal of Social Psychology* 31(3): 321 - 334.
- PSY19: Coslett, H.B. and N. Monsul. 1994. 'Reading with the right hemisphere: Evidence of transcranial magnetic stimulation'. *Brain and Language* 46: 198 - 211.
- PSY20: Reed, J. E. V. R. Payton. 1996. 'Constructing familiarity and managing the self: ways of adapting to life in nursing and residential homes for older people'. *Ageing and Society* 16(5): 543 - 560.
- PSY21 : Smith, E. R. 1991. 'Illusory correlation in a simulated exemplar-based memory'. *The Journal of Experimental Social Psychology* 27(2): 107 - 123.
- PSY22: Breckler, S. and E. C. Wiggins. 1991. 'Cognitive responses in persuasion: affective and evaluative determinants'. *The Journal of Experimental Social Psychology* 27(2): 180 - 200.
- PSY23: De Vries, B. and D. Watt. 1996. 'A lifetime of events: age and gender variations in the life story'. *International Journal of Ageing and Human Development* 42(2): 81 - 102.
- PSY24: Brown, M. and E. M. Hasser. 1996. 'Complexity of age-related change in skeletal muscle'. *Journal of Gerontology: Biological Sciences* 51A(2): 117 - 123.
- PSY25: Gilhooly, K.J. 1990. 'Cognitive psychology and medical diagnosis'. *Applied Cognitive Psychology* 4: 261 - 272.

- PSY26: Johnson, J. R. 1996. 'Risk factors associated with negative interactions between family caregivers and elderly care-receivers'. *International Journal of Ageing and Human Development* 43(1): 7 - 20.
- PSY27: Moreland, R. L. and S. R. Beach. 1992. 'Exposure effects in the classroom: the development of affinity among students'. *The Journal of Experimental Social Psychology* 28(3): 255 - 276.
- PSY28: Sheldon-Keller, A. et al. 1994. 'Attachment and assessment of blame in date rape scenarios'. *Social Behaviour and Personality* 22(4): 313 - 318.
- PSY29: Martin, R. 1996. 'Minority influence and argument generation'. *British Journal of Social Psychology* 35(1): 91 - 103.
- PSY30: Nemeth, C. and J. Rogers. 1996. 'Dissent and the search for information'. *British Journal of Social Psychology* 35(1): 179 - 199.
- PSY31: Paddock, J. R. and S. Nowicki. 1986. 'Paralanguage and the interpersonal impact of dysphasia: it's not what you say but how you say it'. *Social Behaviour and Personality* 14(1): 29 - 44.
- PSY32: David, B. and J. C. Turner. 1996. 'Studies in self-category solution and minority conversion: is being a member of the out-group an advantage?'. *British Journal of Social Psychology* 35(1): 179 - 199.
- PSY33: Thompson, M. C. et al. 1996. 'Growth hormone-relating hormone depletion in the female rat: similarities to ageing'. *Journal of Gerontology: Biological Sciences and Medical Sciences* 51A(1): 83- 101.
- PSY34: Port, R. W. et al. 1996. 'Prior instrumental conditioning improves spatial cognition and attenuates changes in hippocampal function in aged rats'. *Journal Gerontology: Biological Sciences and Medical Sciences* 51A(1): 17 - 20.
- PSY35: Keith, P. M., R. B. Schafer and E. Schafer. 1995. 'Wife-husband relationship and patterns of family distress'. *Social Behaviour and Personality* 23(2): 111 - 122.
- PSY36: Carlson, B. and J. A. Falkner. 1996. 'The regeneration of muscle grafts in young and old rats'. *Journal of Gerontology: Biological Sciences and Medical Sciences* 51A(1): 43 - 49.
- PSY37: Pendleton, N. et al. 1996. 'Correlates of tumour size, gender cell type, and metastasis of non-small cell lung cancer and age'. *Journal of Gerontology: Biological Sciences and Medical Sciences* 51A(1): 50 - 53.
- PSY38: Sheridan, M. R. 1988. 'Response programming, response production, and fractionated reaction time'. *Psychology Research* 46: 33 - 47.

- PSY39: Walker, A. J. et al. 1996. 'Amount of care given and caregiving satisfaction: a latent growth curve analysis'. *Journal of Gerontology: Psychological Sciences and Social Sciences* 51B(3): 130 - 142.
- PSY40: Cheston, R. 1996. 'Stories and metaphors: talking about the past in a psychotherapy group for people with dementia'. *Ageing and Society* 16(5): 579 - 602.
- PSY41: Roberts, S. et al. 1996. 'Effects of age on energy expenditure and substrate oxidation during experimental overfeeding in healthy men'. *Journal of Gerontology: Biological Sciences* 51A(2): 148 - 157.
- PSY42: Smith P. L. and N. A. Fouad. 1996. 'A test of a social cognitive model for middle school students: math and science'. *Journal of Cognitive Psychology* 43(3): 338-346.
- PSY43: Ellis, R. D. et al. 1996. 'Predicting age-related differences in usual information processing using a two-stage queuing model'. *Journal of Gerontology: Psychological Sciences and Social Sciences* 51B(3): 155-165.
- PSY44: Salthouse, T. A. 1996. 'Where in an ordered sequence of variables do independent age-related effects occur?'. *Journal of Gerontology: Psychological Sciences and Social Sciences* 51B(3): 166 - 178.
- PSY45: Silverman, H. and R. S. Mazzeo. 1996. 'Hormonal responses to maximal and submaximal exercise in trained and untrained men of various ages'. *Journal of Gerontology: Biological Sciences and Medical Sciences* 51A(1): 30 - 37.
- PSY46: Salthouse, T. A. 'Working memory as a processing resource in cognitive ageing'. *Developmental Review* 10(1): 11 - 124.
- PSY47: Waxman, S. R. and D. B. Markow. 1995. 'Words as invitations to form categories: evidence from 12 to 13-month-old infants'. *Cognitive Psychology* 29: 257 - 302.
- PSY48: Williams, J. N. 1994. 'The relationship between word meanings in the First and Second Language: evidence from a common, but restricted, semantic code'. *The European Journal of Cognitive Psychology* 6(2): 195 - 220.
- PSY49: Funnell, E. 1988. 'Response biases in oral reading: an account of the co-occurrence of surface dyslexia and semantics'. *The Quarterly Journal of Experimental Psychology* 49A (2): 417 - 446.

PSY50: Mckenzie, C. R. M. 1994. 'The accuracy of intuitive judgement strategies: covariation assessment and Bayesian inference'. *Cognitive Psychology* 26: 209 - 239.

## APPENDIX 2: ARTICLES USED IN WHOLE TEXT ANALYSIS

## APPENDIX 2A: AN UNANALYSED COPY OF AL40

less able than children to learn new forms of pronunciation because they have passed a 'critical' period for language learning that is determined by neurological maturation or re-organization. Penfield and Roberts (1966) asserted that cortical centers important for language acquisition lose 'plasticity' by about the age of twelve years. Lenneberg (1967: 176, 377) concluded that 'language readiness ... begins around (age) two and declines with cerebral maturation in the early teens'. He speculated that adults 'inevitably' speak foreign languages with an accent if L2 learning begins after childhood, because the ability to learn new forms of pronunciation is inhibited as the result of the 'firm structuring' of neural processes through cerebral lateralization. Lamendella (1977: 165) argued that the 'immature neurolinguistic systems' of children give them 'intrinsically greater potential' for L2 learning than adults. Scovel (1969: 245, see also Scovel 1981) claimed that:

It is the nature of the human brain, not its nurture, that crucially affects (L2 pronunciation). The onset of cerebral dominance, which seems to occur around the age of twelve, inhibits the ability of a person to master the sound patterns in a second language without an impinging foreign accent.

4 Walsh and Diller (1981: 12) recently provided specific new arguments concerning a possible neurological basis for 'difficulty' in eliminating foreign accents after childhood. They noted (1981: 16) that although L2 learners may thoroughly acquire aspects of a foreign language other than pronunciation (e.g. vocabulary), complete success in pronouncing L2 is impossible because pronunciation is a 'lower order' linguistic function which is 'genetically specified and consolidated in early development'. They speculated that whereas patterns of pronunciation are based on early maturing 'neuronal circuits', the development of 'higher order' linguistic components (such as the lexicon) depend on information encoded in stellate cells, which are largely undifferentiated at birth and continue to develop long thereafter. According to Walsh and Diller, stellate cells play an important role in the establishment of new neuronal synaptic arrangements, are associated with the 'plasticity' discussed earlier by Lenneberg (1967) and Penfield (1965; Penfield and Roberts 1966), and are important to various aspects of learning and memory. These conclusions are consistent, they suggested (1981: 8), with the view that the identification of speech sounds depends on the existence of feature 'detecting' neuronal circuits which are established early in development and do not evolve with experience.

5 The possibility of a neurally-based loss of 'plasticity' finds *prima facie* support in the loss of ability for further song learning observed in certain avian species—a phenomenon known as 'crystallization' (Marler and Mundinger 1971; Studdert-Kennedy 1981)—as well as in the apparent superiority of children compared to adults in learning to pronounce foreign languages. However, Walsh and Diller's hypothesis concerning the role of innate neural 'feature detectors' would be accepted by few speech-perception researchers today, and is inconsistent with research pertaining to the perception of L2 phonetic contrasts by adult L2 learners. For example, native speakers of English require a longer VOT interval to judge prevocalic stops as voiceless than do native speakers of Spanish, whose labelling of stops which differ along the VOT dimension seems to be largely determined by psychophysical limits on judgements pertaining to the temporal order of two acoustic events. The

## A Critical Period for Learning to Pronounce Foreign Languages?

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*This article discusses the Critical Period Hypothesis (CPH) as it relates to the naturalistic acquisition of foreign-language (L2) pronunciation by adults and children. An examination of the existing empirical and theoretical literature leads to the conclusion that there is no conclusive support for the existence of a critical period for human speech learning, and that assuming a critical period does exist may inhibit the search for testable hypotheses concerning the basis for observed adult-child differences in L2 pronunciation. These conclusions are based on the existence of direct counter-evidence, as well as on the observation that apparent adult-child performance differences may arise from many different confounding factors other than adult-child differences in neurological maturation or organization that cannot be adequately controlled in behavioral research.*

### 1. INTRODUCTION

The results of many acoustic and perceptual experiments have provided empirical support for the popular belief that the earlier an individual begins to learn a foreign language (henceforth L2), the better will be his or her pronunciation of that language (e.g., Asher and Garcia 1969; Fathman 1975; Cochrane 1977; Williams 1979; Tahta *et al.* 1981; Oyama 1982a, b). Research has demonstrated that listeners are capable of detecting auditorily even sub-phonemic differences in sounds produced by native and non-native speakers (e.g. Flege 1984). Research has further demonstrated that foreign accent, the perceived effect of many discrete and general differences in pronunciation between native and non-native speakers, has serious detrimental effects such as diminished intelligibility and negative social evaluation (see Flege 1987 for a review). These findings have inspired research addressing the question 'Why do adults often—if not always—pronounce foreign languages with an obvious accent when children do not?'

2 Despite widespread acceptance that language-learning aptitude (see, e.g. Carroll 1963) and motor skills (e.g. Smith 1978) generally increase through late adolescence, there seems to be widespread agreement among L2 researchers that adults lose some important aspect of speech-learning ability that children still possess. This belief has found expression in what will be referred to here as the 'Critical Period Hypothesis' (henceforth, CPH). The CPH makes two important predictions concerning the pronunciation of foreign languages. First, to be entirely effective, speech acquisition must occur prior to the establishment of hemispheric specialization for language functions. Second, speech learning that occurs after the critical period has passed will proceed more slowly, and ultimately be less successful, than learning which occurs before the critical period has ended.

3 The literature abounds with statements in support of the view that adults are

location of the phoneme boundary for native English speakers, moreover, continues to evolve throughout childhood and adolescence (Flege and Eefting 1986). The location of the phoneme boundaries of Spanish learners is known to shift to increasingly English-like VOT values as a function of age at first exposure to English and amount of English-language experience (Williams 1980). To take another example, the English /r/-/l/ contrast is known to represent an important learning problem for Japanese native speakers, owing to the absence of a phonemic contrast between /r/ and /l/ in Japanese. However, Japanese learners who have had sufficient conversational experience in English learn to label and discriminate the members of a synthetic /r/ to /l/ continuum just like English native speakers (Mackain *et al.* 1981).

The existence of a critical period is used frequently to rationalize empirical studies of L2 learning, and is often offered as an explanation for performance differences between adult and child L2 learners. For example, Mack (1984) performed an interesting series of experiments aimed at determining whether individuals who learned L2 long before puberty ('early childhood bilinguals', see McLaughlin 1978) differed from monolingual native speakers of L2. Having found differences between English monolinguals and French/English bilingual subjects, Mack concluded (pp. 172-3) that they did not 'undermine the critical-period hypothesis' because the differences may have stemmed from 'non-intrusive' interference arising from the existence of two linguistic systems rather than one, and not from 'intrusive' interference arising from differences in the sound systems of L1 and L2. Thus Mack—like many before her—appeared unwilling to interpret her evidence as possible counter-evidence against the CPH, because the CPH was accepted as a fact, rather than viewed as a hypothesis.

Given the importance of the CPH as a heuristic for designing and interpreting the results of L2 research, the aim of this article is to provide a discussion of the CPH as it relates to the ability of children and adults to pronounce L2. Most research influenced by the CPH has examined the production of L2 (but see Oyama 1982b for an exception). This is due largely to the fact that speech production differences between native and non-native speakers are more easily observed, and thus more frequently assessed and quantified, than perception differences. Production research has also undoubtedly been stimulated by the popular belief that adults and children differ in speech production, whereas a similar popular consensus regarding the perception of foreign languages does not appear to exist.

The discussion leads to the conclusion that existing evidence does not provide firm and conclusive support for the existence of a critical period for human speech learning, and that assuming the existence of a critical period may inhibit the search for testable hypotheses concerning the basis of observed adult-child differences in L2 pronunciation. These conclusions are based on the observation that the existence of adult-child differences may derive from confounding factors other than adult-child differences in neurological maturation or organization that cannot be adequately controlled in behavioral research.

## 2. ARGUMENTS AGAINST THE CPH

I believe that there are many good reasons to question whether a critical period for speech learning truly exists. First, the critical-period concept was not originally developed to describe human behavior, but was instead developed in ethological studies to account for animal behavior. A good example of a critical period for the learning of environmentally important stimuli is the imprinting seen, for example, in chickens, ducks, and geese (Hinde 1974). It is generally the case that a pattern of behavior which can be acquired only within a well-defined critical period exhibits the following characteristics:

- a it tends to appear under well-defined developmental conditions;
- b it cannot be forgotten or revised once it has been established;
- c it involves the recognition of species characteristics rather than individual characteristics; and
- d it may be learned long before it is manifested.

Of the four characteristics just mentioned, only the first seems to apply directly to human speech learning.

According to Oyama (1979), the critical-period concept cannot, in itself, explain characteristics of speech or other forms of observable behavior. In her view, the critical-period concept may serve to delineate developmental phases, to isolate specific mechanisms that regulate sequences of differentiation, and to pinpoint sources of environmental stimulation that influence behavior. Investigations of development in many different species, she observed, have supported the view that it is not a critical period which imposes a temporal limit on development, but rather the way in which developmental processes display themselves sequentially and interact with one another. In Oyama's view (1979: 88 ff.), the apparent superiority of early as opposed to late speech learning may support the existence of a broadly defined 'sensitive' period. A sensitive period may be regarded as a period of heightened responsiveness that is preceded and followed by periods of lesser responsiveness, or a 'period of competence' for specific exchanges with the environment. Shifts in responsiveness to various environmental stimuli may co-occur with the 'progressive elaboration of structures or schemata' which may affect how the organism engages the environment.

Second, despite the many studies which have shown superior performance by child subjects compared to adult subjects, several studies have provided evidence that in certain circumstances adults may produce or perceive L2 sounds as well as, or even better than, children (see Flege 1981). For example, Snow and Hoefnagel-Höhle (1978) found that English-speaking adults produced Dutch sounds more authentically than 8-10 year-old children after a small amount of L2 experience. Winitz (1981) found that native English adults were better able to discriminate Chinese tones and obstruent consonants than English-speaking 8-year-olds.

Third, a rigorous test of the CPH requires that converging behavioral and neurological evidence be provided. However, existing neurological evidence does not provide firm support for the existence of a critical period. There does not seem to be evidence for a discontinuity in neural development that could be reasonably regarded as coinciding with a clear change in speech-learning



abilities. Most parameters of brain growth have reached adult or near-adult levels by five years of age (Whitaker *et al.* 1981), whereas other evidence has indicated that human cerebral functions and neuronal synaptic arrangements continue to develop, often as the result of specific environmental experience, long beyond puberty (Walsh and Diller 1981). Commenting on their finding that short-term conditioning was sufficient to affect adults' perception of the judged pitch of complex stimuli, Peters and Hall (1985) observed that 'behavior changes brain cells, sometimes briefly and sometimes forever'.

13 Probably the most important evidence offered by Lenneberg (1967) in support of a critical period was that children, unlike adults, are capable of complete recovery from certain types of aphasia as the result of shifting language functions from the dominant to the non-dominant hemisphere after a trauma has occurred. However, Snow (1986; see also Snow and Hoefnagel-Höhle 1982) has reviewed more recent evidence suggesting that complete recovery from aphasia does not occur, even in young children. There has been controversy regarding the age at which cerebral lateralization reaches completion. Arguments have been advanced that it occurs at the age of five or at the age of twelve. Both of these ages have, as a result, been proposed as marking the end of the critical period for speech learning. However, evidence reviewed by Studdert-Kennedy (1984) and Snow (1986) suggests that hemispheric specialization for the kinds of sequential processing important to speech production is evident at birth. In any case, it has never been clearly established that lateralization *per se* would impair language learning by either hemisphere (Oyama 1982a). Moreover, a recent dichotic listening experiment casts doubt on the assumption that degree of lateralization (as assessed by the magnitude of the right-ear advantage) is related to L2 proficiency (Schouten *et al.* 1985).

14 Fourth, the CPH leads to the expectation of a fairly abrupt difference in how authentically L2 is pronounced by individuals differing in age. This expectation was not supported in a study by Oyama (1982a), which examined the degree of foreign accent in the speech of native Italian men living in the United States. Degree of accent (as assessed by global ratings) increased *linearly* as a function of the age (between 6-20 years) at which the sixty subjects had arrived in the USA. There was no marked discontinuity which might serve to delineate the end of a critical period at the age of twelve or any other age. Data reported by Tahta *et al.* (1981) seemed to show a difference in the expected direction between individuals who were either less than, or more than, 12 years of age when they first began learning L2 in the United Kingdom. However, the significance of this apparent difference was not tested.

15 An essential aspect of human speech learning is the ability to perceive the acoustic distinctions between L2 categories accurately, and to implement those distinctions phonetically through finely controlled motoric patterns. Thus the CPH indirectly leads to the expectation that children will be able to imitate L2 sounds better than adults. This expectation was supported by Cochrane and Sachs (1979), who found that English-speaking 7-year-olds imitated Spanish words better than English-speaking adults. However, Politzer and Weiss (1969) reported a positive correlation between age and the accuracy with which American school children imitated French vowels. Snow and Hoefnagel-Höhle (1977, 1978, 1979) studied the imitation of Dutch words by native English

adults and children 5-17 years of age. They also found that the accuracy with which subjects imitated Dutch sounds was positively correlated with age.

### 3. POTENTIAL CONFOUNDING FACTORS

16 Perhaps the single most important reason for caution in accepting the CPH is that it presupposes an overly simple view of the speech learning process. Centuries of research in linguistics and phonetics has demonstrated that human speech is importantly influenced by 'mind, matter, and manners' (J. Ohala, personal communication). Speech is 'mental' in that it is directed by central category representations (of phones or phonemes) which contain sensorimotor information concerning production and perception parameters. Speech is 'material' in the sense that it is realized motorically by means of a mechanism with specific biomechanical constraints, and perceptually processed through sensory mechanisms having specific limits of resolving power. Speech is 'social' in that, within the physical limits just mentioned, linguistic experience affects the manner in which speech sounds are produced and how they are perceived. In addition to referential (i.e. categorical) information, sub-phonemic variations in segmental articulation also convey social and affective information.

17 A failure to consider all three aspects of speech is reductionistic, and apt to lead to misunderstanding of how speech is learned. In my opinion, such an oversimplification has led to an inappropriate acceptance of the CPH and this, in turn, has led to potentially erroneous conclusions regarding why children's speech performance might differ from adults'. More specifically, I believe that the existence of adult-child differences is likely to arise from a variety of factors other than (or in addition to) a critical period, because the age of L2 learners is inevitably confounded with other conditions that co-vary with chronological age.

#### 3.1. Developmental factors

18 One obvious factor that may be confounded in studies comparing children and adults is differences in size and physiological functioning that may exist independently of differences in neurological maturation and/or organization. For example, a recent study by Flege *et al.* (1987) examined in detail the production of the contrast between /p/ and /b/ in the final position of English words by English adults and children, and by Chinese adults and children. An examination of two parameters (duration of the closure interval, duration of closure voicing) revealed that the Chinese adults differed from subjects in the three other groups. This suggested that the Chinese adults were less successful than the Chinese children in learning to realize a phonetic contrast which does not exist in their L1. However, the Chinese adults more closely resembled the English adults than the Chinese children as far as the minimum rate at which air pressure increased in the mouth. This indicated that in addition to speech learning that arises from specific linguistic experience, anatomical differences between children and adults (e.g. the amount of compliant tissue bounding the oral cavity) may also influence the nature of segmental articulation.

19 To take another example, Flege and Eefting (1986) recently examined the production and perception of /t/ and /d/ by Spanish adults and children (in Spanish) and English adults and children (in English). The study clearly showed an effect of previous linguistic experience. The Spanish subjects produced the

/t/ in Spanish words with significantly shorter VOT values than the English subjects produced in English words, and showed a phoneme boundary between /t/ and /d/ at significantly shorter VOT values. The study also revealed clear developmental effects. The adult subjects produced /t/ with longer VOT values than the child subjects of the same native-language background, and manifested phoneme boundaries at significantly longer VOT values than the child subjects. Had production of English words by just adult and child native speakers of Spanish been examined, the existence of the developmental trend would probably have made it appear that the adults had more closely approximated the segmental phonetic norms of English than the child learners.

### 3.2. L2 input

**20** It is possible roughly to control the length of time child and adult subjects have lived in an L2-speaking environment, but even then, the possibility exists that adult-child differences in pronunciation may derive from differences in the quality or quantity of L2 experience. Cochrane (1977) administered a detailed questionnaire on language background and usage to Japanese children and adults learning English in the United States. Compared to the adults, the children tended to speak English with a greater number of people outside the home, and were obliged to use English in a greater number of social contexts than the adults. Others have provided similar, subjective observations. Burling (1981) noted that other adults, by switching into English to promote a better exchange of ideas, impeded his progress in learning Swedish during his sabbatical year in Sweden. His children, on the other hand, were typically left to struggle in Swedish by their playmates, whose proficiency in English was probably less developed than that of most Swedish adults. Snow and Hoehnel-Höhle (1978: 1116) observed that native English children learning Dutch in The Netherlands received more L2 input than adults:

The 3-15 year-olds were all attending Dutch schools and were therefore exposed to a Dutch language environment a minimum of 30 hours per week. The five adult men were all working in Dutch language environments; however, since most Dutch adults speak English well and readily, none of the men used Dutch regularly as a working language. The six adult women were all housewives who heard Dutch only in the context of shopping, social encounters, and contacts with their children's schools, government offices, etc. . . .

**21** The quality of L2 input which adult and child learners receive may also differ. Burling (1981), among others, noted that children tend to use language more often in reference to ongoing events and objects near at hand than adults, who are more apt to discuss abstract concepts without tangible referents. Asher (1981) observed that child L2 learners, unlike most adults, inhabit an 'acquisition-enriched' environment in which much of the language addressed to them is immediately understandable from context (e.g. 'Give Daddy a kiss'; 'Let's wash our hands'). Language addressed to adults, on the other hand, tends to be less easily understood from contexts (e.g. 'Good morning'; 'How are you?').

**22** A difference in the quality of L2 input may have important consequences. Children may understand a larger proportion of the L2 speech which is addressed to them than adults, which may in turn lead to a quantitative

difference in L2 'intake'. L2 words may also have a richer array of sensory associations for children than adults, making them easier to store and retrieve in speech processing. Asher and Price (1967) hypothesized that adult-child differences in pronunciation would disappear if L2 intake were truly equal for learners of different ages. In indirect support of this, they found that adults outperformed children in comprehending and executing commands spoken in a foreign language when exposed to physically demonstrated actions that were explained in L2 by the instructor.

### 3.3. Motivation and affective factors

**23** Adult-child differences might also be due to differences in how subjects differing in age regard L2 or the need to modify previously established patterns of pronunciation. The degree of authenticity with which a learner pronounces L2 may be related to the extent he or she feels inclined—or obliged—to pronounce L2 like L2 native speakers. Hanlon (1971, cited by Cochrane 1977) found that children were more likely to imitate an individual's accent if they identified positively with him or her. Macnamara (1973) suggested that children may pronounce foreign languages better than adults because they generally feel stronger pressure from their peers to conform to pronunciation norms. Perhaps children feel greater social pressure than adults to pronounce L2 authentically because they feel a greater need to participate fully in the culture associated with L2. Tahta *et al.* (1981) found that the amount of time adult and child L2 learners used English in the home accounted for a significant 9 per cent of variance in pronunciation scores. When subjects aged 7-12 years were considered separately, it accounted for 26 per cent of the variance. The authors speculated that this finding reflected the strength of subjects' identification with L2 and its associated culture, rather than simply a difference in the amount of L2 input.

**24** Schumann (1976, 1978) asserted that affective factors are more important than age in determining success in L2 pronunciation, and suggested that progress in L2 may be impeded by fear of making mistakes or being ridiculed for communicating ineffectively in L2. He outlined (1978) a wide range of factors that might potentially affect L2 learning. Under 'social factors' he included the socio-economic status of the L2 learner *vis-à-vis* native speakers of L2. 'Affective factors' included 'language shock' and 'culture shock'. Schumann speculated that anxiety induced by the many differences between L1 and L2, along with concomitant cultural differences, may impede progress. 'Personality factors' included 'degree of extroversion', 'tolerance for ambiguity', 'sensitivity to rejection', and 'degree of self-esteem'. These factors seemed likely to Schumann to affect the extent to which L2 learners seek practice in speaking L2, and thus the amount of L2 input.

**25** Few if any previous studies examining the role of affective factors have directly compared adults to children, and few have been directly related to pronunciation. However, the possibility exists that affective factors influence the speech of adults and children differently, and that adults are more fearful of making mistakes than children. Guiora *et al.* (1972) examined the effect of alcohol to test a hypothesis regarding inhibitions against pronouncing foreign languages authentically. Perceptual evaluations indicated that adult subjects who imitated Thai speech material ten minutes after ingesting 1-1.5 oz of

alcohol did so better than subjects who received a placebo; these, in turn, did so better than subjects who consumed 2-3 oz of alcohol. Guiora (1972) provided a psychoanalytic interpretation of these results. He argued that L2 pronunciation patterns become a manifestation of personal identity once an individual develops a sense of 'language identity' and that, once this happens, an L2 learner may regard the prospect of modifying previously established patterns of pronunciation as threatening to his or her 'language ego'. Although other interpretations are possible, the finding by Guiora *et al.* (1972) seemed to show that adults are at least *capable* of pronouncing L2 better than they actually do. It is therefore possible that children pronounce L2 better than adults because they have fewer psychological inhibitions regarding the pronunciation of L2.

**2.6** Attitudes and inhibitions may be related to motivation, which probably plays an important role in determining how successfully an L2 will be pronounced. Gardner and Lambert (1972) described motivation as having 'integrative' and 'instrumental' aspects. A learner who is integratively motivated wants to learn L2 in order to meet and communicate with native speakers of L2; one with an instrumental motivation desires to learn L2 in order to achieve professional or social advancement. Differences in motivational levels might reasonably be expected to lead to differences in amount of L2 input. To the best of my knowledge, no existing research has clearly shown whether these different types of motivation lead to differences in L2 pronunciation success, nor provided unambiguous information regarding motivational levels of adults compared to children.

**2.7** Adults might become more easily discouraged regarding their L2 progress than children because the 'tolerance region' for adults' production of sounds is narrower than for children's, because adults are more able than children to note their own divergences from L2 phonetic norms, or both. One study showed that adults' accents were judged to be more authentic than children's after a short period of learning, but that the reverse was true after a longer period of learning (Snow and Hoefnagel-Höhle 1977, 1978). This suggests that young children continue to 'work on' their pronunciation longer than adults, perhaps because adults are more interested in communicating linguistic 'substance', whereas children are more interested in the 'form' that communication takes. If adult-child motivational differences do exist, they would provide another potentially confounding factor in developmental studies.

### 3.4. Social factors

**2.8** L2 learning is generally not considered very important in the United States, as demonstrated by the relatively small number of students who study a foreign language beyond the minimum of 1-2 years. This attitude stands in contrast to that which prevails in certain other societies, where the ability to communicate in several languages is an important determinant of status. Hill (1970) observed that in cultures where L2 learning is a highly valued skill, even adults may manifest considerable success in L2 pronunciation. Segalowitz and Gatbonton (1977: 86) noted that L2 learners attempt to pronounce L2 authentically when their community regards mastery of foreign languages as 'prestigious and indicative of the speaker's superior intelligence and level of education'. Adults in Western society are well aware that 'adults cannot pronounce foreign languages without an accent', whereas children are apt to be told that they can

do so. These expectations may represent self-fulfilling prophecies, and create yet another confounding factor which may contribute to better performance by children than adults.

**2.9** Adults, moreover, may have more reason to retain an foreign accent in L2 than children. As mentioned earlier, foreign accent has a number of demonstrably negative effects, yet it possesses at least one advantage. Standard varieties of speech have 'overt' prestige (meaning that they elicit positive evaluations for dimensions relating to status, competence, power, etc.), whereas non-standard varieties of speech may enjoy 'covert' prestige (reflected by relatively high evaluations along dimensions such as friendliness, dependability, sense of humor, etc.). If foreign-accented speech can be thought of as a kind of 'non-standard' dialect, speaking with an accent may be perceived by the L2 learner as beneficial. For example, maintaining a foreign accent might help the L2 learner preserve his or her ethnic identity in a community where L2 is the dominant language. Gatbonton (1975, cited by Segalowitz and Gatbonton 1977) found that the frequency with which French Canadians correctly produced the difficult /θ/ and /ð/ sounds in English depended to some extent on how strongly they identified with the French-speaking population of Canada. Subjects who were most nationalistic in their political views correctly produced these sounds less often than learners whose ethnic identifications were not as strong. The L2 learner might attempt to avoid social censure by speaking with an accent that identifies him or her as not being a member of the community in the fullest sense. Social blunders which would be excused in an obvious 'foreigner' might not be so readily tolerated in a non-obvious foreigner. A foreign accent may represent a ready-made excuse for many minor social transgressions. Speaking without a foreign accent, on the other hand, might be regarded by the L2 learner as a kind of 'disloyalty' to other L2 learners of the same L1 background (Ryan and Carranza 1975).

### 3.5. Incomplete learning

**3.0** Another potential difficulty in comparing child to adult subjects is that, all else being equal, differences in the rate of learning may be misinterpreted as representing a difference in the *extent* of learning. It takes any learner, child or adult, some finite amount of time to master the production of a new sound. Certain sounds (such as /θ/ and /ð/) are inherently more difficult to learn than others, even by children learning their first language (Macken and Ferguson 1981). Children may appear to outperform adults if they learn difficult L2 sounds at a faster rate than adults. Although a difference in rate of learning between adults and children would constitute support for the existence of a critical period (at least as formulated earlier in this article), it could in itself be the indirect consequence of differences in motivation, affect, social pressure, etc.

### 4. COMPETING HYPOTHESES

**3.1** It would be difficult if not impossible to control for all of the potential confounding factors just mentioned, so it is probably impossible to provide unequivocal behavioral evidence in support of the existence of a critical period for speech learning. In my opinion, this reduces the CPH to an *a priori* assumption about the basis of adult-child differences rather than a testable

*hypothesis*. This in itself represents an important reason for discarding the CPH, at least as it was formulated above. A more important reason, perhaps, is that accepting the CPH may impede the development of specific hypotheses that *can* be tested. A discussion of such hypotheses falls outside the scope of this article (however, see Flege 1987), but several can be briefly outlined.

**32** One hypothesis that could be tested is that children pronounce an L2 better than adults because they tend to process speech in an 'auditory' rather than a 'phonetic' mode more often, or to a greater extent, than adults, and that this enables them to develop more accurate perceptual 'targets' for L2 sounds. An auditory mode of processing makes use of the psychoacoustic capabilities with which all individuals are endowed. A phonetic mode of processing, on the other hand, imposes on sensory input patterns of perceptual processing that have been shaped by previous linguistic experience (see Redmond 1977; Repp 1981; Werker and Logan 1985). The development of an optimal representation for each L1 category depends, at least initially, on an auditory mode of processing. The L1 learner must establish which categories exist in L1, then go about determining the range of permissible allophonic variation for each category which has been identified.

**33** Children may be more likely than adults to favor an auditory mode (or at least a pre-categorical auditory 'stage') in processing speech sounds because their central representations for sound categories are still evolving. Or children might be better able than adults to switch from a phonetic to an auditory mode when processing demands require doing so. If this is true, it might be more difficult for adult L2 learners than child L2 learners to assess accurately the acoustic characteristics of L2 sounds. Since the accurate production of an L2 sound surely depends on an accurate assessment of its acoustic characteristics, this should make it easier for children than adults to pronounce L2 sounds accurately.

**34** A related hypothesis is that children may pronounce L2 sounds better than adults because they are more likely to develop new phonetic categories as a result of exposure to sounds in L2 which are acoustically non-identical to sounds found in L1. This hypothesis rests on the assumption that children's L1 categories are less firmly established or thoroughly elaborated than those of adults. Most instances of long-term learning, of which speech learning is just a particular instance, rely heavily on previous cognitive experience (Ausubel 1968). The learner brings the cumulative experience of her or his life to any new learning experience, including L2 learning. This leads to the expectation that adults may be more strongly inclined than children to identify phones occurring on the phonetic surface of L2 as belonging to already familiar L1 categories.

**35** To illustrate how this might affect L2 pronunciation, let us consider the learning of English by Dutch native speakers. Some Dutch vowel categories are acoustically indistinguishable from English vowel categories (e.g. /l/, /a/), some resemble vowels found in English, but are none the less measurably different from them (e.g. /i/, /u/); and some English vowels have no direct phonological counterpart in Dutch (e.g. /æ/, /ʌ/, /ɔ/). All of the vowels encountered in English by Dutch learners will, of course, bear some degree of auditory similarity to Dutch vowel categories. However, we might expect that, in general, Dutch learners of English will produce English vowels that are 'identical' to Dutch vowels better than they produce vowels which are merely 'similar', and

that they will fare least well on 'new' vowels which have no phonological counterpart in Dutch. An issue that should be investigated is whether Dutch children are more likely than Dutch adults to recognize that vowels such as English /æ/ and /ʌ/ have no counterpart in Dutch, that is, they represent 'new' vowel categories. If so, it would mean that Dutch children should be more likely to stop substituting the closest Dutch vowel category for English /æ/ and /ʌ/, and should ultimately be judged to be more successful than adults in producing these vowels.

**36** To take an example from the temporal domain, let us consider the production of French /t/ by English learners. Native speakers of English who learn French must (among other things) learn to produce /t/ in the initial position of French words with short-lag VOT values of about 20 ms, rather than with the long-lag VOT values of 50-100 ms which are typical for English. It seems reasonable to think that English learners of French will judge the acoustically different phone occurring at the beginning of French and English words such as *taille* and *tu*, as belonging to the same category. Flege (1981; Flege and Hillenbrand 1984) proposed that, in such instances, adult native speakers of English will be prevented from developing an accurate perceptual 'target' for French /t/ as the result of a mechanism he termed 'equivalence classification'. That is, the English learner of French (or the French learner of English) would tend to regard the many tokens of /t/ encountered in French as being 'allophones' of an already familiar category (i.e. English /t/). Although the English learner of French can detect auditorily the differences between French and English /t/, he or she will not develop a new phonetic category for French /t/, because of a general cognitive constraint.

**37** This hypothesis seems to account for data (e.g. Caramazza *et al.* 1973; Flege and Hillenbrand 1984) which show that adult L2 learners typically produce stops with VOT values that are intermediate in value to those produced by monolingual native speakers of L1 and L2. This suggests a merger of the phonetic properties of French and English /t/ (a 'merged' system), rather than the establishment of a separate, co-existing category for French /t/ alongside that of the English /t/ (an 'enriched' phonetic system). One factor which makes this hypothesis plausible is that adults are generally more literate than children, and more likely to learn L2 through the intermediary of the written word. Reliance on an orthographic system which is at least partially phonemic is likely to encourage an L2 learner to interpret the sounds found in L2 words in terms of L1 categories.

**38** The hypothesis has not yet been directly tested for child versus adult subjects (but see Williams 1979, 1980). It would be useful to determine in a study which controlled L2 intake whether English-speaking children who learn French are more likely than adults to develop a new category for French /t/. This could be done in two ways. First, the production and perception by adult and child subjects, in both French and English, should be examined. Second, adult and child subjects should be asked to choose stimuli they prefer (i.e. the 'prototypes') from a VOT continuum, in both a French and an English 'set'. If the L1 categories of adults are more 'all encompassing' than those of children, the 'tolerance region' of bilingual adults should be larger than that of child subjects, and the child subjects should show a greater tendency to identify two preferred ranges (prototypes) than adult subjects. This expectation is based on the

assumption that as adults gain experience in L1, they become increasingly familiar with the wide range of allophonic variants which serve as realizations for each category, and are therefore more willing than children to accept L2 phones as being realizations of an L1 category.

39 If the hypothesis just outlined is correct, it would mean the child L2 learners who come to recognize the existence of new categories in L2 would be more fully able to exploit the basic human ability to translate the sensory correlates of speech sounds into articulatory motor routines. Differences between adults and children, if observed, would therefore not be seen as arising from a difference in basic ability, so much as from differences in the extent to which that basic ability is tapped during the course of naturalistic L2 acquisition.

40 Neither of the two broad 'cognitive' hypotheses just outlined has been adequately tested to date, but both could be tested in a series of focused experiments comparing adults to children. Such a research programme would not be strongly motivated, however, if it were axiomatically accepted beforehand that adults' basic speech learning ability was inherently inferior to that of children. Specific processing strategies such as those just mentioned might differentiate adults from children, as well as successful versus relatively unsuccessful L2 learners of any age. An interest in discovering the existence of processing differences, however, appears to be dampened by the CPH because it represents the assumption that adults' production of L2 sounds is impeded by a diminished ability to realize articulatorily the (correctly) perceived sounds of L2.

#### 5. SUMMARY

41 The critical period hypothesis (CPH) has been examined. The conclusion is reached that the CPH represents an assumption regarding inherent differences between L2 learners of different ages, rather than a testable hypothesis concerning the nature of speech learning. The primary reason for reaching this conclusion is that the results of several empirical studies are inconsistent with the expectations generated by the CPH; and there are many factors which are necessarily confounded when comparisons of adult versus child speech are made. It was further concluded that the CPH, while it represents an idea which is perhaps 'good to think', may in the long run impede progress in the field of L2 speech learning because it makes certain hypotheses which can be tested appear unwarranted.

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## APPENDIX 2B: AN UNANALYSED COPY OF EC22

### ECONOMIC GROWTH AND THE ENVIRONMENT\*

GENE M. GROSSMAN AND ALAN B. KRUEGER

We examine the reduced-form relationship between per capita income and various environmental indicators. Our study covers four types of indicators: urban air pollution, the state of the oxygen regime in river basins, fecal contamination of river basins, and contamination of river basins by heavy metals. We find no evidence that environmental quality deteriorates steadily with economic growth. Rather, for most indicators, economic growth brings an initial phase of deterioration followed by a subsequent phase of improvement. The turning points for the different pollutants vary, but in most cases they come before a country reaches a per capita income of \$8000.

#### I. INTRODUCTION

1 Will continued economic growth bring ever greater harm to the earth's environment? Or do increases in income and wealth sow the seeds for the amelioration of ecological problems? The answers to these questions are critical for the design of appropriate development strategies for lesser developed countries.

2 Exhaustible and renewable natural resources serve as inputs into the production of many goods and services. If the composition of output and the methods of production were immutable, then damage to the environment would be inextricably linked to the scale of global economic activity. But substantial evidence suggests that development gives rise to a structural transformation in what an economy produces (see Syrquin [1989]). And societies have shown remarkable ingenuity in harnessing new technologies to conserve scarce resources. In principle, the forces leading to change in the composition and techniques of production may be sufficiently strong to more than offset the adverse effects of increased economic activity on the environment. In this paper we address this empirical issue using panel data on ambient pollution levels in many countries.

3 Examination of the empirical relationship between national income and measures of environmental quality began with our

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paper on the likely environmental impacts of a North American Free Trade Agreement [Grossman and Krueger 1993]. There we estimated reduced-form regression models relating three indicators of urban air pollution to characteristics of the site and city where pollution was being monitored and to the national income of the country in which the city was located. Selten and Song [1992] and Holtz-Eakin and Selden [1992] have used similar methods to relate estimated rates of emission of several air pollutants (with estimates formed by multiplying the aggregate national consumption of each of several fuel types by technical coefficients that are meant to reflect contemporaneous abatement practices in each country) to the national income level of the emitting country. The World Bank Development Report [1992] also reports evidence on the relationship between several measures of environmental quality and levels of national GDP.<sup>1</sup> These studies tend to find that environmental degradation and income have an inverted U-shaped relationship, with pollution increasing with income at low levels of income and decreasing with income at high levels of income.

4 The main contribution of the present paper is that it employs reliable data and a common methodology to investigate the relationship between the scale of economic activity and environmental quality for a broad set of environmental indicators. We attempt to include in our study all of the dimensions of environmental quality for which actual measurements have been taken by comparable methods in a variety of countries. To this end, we use all of the available panel data in the Global Environmental Monitoring System's (GEMS) tracking of urban air quality in different cities in the developed and developing world. And we use much of the panel data from the GEMS monitoring of water quality in river basins around the globe. Although these measures are far from a comprehensive list of all relevant variables describing the state of an ecosystem, the variety in the types of pollutants included in our investigation may allow generalization (with caveats) to some other types of environmental problems, and it is more comprehensive than that used in previous studies.

1. The report includes estimates of the relationship between income and the percentage of the population without access to safe water or urban sanitation, using internal World Bank data, and on the relationship between income and municipal solid waste per capita, using O.E.C.D. and World Resources Institute estimates for 39 countries compiled for the year 1985. A background study for this report (see Shafik and Bandyopadhyay [1992]) also examined total and annual deforestation between 1961 and 1986 for samples of 77 and 66 countries, respectively, plus two of the water-quality indicators studied here.

5 In the next section we describe the environmental indicators and the sources of our data. We discuss briefly the anthropogenic sources of the various pollutants and the health hazards they pose, and note the forms of environmental degradation that are absent from our study. Section III details the common methodology that we employ in analyzing the cross-national and time-series pollution data. The results of our analysis are presented and discussed in Section IV. The final section discusses the consistency of our findings with those reported by other authors and comments on the lessons to be drawn from them.

## II. THE ENVIRONMENTAL INDICATORS

6 Environmental quality has many dimensions. Our lives are affected by the air we breathe, the water we drink, the beauty we observe in nature, and the diversity of species with which we come into contact. The productivity of our resources in producing goods and services is influenced by climate, rainfall, and the nutrients in the soil. We experience discomfort from excessive noise and crowding, and from the risk of nuclear catastrophe. Each of these dimensions of environmental quality (and others) may respond to economic growth in a different way. Therefore, a study of environmental and growth should aim to be as comprehensive as possible.

7 Unfortunately, a paucity of data limits the scope of any such study. Only in recent years have the various aspects of environmental quality been carefully assessed and only a small number of indicators have been comparably measured in a variety of countries at different stages of development. Comparability and reliability are the central aims of the effort spearheaded by GEMS, a joint project of the World Health Organization and the United Nations Environmental Programme. For almost two decades GEMS has monitored air and water quality in a cross section of countries. These panel data provide the basis for our research.

8 The GEMS/Air project monitors air pollution in selected urban areas. Concentrations of sulfur dioxide ( $SO_2$ ) and suspended particulate matter are measured on a daily (or sometimes less frequent) basis; and the raw data are used to calculate the median, eightieth percentile, ninety-fifth percentile, and ninety-eighth percentile observation in a given year.<sup>2</sup> GEMS also reports informa-

2. The GEMS data for 1977-1984 are published by the World Health Organization in the series *Air Quality in Selected Urban Areas*. We obtained unpublished data for 1985-1988 from the U. S. Environmental Protection Agency.



ores [World Resources Institute 1988]. Automobile exhaust and certain chemical manufacturers are also sources of SO<sub>2</sub> in some countries [Kormondy 1989]. Particulates are generated naturally by dust, sea spray, forest fires, and volcanoes. Economic activities responsible for pollution of this sort include certain industrial processes and domestic fuel combustion.

**12** The GEMS/Water project monitors various dimensions of water quality in river basins, lakes, and groundwater aquifers. The number of observations from lake and groundwater stations is, however, too small for any meaningful statistical analysis. Therefore, we focus our attention on the data that describe the state of river basins. In choosing where to locate its monitoring stations, GEMS/Water has given priority to rivers that are major sources of water supply for municipalities, irrigation, livestock, and selected industries. A number of stations were included to monitor international rivers and rivers discharging into oceans and seas. Again, the project aimed for representative global coverage. The available water data cover the period from 1979 to 1990. By January 1990 the project had the active participation of 287 river stations in 58 different countries. Each such station reports thirteen basic chemical, physical, and microbiological variables, several globally significant pollutants including various heavy metals and pesticides, and a number of site-specific, optional variables. Information also is provided about the measurement method and frequency of observation, as well as the exact location of the monitoring station.<sup>4</sup> Our study makes use of all variables that can be considered indicators of water quality, provided that they have anthropogenic constituents and that at least ten countries are represented in the sample.

**13** We focus on three categories of indicators relating to water quality. First, we examine the state of the oxygen regime. Aquatic life requires dissolved oxygen to metabolize organic carbon. Contamination of river water by human sewage or industrial discharges (by, for example, pulp and paper mills) increases the concentration of organic carbon in forms usable by bacteria. The more numerous are the bacteria, the greater is the demand for dissolved oxygen, leaving less oxygen for fish and other higher forms of aquatic life. At high levels of contamination the fish population begins to die off. A similar problem can arise when river

4. Summary data are published triennially by the Global Environmental Monitoring System in the series GEMS/Water Data Summary. We obtained raw data from Robert Bission of the Canada Centre for Inland Waters, which is the WHO Collaborating Centre for Surface and Groundwater Quality.

tion about the monitoring stations, including the nature of the land use nearby and the type of the monitoring instrument used. As some of the methods used to measure suspended particulates reflect primarily concentrations of coarser, heavier particles while others capture quantities of finer, lighter particles, and as the different types of particles pose different health risks, we have chosen to divide the sample for suspended particulates into two subsamples, one for "heavy particles" and the other for "smoke."

**9** Participation in the GEMS/Air project has varied over time. For SO<sub>2</sub>, the sample comprised 47 cities in 28 countries in 1977, 52 cities in 32 countries in 1982, and 27 cities in 14 countries in 1988. A total of 42 countries are represented in the sample. Heavy particles were monitored in 21 cities in 11 countries in 1977, 36 cities in 17 countries in 1982, and 26 cities in 13 countries in 1988, with 29 countries represented in all. The sample for smoke included 18 cities in 13 countries in 1977, 13 cities in 9 countries in 1982, and 7 cities in 4 countries in 1988, with a total of 19 countries in all. In all cases, monitoring sites were chosen to be fairly representative of the geographic and economic conditions that exist in different regions of the world [Bennett et al. 1985].

**10** The air quality variables in our study are among the most commonly used indicators of air pollution in cities and other densely populated areas. Sulfur dioxide and suspended particles are found in great quantities in many cities, and their severe effects on human health and the natural environment have long been recognized. Important forms of urban air pollution absent from our sample include nitrogen oxides, carbon monoxide, and lead. Perhaps more important is the omission of the air pollutants that affect the global atmosphere, and specifically those that contribute to ozone depletion and to the greenhouse effect. These would include chlorofluorocarbons (CFC's), carbon dioxide, methane, nitrous oxide, and tropospheric ozone.

**11** Both sulfur dioxide and suspended particulate matter (especially, the finer particles) have been linked to lung damage and other respiratory disease.<sup>3</sup> Sulfur dioxide is emitted naturally by volcanoes, decaying organic matter, and sea spray. The major anthropogenic sources include the burning of fossil fuels in electricity generation and home heating, and the smelting of nonferrous

3. For example, Lave and Seskin [1970] find that variation in SO<sub>2</sub> and population density together explain two-thirds of the variation in death from bronchitis in a sample of U. S. cities. See also Dockery et al. [1993] and U. S. Environmental Protection Agency [1982].

water is overenriched by nutrients such as are contained in runoff from agricultural areas where fertilizers are used intensively. Excess nitrogen and phosphorus promote algal growth. The decay of dying algae consumes oxygen, which is lost to the fish population.

**14** Some GEMS/Water stations directly monitor the level of dissolved oxygen in a river as an indication of the state of the oxygen regime. Other stations measure instead the contamination by organic compounds as an indication of the competing demands for oxygen. One measure of this, called biological oxygen demand (BOD), is the amount of natural oxidation that occurs in a sample of water in a given period of time. Another measure, called chemical oxygen demand (COD), is the amount of oxygen consumed when a chemical oxidant is added to a sample of water. Whereas dissolved oxygen is a direct measure of water quality, BOD and COD are inverse measures, indicating the presence of contaminants that will eventually cause oxygen loss. Some stations measure all three water quality indicators. We investigate the relationship between levels of income and all three of these indicators of the state of the oxygen regime, as well as the concentration of nitrates in the river water.

**15** Pathogenic contamination is our second indicator of water quality. Pathogens in sewage cause a variety of debilitating and sometimes fatal diseases such as gastroenteritis, typhoid, dysentery, cholera, hepatitis, schistosomiasis, and giardiasis. The presence of pathogens is not a consequence of economic activity per se, but rather contamination occurs when raw sewage is discharged without adequate treatment. The GEMS/Water project monitors fecal coliform—which are harmless bacteria found in great numbers in human and animal feces—as an indicator of the presence of the harmful pathogens. The data set includes concentrations of fecal coliform in rivers in 42 different countries. In some cases, GEMS has monitored total coliform instead of (or in addition to) fecal coliform. Total coliform are a broader class of bacteria which, unlike fecal coliform, include some organisms that are found naturally in the environment. For this reason, the concentration of total coliform is considered to be an inferior indicator of fecal contamination. Nonetheless, we estimate the relationship between levels of national income and concentrations of total coliform found in rivers located in 22 countries.

**16** Heavy metals comprise our third category of water pollution. Metals discharged by industry, mining, and agriculture accumulate

into bottom sediment, which then is released slowly over time. The metals show up in drinking water and bioaccumulate in fish and shellfish that are later ingested by humans. The GEMS/Water project monitors a number of heavy metals (as well as some other toxics), but the sample sizes for some are too small to allow statistical analysis. We examine concentrations of lead, cadmium, arsenic, mercury and nickel, all of which have reasonable numbers of observations from rivers located in at least ten countries. The health risks associated with these particular metals are many: lead causes convulsions, anemia, kidney damage, brain damage, cancer and birth defects; cadmium is associated with tumors, renal dysfunction, hypertension, and arteriosclerosis; arsenic induces vomiting, poisoning, liver damage, and kidney damage; mercury contributes to irritability, depression, kidney and liver damage, and birth defects; and nickel causes gastrointestinal and central nervous system damage and cancer.

**17** As we have noted, the GEMS data do not cover all dimensions of environmental quality. Besides the air pollutants that affect global atmospheric conditions, important omissions include industrial waste, soil degradation, deforestation, and loss of biodiversity. While we view our inability to examine the effects of growth on these forms of environmental damage as unfortunate, we believe that there is much to be learned from studying how the many indicators of air and water quality respond to changes in output levels.

### III. METHODOLOGICAL ISSUES

**18** To study the relationship between pollution and growth, we estimate several reduced-form equations that relate the level of pollution in a location (air or water) to a flexible function of the current and lagged income per capita in the country and to other covariates. An alternative to our reduced-form approach would be to model the structural equations relating environmental regulations, technology, and industrial composition to GDP, and then to link the level of pollution to the regulations, technology and industrial composition. We think there are two main advantages to a reduced-form approach. First, the reduced-form estimates give us the net effect of a nation's income on pollution. If the structural equations were estimated, one would need to solve back to find the net effect of income changes on pollution, and confidence in the implied estimates would depend upon the precision and potential

biases of the estimates at every stage. Second, the reduced-form approach spares us from having to collect data on pollution regulations and the state of technology, data which are not readily available and are of questionable validity. A limitation of the reduced form approach, however, is that it is unclear why the estimated relationship between pollution and income exists. Nevertheless, we think that documenting the reduced-form relationship between pollution and income is an important first step.

Specifically, we estimate

$$(1) \quad Y_{it} - G_{it}\beta_1 + G_{it}^2\beta_2 + G_{it}^3\beta_3 + \bar{G}_{it}\beta_4 + \bar{G}_{it}^2\beta_5 + \bar{G}_{it}^3\beta_6 + X_{it}\beta_7 + \epsilon_{it}$$

where  $Y_{it}$  is a measure of water or air pollution in station  $i$  in year  $t$ ,  $G_{it}$  is GDP per capita in year  $t$  in the country in which station  $i$  is located,  $\bar{G}_{it}$  is the average GDP per capita over the prior three years,  $X_{it}$  is a vector of other covariates, and  $\epsilon_{it}$  is an error term. The  $\beta$ 's are parameters to be estimated.

**19** For the air pollutants the dependent variable is defined as the median daily concentration of the pollutant at each site over the course of the year. The mean values of the air pollutants were not reported. Other percentiles of air pollutants were reported, and our analysis of the ninety-fifth percentile concentrations indicated qualitatively similar results. For the water pollutants we used the mean value of the pollutant over the course of the year as our dependent variable, because median values were omitted whenever there were fewer than four observations above the minimum detectable level of the measuring device.

**20** Except for two pollutants we measure the dependent variables as a concentration level (e.g.,  $\mu\text{g}$  per cubic meter). The exceptions are total coliform and fecal coliform, which we measure as  $\log(1 + Y)$ , where  $Y$  is the concentration level. The reasons for this transformation are (i) the coliform grow exponentially, (ii) the distribution of the coliform is (highly) positively skewed, and (iii) we cannot take the log of  $Y$  in some cases because the level of coliform is reported as zero whenever the reading falls below the minimum detectable level of the measuring device.

**21** The key GDP variable is taken from Summers and Heston (1991), and in principle measures output per capita in relation to a common set of international prices.<sup>5</sup> Although our measures of

<sup>5</sup> The Summers and Heston data are available only through 1988, whereas the water pollutant data are available through 1990. World Bank GDP estimates,

pollution pertain to specific cities or sites on rivers, GDP is measured at the country level. Since environmental standards are often set at a national level, using country-level GDP per capita (as opposed to local income) is arguably appropriate. Moreover, data on city or river level GDP per capita are not readily available, and are not as comparable across countries as are the Summers and Heston data. We have included a cubic of the average GDP per capita in the preceding three years to proxy the effect of "permanent income" and because past income is likely to be a relevant determinant of current environmental standards. As a practical matter, however, lagged and current GDP per capita are highly correlated, so including just current (or just lagged) GDP per capita does not qualitatively change the results. Experimentation with unrestricted dummy variables indicating ranges of GDP suggested that the cubic specification is flexible enough to describe the varied relationships between pollution and GDP.

**22** In estimating the relationship between pollution and national income, we adjusted for the year in which the measurement was taken by including a linear time trend as a separate regressor.<sup>6</sup> We did so because we did not want to attribute to national income growth any improvements in local environmental quality that might actually be due to global advances in the technology for environmental preservation or to an increased global awareness of the severity of environmental problems.

**23** We included additional covariates besides income and time to describe characteristics of the site where the monitoring stations were located and to describe the specific method of monitoring. Since these location-specific variables are unlikely to be correlated with national income, their inclusion is not necessary for unbiased estimation of the coefficients of interest. However, by including these additional variables, we are able to reduce the residual variance in the relationship between pollution and income and thus generate more precise estimates. In our estimation using the various measures of urban air pollution, we used dummy variables indicating the location of the monitoring station within the city (central city or suburban) and the nature of the land use nearby the station (industrial, commercial, residential, or unknown). We also

however, are available through 1990. To increase the sample, we used the ratio of the Summers and Heston GDP data to World Bank GDP data in 1988 to index-link the World Bank data in 1989 and 1990.

<sup>6</sup> When we experimented by including unrestricted year dummies, the coefficients on them were approximately linear, and the other coefficients were not meaningfully different.

included the population density of the city, a dummy indicating whether the city is located along a coastline (reflecting the dispersal properties of the local atmosphere), and—for the two types of suspended particles—a dummy indicating whether the city is located within 100 miles of a desert. For pollutants that were measured with different measuring devices at different stations, we included dummies indicating the type of measuring device, to account for the fact that some monitoring devices are more sensitive than others.<sup>7</sup>

**24** We used a more limited set of covariates for the water pollutants because the data set provided less information about the placement of the monitoring station. In addition to the GDP per capita terms and the time trend, we included the mean annual water temperature in the river in which the monitoring station is located.<sup>8</sup> This is a pertinent explanatory variable because, for many pollutants, the rate of dissolution depends on the temperature of the water. Finally, where appropriate, we included dummies indicating the type of measuring device used to monitor the pollutant.

**25** A final methodological issue concerns the appropriate estimator of equation (1). If there are any characteristics of the monitoring sites that influence pollution but are not included in our list of independent variables, these will induce a temporal correlation in the error term,  $\epsilon_{it}$ . To account for this, we estimate equation (1) by generalized least squares (GLS). More specifically, we assume the error term is the sum of two components:

$$\epsilon_{it} = \alpha_i + \epsilon'_{it},$$

where  $\alpha_i$  is a site-specific random component and  $\epsilon'_{it}$  is an idiosyncratic error component. We assume that  $\text{cov}(\alpha_i, \alpha_j) = 0$  and  $\text{cov}(\epsilon'_{it}, \epsilon'_{jt}) = 0$  for  $i \neq j$  and  $t \neq s$ . We employ a random-effects estimator that takes into account the unbalanced nature of our panel.

7. All of these variables except population density, location on a coast, and location near a desert, are available in the GEMS data. We derived the other variables by inspecting maps and country almanacs.

8. For about one-third of the observations, we lacked information on the mean annual water temperature. In these cases we imputed temperature values by first running a regression of the mean water temperature on the latitude of the river for the subsample containing mean temperature, and then constructing fitted values using the estimated regression coefficient and the latitude of the river with missing temperature data. In practice we suspect this procedure works well because latitude accounts for over 70 percent of the variation in mean water temperature.

#### IV. RESULTS

**26** We have estimated equation (1) for each of the pollutants described in Section II. The GLS estimates are reported in Appendixes 1–4. The tables in these appendixes also show the  $p$ -values for the three current income variables, the three lagged income variables, and the six income variables taken together. In view of the strong multicollinearity between current and lagged GDP, as well as among powers of GDP, it is difficult to infer much about the individual coefficients. However, in most cases the collection of current and lagged GDP terms is highly significant. It appears therefore that national income is an important determinant of local air and water pollution.

**27** Figures 1–IV present graphs that summarize the shape of the estimated reduced-form relationship between per capita GDP and each of the pollutants. Each figure relates to one class of environmental quality indicators: urban air quality, oxygen regime in rivers, fecal contamination of rivers, and heavy metal pollution in rivers. The graphs were constructed by multiplying GDP, GDP squared, and GDP cubed by the sum of the estimated coefficients for current and lagged GDP. We normalized by adding to this the

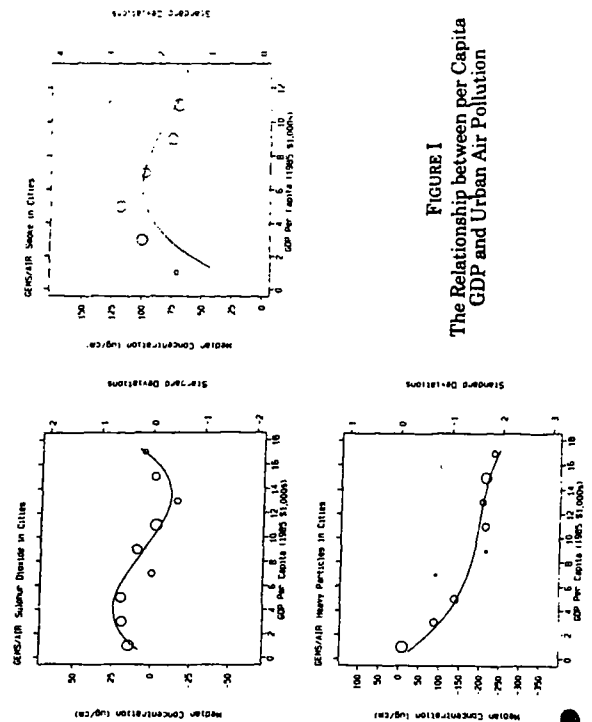


FIGURE I  
The Relationship between per Capita  
GDP and Urban Air Pollution

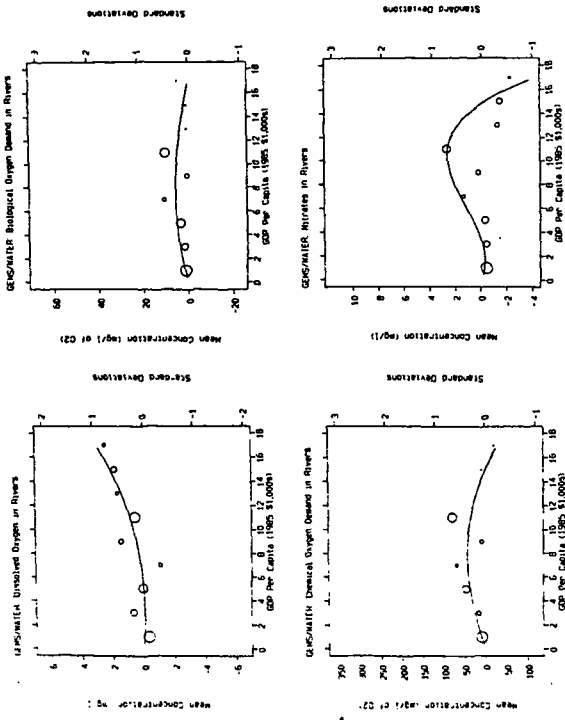


FIGURE II  
The Relationship between per Capita GDP and the Oxygen Regime in Rivers

mean value of the other variables multiplied by their corresponding coefficients. Formally, we plot  $\hat{Y}_{it}$ , where

$$(2) \hat{Y}_{it} = G_{it}(\hat{\beta}_1 + \hat{\beta}_4) + G_{it}^2(\hat{\beta}_2 + \hat{\beta}_5) + G_{it}^3(\hat{\beta}_3 + \hat{\beta}_6) + \bar{X}_{it}'\hat{\beta}_7$$

and all variables are defined as before. Each graph shows the

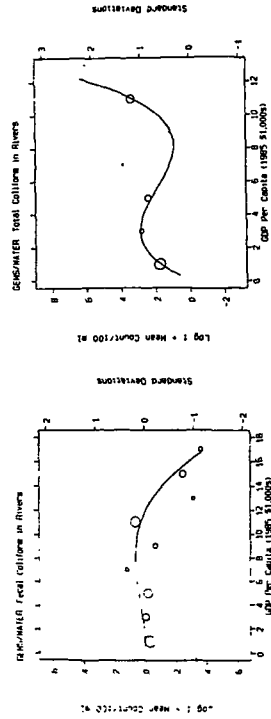


FIGURE III  
The Relationship between per capita GDP and Fecal Contamination of Rivers

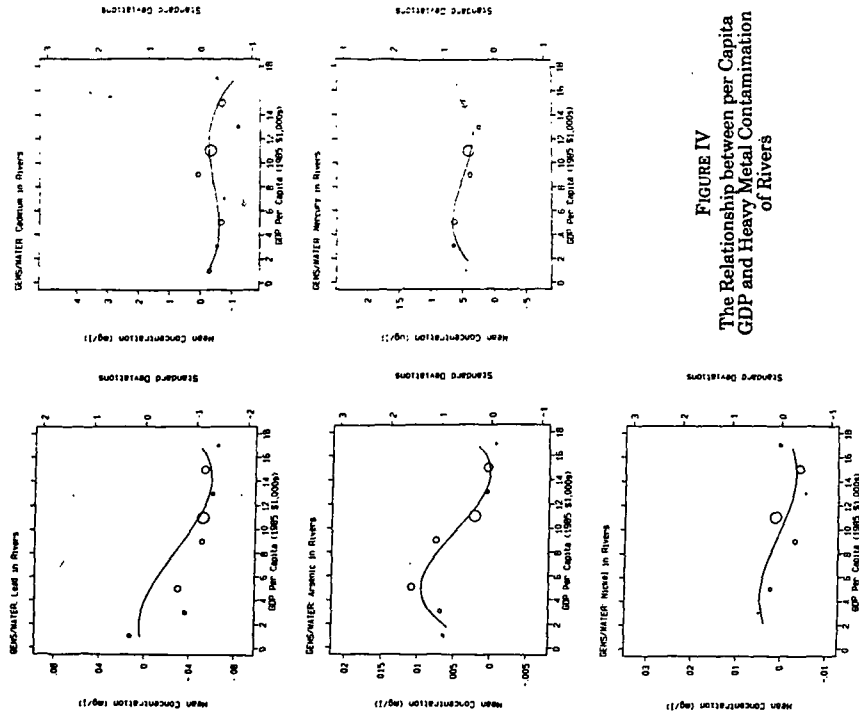


FIGURE IV  
The Relationship between per Capita GDP and Heavy Metal Contamination of Rivers

predicted level of pollution at a hypothetical site in a country with the indicated per capita GDP (and the same level of GDP in each of the prior three years) and with mean values for the other site-specific variables. On the left-hand side of each graph, we present a scale showing the original units of measurements. On the right-hand side we show an alternative scale obtained by dividing pollution levels by the standard deviation for that pollutant across all monitoring stations in our sample. This scale provides a common metric with which the different pollutants can be compared. We have set the vertical range of all of the graphs equal to

four standard deviations of the dependent variable. The relative slopes of the curves therefore reveal the relative sensitivity of the different pollutants to changes in income.

**28** In addition to the estimated (cubic) relationship between pollution and GDP, the graphs display the mean residual from the fitted equation for each \$2000 income interval. The sizes of these points have been scaled to be proportional to the number of observations in each cell. The mean residuals suggest that, in most cases, the assumed cubic functional form does not do injustice to the shape of the observed relationship between pollution and GDP. We also see from the graphs that there are relatively few observations for most pollutants at the upper extremes of income. As a consequence, the shape of the estimated relationship may be imprecisely estimated at these extreme points.

**29** We discuss first the indicators of urban air quality. Sulfur dioxide and smoke display an inverted U-shaped relationship with GDP. Pollution appears to rise with GDP at low levels of income, but eventually to reach a peak, and then to fall with GDP at higher levels of income. In the case of  $SO_2$ , the estimated relationship turns up again at very high levels of income, but the relatively small number of observations for sites with incomes above \$16,000 means that we cannot have much confidence in the shape of the curve in this range.<sup>9</sup> We find a monotonically decreasing relationship between heavy particles and per capita GDP at all levels of income in the sample range. In all three of these cases, the income variables are jointly significant at the 1 percent level. Although the income variables are highly correlated, the lagged GDP terms tend to have the lower p-values, perhaps indicating that past income has been a major determinant of current pollution standards.

**30** In Table I we examine more closely the following question: are increases in per capita GDP eventually associated with an improvement in environmental quality? The table shows the income level at which each environmental problem appears to reach its worst proportions (if such an income level can be identified). We report also the standard errors for these estimated "peaks."<sup>10</sup> Concentrations of sulfur dioxide and smoke are found to peak at a relatively early stage in national development (that is, at a level of income

9. Moreover, as a referee has pointed out, every cubic relationship must go to plus or minus infinity as income grows large. The choice made by the data can depend on small variations in the estimated curvature, and our estimates of this are not very precise in most cases.

10. The peaks are a nonlinear function of the estimated coefficient. Standard errors were calculated by the Delta method.

TABLE I  
ESTIMATED GDP PER CAPITA AT PEAK POLLUTION LEVEL, AND DERIVATIVES OF  
POLLUTION WITH RESPECT TO GDP AT \$10,000 AND \$12,000  
(STANDARD ERRORS IN PARENTHESES)

Pollutant	Peak GDP	Derivative at \$10,000	Derivative at \$12,000
Sulfur dioxide	\$4053 (355)	-5.295 (.780)	-3.065 (.910)
Smoke	6151 (539)	-8.053 (3.570)	-7.780 (8.651)
Heavy particles	NA	-5.161 (2.271)	-4.811 (2.080)
Dissolved oxygen	2703* (5328)	0.202 (0.070)	0.277 (0.080)
BOD	7623 (3307)	-0.358 (0.503)	-0.612 (0.777)
COD	7853 (2235)	-3.494 (3.470)	-7.106 (5.445)
Nitrates	10,524 (500)	0.110 (0.118)	9.384 (1.132)
Fecal coliform	7955 (1296)	-0.164 (0.075)	J.391 (0.085)
Total coliform	3043 (309)	1.083 (0.323)	2.950 (0.895)
Lead	1887 (2838)	-0.007 (0.002)	-0.005 (0.002)
Cadmium	11,632 (1096)	0.005 (0.006)	1.002 (0.004)
Arsenic	4900 (250)	-0.0014 (0.0003)	-0.0011 (0.0002)
Mercury	5047 (1315)	-0.057 (0.039)	-0.013 (0.037)
Nickel	4113 (3825)	-0.001 (0.001)	-0.0009 (0.0006)

a. We report the trough rather than the peak for dissolved oxygen, because higher levels are desirable in this case.  
NA: Not applicable (because relationship is monotonically decreasing)

roughly equal to that of Mexico or Malaysia today). The tab also reports the estimated slope of the relationship between pollution and per capita GDP at \$10,000 and \$12,000, and the associated standard errors. These estimates allow us to assess how confident we can be that pollution problems actually will be abating once a country reaches a middle-income level. For all three urban air pollutants, we find that increases in income are associated with lower concentrations at both \$10,000 and \$12,000, and we can

reject the hypothesis that the relationship is actually flat or upward sloping for five of the six estimates.

**31** Next we turn to the oxygen regime in rivers. The income terms are jointly significant at less than the 1 percent level in two cases (dissolved oxygen and nitrates), at less than the 10 percent level in one case (BOD), and at only the 22 percent level in the remaining case (COD). Again the lagged income terms tend to be more significant than the current income terms. And again we find an inverted U-shaped relationship between income and the three measures of environmental damage, and a U-shaped relationship between income and the one direct measure of environmental quality (i.e., dissolved oxygen).

**32** In Table I we see that the turning points for these water quality indicators come somewhat later than those for urban air quality. The estimated turning points are at least \$7500 for three of the measures, and in the case of the fourth (dissolved oxygen) the confidence interval includes a wide range of incomes. As for our tests of the association between environmental quality and per capita GDP in the middle-income range, we find a statistically significant beneficial relationship only for dissolved oxygen (at both \$10,000 and \$12,000) and for nitrates (at \$12,000). However, inasmuch as BOD, COD and dissolved oxygen are all indicator variables for essentially the same phenomenon, the consistency of the estimates across these different samples gives us some added confidence in each one.

**33** Our third group of environmental indicators relates to fecal contamination of rivers. The findings for fecal coliform are quite similar to those we have seen before. The income terms are jointly significant at less than the 1 percent level, and the lagged income terms are themselves significant whereas the current income terms are not. This latter result is quite plausible, because fecal contamination does not stem from economic activity *per se*. Since contamination can be controlled by the treatment of raw sewage, our result could be explained by a lagged response of treatment plant construction to per capita income growth.

**34** Figure III indicates that increases in per capita GDP are associated with roughly constant levels of fecal coliform until a country reaches a real income level of about \$8000. Thereafter, fecal contamination falls sharply with income. The estimated slope of the relationship is significantly negative at both the \$10,000 and \$12,000 levels of per capita GDP.

**35** The results relating to total coliform are rather baffling. Concentrations of total coliforms are found to rise with income: first, then fall, and then rise again sharply. By \$10,000 the relationship is upward sloping and statistically significant. Moreover, current income is more significantly associated with the indicator than past income. We have no explanation for these findings. Perhaps they reflect a spurious relationship inasmuch as the presence of some types of coliform does not necessarily indicate fecal contamination, and these bacteria have many nonanthropogenic sources.

**36** Finally, we turn to the heavy metals. A statistically significant relationship exists between concentrations of pollution and current and lagged GDP only for lead, cadmium, and arsenic.<sup>11</sup> For lead the relationship is mostly downward sloping; for cadmium it is flat with perhaps a slight downturn at high levels of income; for arsenic it resembles an inverted U. The peak concentration of arsenic is estimated to occur at a per capita GDP of \$4900, with a standard error of \$250. The estimated slope of the curve is negative for lead and arsenic at both \$10,000 and \$12,000, and is statistically significant in each case.

**37** To summarize, we find little evidence that environmental quality deteriorates steadily with economic growth. Rather, we find for most indicators that economic growth brings an initial phase of deterioration followed by a subsequent phase of improvement. We suspect that the eventual improvement reflects, in part, an increased demand for (and supply of) environmental protection at higher levels of national income. The turning points for the different pollutants vary, but in most cases they occur before a country reaches a per capita income of \$8000. For seven of the fourteen indicators we find a statistically significant positive relationship between environmental quality and income for a middle-income country with a per capita GDP of \$10,000. Only in one case (total coliform) do we find a significant adverse relationship at this income level.

**38** Let us comment briefly on some of the other covariates included in our models. For the most part these variables have plausible effects. For example, dissolved oxygen is negatively associated with mean water temperature, whereas BOD, COD, and

11. Note that the number of observations in our samples for the heavy metals is much smaller than for most of the other pollutants.

the coliforms are all positively associated with temperature, as the physical properties of water would lead one to expect. Air pollution is less severe in coastal cities (all else being equal), perhaps reflecting the dispersal caused by offshore winds or a smaller average inflow of pollution from neighboring cities. On the other hand, heavy particles are found in higher concentrations in cities located near a desert, while smoke is especially prevalent in densely populated areas.

**39** Of particular interest are the estimated coefficients on the time variable. These coefficients indicate the extent to which environmental problems have been worsening or abating with time, apart from the effects of an expanding world economy. The state of the environment may deteriorate with time if concentrations of pollutants accumulate or if consumer tastes shift toward pollution-intensive goods. The opposite may occur if technological innovation makes abatement less costly or if increasing awareness causes an autonomous shift in public demands for environmental safeguards. We find that, at least as regards sulfur dioxide and smoke, urban air quality has tended to improve over time, once the effects of income have been controlled for. However, the opposite is true for most measures of river contamination.

## V. CONCLUSIONS

**40** We have examined the reduced-form relationship between national GDP and various indicators of local environmental conditions using panel data from the GEMS. Our indicator variables relate to urban air pollution and contamination in river basins. While admittedly these measures cover relatively few dimensions of environmental quality, our study is the most comprehensive possible given the limited availability of comparable data from different countries.

**41** Contrary to the alarmist cries of some environmental groups, we find no evidence that economic growth does unavoidable harm to the natural habitat. Instead we find that while increases in GDP may be associated with worsening environmental conditions in very poor countries, air and water quality appear to benefit from economic growth once some critical level of income has been reached. The turning points in these inverted U-shaped relationships vary for the different pollutants, but in almost every case they occur at an income of less than \$8000 (1985 dollars). For a

country with an income of \$10,000, the hypothesis that further growth will be associated with deterioration of environmental conditions can be rejected at the 5 percent level of significance for many of our pollution measures.

**42** Our findings are broadly consistent with those reported in other studies. For example, the World Bank Development Report [1992] also reports an inverted U-shaped relationship between per capita income and concentrations of sulfur dioxide and suspended particulates in city air, with turning points even lower than those suggested here. Moreover, they find that both the percentage of the population without access to safe water and the percentage of urban population without adequate sanitation decline steadily at all levels of income. Shafik and Bandyopadhyay [1992] find an inverted U-shaped relationship between total and annual deforestation and national income, while Selden and Song [1992] find similarly for estimates of per capita national emissions of sulfur dioxide, particulates, oxides of nitrogen, and carbon monoxide (albeit, with somewhat higher turning points).<sup>12</sup> Only in the cases of municipal waste per capita (studied by the World Bank) and carbon dioxide emissions (studied by both the World Bank and Holtz-Eakin and Selden [1992]) do environmental conditions appear to still be worsening with growth at the income levels of even the most prosperous economies.

**43** Several points need to be emphasized concerning the interpretation of our findings. First, even for those dimensions of environmental quality where growth seems to have been associated with improving conditions, there is no reason to believe that the process has been an automatic one. In principle, environmental quality might improve automatically when countries develop if they substitute cleaner technologies for dirtier ones, or if there is a very pronounced effect on pollution of the typical patterns of structural transformation. Our methodology does not allow us to reject these hypotheses, or even to investigate the means by which income changes influence environmental outcomes. However, a review of the available evidence on instances of pollution abatement (see,

12. The authors suggest that the late turning points (estimated to range from \$8768 for suspended particulates to \$12,435 for carbon monoxide, and even higher for oxides of nitrogen, but the latter with a very large standard error) may indicate that urban pollution receives earlier public attention than does pollution in rural areas. Their findings may also reflect the fact that the emissions coefficients are only "guesstimates" and these estimates are likely to involve substantial mismeasurement in some of the poorest countries.



e.g., OECD [1991]) suggests that the strongest link between income and pollution in fact is via an induced policy response. As nations or regions experience greater prosperity, their citizens demand that more attention be paid to the noneconomic aspects of their living conditions. The richer countries, which tend to have relatively cleaner urban air and relatively cleaner river basins, also have relatively more stringent environmental standards and stricter enforcement of their environmental laws than the middle-income and poorer countries, many of which still have pressing environmental problems to address.

Second, it is possible that downward sloping and inverted U-shaped patterns might arise because, as countries develop, they cease to produce certain pollution-intensive goods, and begin instead to import these products from other countries with less restrictive environmental protection laws. If this is the main explanation for the (eventual) inverse relationship between a country's income and pollution, then future development patterns could not mimic those of the past. Developing countries will not always be able to find still poorer countries to serve as havens for the production of pollution-intensive goods. However, the available evidence does not support the hypothesis that cross-country differences in environmental standards are an important determinant of the global pattern of international trade (see, e.g., Tobey [1990] and Grossman and Krueger [1993]). While some "environmental dumping" undoubtedly takes place, the volume of such trade is probably too small to account for the reduced pollution that has been observed to accompany episodes of economic growth.

Finally, it should be stressed that there is nothing at all inevitable about the relationships that have been observed in the past. These patterns reflected the technological, political, and economic conditions that existed at the time. The low-income countries of today have a unique opportunity to learn from this history and thereby avoid some of the mistakes of earlier growth experiences. With the increased awareness of environmental hazards and the development in recent years of new technologies that are cleaner than ever before, we might hope to see the low-income countries turn their attention to preservation of the environment at earlier stages of development than has previously been the case.

APPENDIX 1:  
THE DETERMINANTS OF URBAN AIR POLLUTION  
Random Effects Estimation  
Dependent Variable Is Annual Median Concentration  
(standard errors in parentheses)

Variable	Sulfur dioxide	Smoke	Heavy particles
Income (thousands)	-7.37 (9.16)	24.54 (20.87)	17.36 (21.54)
Income squared	1.03 (1.11)	-7.64 (3.59)	-0.922 (2.685)
Income cubed	-0.0337 (0.0384)	0.443 (0.171)	0.0136 (0.0903)
Lagged income	20.89 (9.76)	12.59 (22.00)	-60.69 (23.33)
Lagged income squared	-3.22 (1.26)	3.44 (3.97)	4.35 (3.12)
Lagged income cub d	0.117 (0.0461)	-0.313 (0.199)	-0.115 (0.112)
Coast	-12.72 (3.79)	-33.68 (8.35)	-21.11 (12.12)
Desert	—	7.08 (11.19)	161.6 (26.1)
Central city	3.06 (4.31)	4.05 (8.87)	26.24 (14.45)
Industrial	0.485 (5.26)	-11.56 (10.75)	23.80 (17.37)
Residential	-11.11 (4.85)	-13.92 (9.37)	7.35 (16.35)
Population density (pop/sq mile)	1.14 (1.23)	2.39 (0.853)	-0.699 (1.404)
Year	-1.40 (0.218)	-1.23 (0.359)	0.744 (0.631)
P-value (income and lagged income combined)	<.0001	<.0001	<.0001
P-value (income only)	.852	<.0001	.556
P-value (lagged income only)	.096	<.0001	.0003
Mean of dependent variable	33.24	42.21	146.62
$\sigma^2_\epsilon$	856	1677	5774
$\sigma^2_\eta$	396	340	1752
$\sigma^2_\gamma$	1109	1818	16,078
Sample size	1352	488	1021

Equations also include an intercept, a dummy to indicate that the type of area is unknown, and a dummy to indicate that the measurement device is a gas bubbler.  $\sigma^2_\epsilon$  is the estimated variance of the common-to-site component of the residuals, and  $\sigma^2_\eta$  is the estimated variance of the idiosyncratic component.  $\sigma^2_\gamma$  is the sample variance of the dependent variable (median concentration measured in  $\mu\text{g}/\text{m}^3$ ).

APPENDIX 2:  
THE OXYGEN REGIME IN RIVERS  
Random Effects Estimation  
Dependent Variable Is Annual Mean Concentration  
(standard errors in parentheses)

Variable	Dissolved oxygen	BOD	COD	Nitrates
Income (thousands)	1.33 (0.70)	1.41 (4.54)	-19.66 (21.54)	-1.16 (1.34)
Income squared	-0.127 (0.081)	0.335 (0.614)	0.498 (4.664)	0.188 (0.171)
Income cubed	0.004 (0.003)	-0.022 (0.024)	0.015 (0.182)	-0.007 (0.006)
Lagged income	-1.38 (0.73)	0.151 (4.766)	29.90 (69.01)	0.726 (1.401)
Lagged income squared	0.134 (0.091)	-0.458 (0.687)	-1.02 (5.36)	-0.036 (0.190)
Lagged income cubed	-0.003 (0.003)	0.024 (0.029)	-0.026 (0.221)	-0.002 (0.007)
Mean temperature	-0.098 (0.022)	0.246 (0.131)	1.22 (0.81)	0.023 (0.034)
Year	-0.061 (0.019)	0.031 (0.108)	0.786 (0.671)	-0.077 (0.036)
P-value (income and lagged income combined)	.0004	.069	.224	.0003
P-value (income only)	.209	.039	.352	.663
P-value (lagged income only)	.113	.105	.154	.084
Mean of dependent variable	8.12	6.65	48.44	1.53
$\sigma_{\eta}^2$	5.14	243	5301	12.28
$\sigma_{\epsilon}^2$	3.95	101	2557	6.30
$\sigma_{\nu}^2$	10.58	513	14304	15.02
Sample size	1599	1284	850	1017

Equations also include an intercept. Where mean temperature is missing in the data, an estimate based on site latitude is used.  $\sigma_{\eta}^2$  is the estimated variance of the common-to-site component of the residuals, and  $\sigma_{\epsilon}^2$  is the estimated variance of the idiosyncratic component.  $\sigma_{\nu}^2$  is the estimated variance of the dissolved oxygen component.  $\sigma_{\nu}^2$  is the sample variance of the dependent variable (median concentration in mg/l).

APPENDIX 3:  
FECAL CONTAMINATION OF RIVERS  
Random Effects Estimation  
Dependent Variable Is 1 + Log Annual Mean Concentration  
(standard errors in parentheses)

Variable	Fecal coliforms	Total coliforms
Income (thousands)	-0.846 (0.624)	-3.71 (2.17)
Income squared	0.110 (0.072)	0.473 (0.332)
Income cubed	-0.0038 (0.0024)	-0.016 (0.014)
Lagged income	0.825 (0.657)	5.88 (2.32)
Lagged income squared	-0.076 (0.081)	-0.962 (0.383)
Lagged income cubed	0.001 (0.003)	-0.045 (0.018)
Mean temperature	0.063 (0.021)	0.095 (0.037)
Year	0.113 (0.018)	0.192 (0.038)
P-value (income and lagged income combined)	<.0001	.0013
P-value (income only)	.479	.003
P-value (lagged income only)	.005	.040
Mean of dependent variable	6.83	8.32
$\sigma_{\eta}^2$	5.61	4.80
$\sigma_{\epsilon}^2$	2.64	2.40
$\sigma_{\nu}^2$	10.11	8.18
Sample size	1261	494

Equations also include an intercept and a dummy to indicate sampling method. Where mean temperature is missing in the data, an estimate based on site latitude is used.  $\sigma_{\eta}^2$  is the estimated variance of the common-to-site component of the residuals, and  $\sigma_{\epsilon}^2$  is the estimated variance of the idiosyncratic component.  $\sigma_{\nu}^2$  is the estimated variance of the dependent variable (1 + mean concentration measured in count/100 ml).

APPENDIX 4:  
HEAVY METAL CONTAMINATION OF RIVERS  
Random Effects Estimation  
Dependent Variable Is Annual Mean Concentration  
(standard errors in parentheses)

Variable	Lead	Cadmium	Arsenic	Mercury	Nickel
Income (thousands)	0.020 (0.032)	-0.033 (0.114)	0.0034 (0.0031)	0.246 (0.514)	-0.019 (0.020)
Income squared	0.0005 (0.0029)	0.011 (0.010)	-0.0003 (0.0003)	-0.039 (0.047)	0.0017 (0.0016)
Income cubed	0.00002 (0.00009)	-0.0005 (0.0003)	0.00001 (0.00001)	0.0015 (0.0015)	-0.00005 (0.00004)
Lagged income	0.025 (0.034)	0.0024 (0.1256)	0.0010 (0.00031)	0.055 (0.533)	0.022 (0.021)
Lagged income squared	-0.002 (0.003)	-0.0067 (0.0119)	-0.0003 (0.0003)	-0.003 (0.052)	-0.0021 (0.0019)
Lagged income cubed	0.0003 (0.00010)	0.0004 (0.029)	0.00001 (0.00001)	0.00007 (0.00166)	0.00006 (0.00005)
Mean temperature	0.009 (0.0007)	-0.0038 (0.0018)	-0.0004 (0.0001)	-0.010 (0.011)	0.000002 (0.00019)
Year	0.0006 (0.00006)	0.0041 (0.0020)	0.0003 (0.0001)	-0.018 (0.010)	-0.00048 (0.00017)
P-value (income and lagged income combined)	.003	.016	<.0001	.670	.289
P-value (income only)	.370	.022	.696	.565	.629
P-value (lagged income only)	.580	.040	.128	.995	.657
Mean of dependent variable	0.19	.044	0.056	.286	.009
$\sigma^2_\epsilon$	.0024	.0046	.000027	.631	.000029
$\sigma^2_\eta$	.0015	.0162	.000009	.322	.000060
$\sigma^2_\xi$	.0021	.028	.000048	.619	.000123
Sample size	610	649	368	637	350

P-questions also include an intercept and a dummy indicating sampling method. Where mean temperature is missing in the data, an estimator based on site latitude is used.  $\sigma^2_\epsilon$  is the estimated variance of the common-to-site component of the residuals,  $\sigma^2_\eta$  is the estimated variance of the idiosyncratic component,  $\sigma^2_\xi$  is the sample variance of the dependent variable (median concentration measured in  $\mu\text{g/l}$  for mercury,  $\mu\text{g/l}$  for all others).

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## APPENDIX 2C: AN UNANALYSED COPY OF H34

PAST AND PRESENT

NUMBER 145

BALLADS, LIBELS AND POPULAR  
RIDICULE IN JACOBAN ENGLAND

- 1 Very little is known about what it was like to live on the margins of literacy in early modern England. By far the majority of people in this society were illiterate in some sense. Their inability to write has left the historian with few traces of their thoughts and feelings and, although they were more likely to possess reading skills, it is very difficult to assess the circulation or reception of most commonly known texts, either in manuscript or print. Much of the rich fabric of this partially literate and quasi-oral culture is irretrievably lost.
- 2 In recent years, a number of attempts have been made to penetrate the mental world of ordinary men and women in sixteenth- and seventeenth-century England through the medium of contemporary "popular literature". Sufficient numbers of prints and pamphlets, newsbooks and almanacs, broadside ballads and chapbooks are extant to invite such investigation. By paying attention to the price and print runs as well as to the form and content of this material, inferences have been made about the markets to which it was directed and conclusions drawn about the milieu in which it circulated. A humble audience has been assumed and a "popular" culture imagined.<sup>1</sup>
- 3 But such deductions are highly speculative. Due to the paucity of evidence, it is scarcely possible to contextualize any piece of this literature and to place it in the hand of an actual recipient in a given time and place, much less to recapture the way in which it might have been read or heard, internalized and appropriated. Other than limited information about a few hack writers, almost

<sup>1</sup> See, for example, Victor E. Neuburg, *Popular Literature: A History and a Guide* (London, 1977); Peter Burke, *Popular Culture in Early Modern Europe* (London, 1978), chs. 5-6; Bernard Capp, *Astrology and the Popular Press: English Almanacs, 1500-1800* (London, 1979); Margaret Spufford, *Small Books and Pleasant Histories: Popular Fiction and its Readership in Seventeenth-Century England* (London, 1981); Bernard Capp, "Popular Literature", in Barry Reay (ed.), *Popular Culture in Seventeenth-Century England* (London, 1985), pp. 198-243; J. A. Sharpe, "Plebeian Marriage in Stuart England: Some Evidence from Popular Literature", *Trans. Roy. Hist. Soc.*, 5th ser., xxxvi (1986), pp. 69-90; Tessa Watt, *Cheap Print and Popular Piety, 1550-1640* (Cambridge, 1991).

nothing is known about who created these texts; other than scattered glimpses of hawkers and chapmen, very little can be ascertained concerning the scale and extent of their distribution; other than the existence of a few celebrated gentlemanly collectors, it is impossible to say precisely who read them and why. In short, we have the texts but not the contexts.<sup>2</sup>

4 Thus, important questions about cheap print remain unanswered, and perhaps unanswerable. Did broadsides and chapbooks regularly penetrate to the lowest levels of rural society, or were they fundamentally destined for urban environments, for the gentry and the literate middling sorts? To what extent were they didactic, instructing and moralizing, fashioning the outlook and conditioning the responses of their recipients; in what senses were they reflective, mirroring the cultural norms and illustrating the sensibilities, beliefs and aspirations of their audiences? Can they justly be taken to represent the enshrining in text of an oral currency from village communities, or are they evidence merely of the transmutation and popularization of more literate and learned traditions? It is uncertain, therefore, if and how print was consumed by the majority of English men and women in this period. But what is certain is that it was in no way produced by them, other than in the sense that all consumption is a form of reproduction. Studies of ephemeral literature largely fail in allowing us to see the common people as the creators of their own cultural repertoire, as the authors of their own identities or the architects of their own experience.

5 There are, however, ways in which to recognize those at the lowest levels of society as more active agents in the construction of their forms of expression and to get closer to a more demonstrably plebeian genre in story and song. For it is possible to penetrate beneath the level of print and recover something of the extempore rhymes, verses and ballads which ordinary men and women frequently composed themselves and sang or recited among their neighbours. Such things were occasionally preserved amid legal records when they had as their subject an individual who believed the composition to be personally libellous and who,

<sup>2</sup> See the remarks in Barry Reay, "Popular Literature in Seventeenth-Century England", *Jl Peasant Studies*, x (1983), pp. 243-9; Roger Chartier, "Culture as Appropriation: Popular Cultural Uses in Early Modern France", in Steven L. Kaplan (ed.), *Understanding Popular Culture: Europe from the Middle Ages to the Nineteenth Century* (Berlin, 1984), pp. 231-2; Bob Scribner, "Is a History of Popular Culture Possible?", *Hist. European Ideas*, x (1989), pp. 175-6.

in taking the case before the courts, was required to produce a copy of it in evidence. In the ostensibly unpromising source of proceedings at law, therefore, can be found a "literature" explicitly by the people and for the people, dynamic and contextualized. Unlike most commercial productions, it is clear who invented or wrote these songs, and the circumstances surrounding their creation are explicit. It is possible to know exactly where they were circulated and how they were disseminated among a largely illiterate audience. Born of identifiable situations and less bound by conventional tropes than was much cheap print, they offer perhaps a more vivid and responsive insight into popular attitudes and values, and one which can be positively tested against the responses and reactions which they evoked. Through such sources we can relocate the usually silent majority as producers and initiators in the cultural process and gain an immediacy of access to popular mentalities which it is rare to find.

## I

6 During December 1605 there was a commotion at the inn of Edward Frame in Evesham, Worcs. For, in a room at the Swan, a group of townspeople had hatched a plot to blacken the name of a certain George Hawkins, and so make him the laughing-stock of the neighbourhood. Hawkins, a local squire, an attorney of the borough court and a steward of the hundred of Blakenhurst, was alleged to have fathered a bastard child. It was a transgression, real or imagined, for which the conspirators were to censure him by means of a piece of imaginative ridicule of a kind familiar to life in early modern England. For these people were composing a "libel", and George Hawkins was to be "balladed".<sup>3</sup>

7 None of the libellers seem to have been able to write, since in order to commit their message to paper, and so give it maximum publicity, they sought the services of three travelling tradesmen from Coventry, Lancelot Ratsey, Alexander Staples and William Hickman, who happened to be lodging at the Swan. They told them that Hawkins "was a man of that lewdenes" which they claimed and persuaded them to serve their turn. Accordingly, Ratsey, "dyd in paper drawe . . . three severall pictures or images,

<sup>3</sup> Public Record Office, London (hereafter P.R.O.), STAC 8/178/20; STAC 8/178/37.

decyferinge and notefyng one of them to be the pcytuer of [George Hawkins]; one other to be the picture of one who was supposed to be a whore and had had a bastarde; the thirde and other to be the picture of the bastard ytsel". Beneath these drawings, furthermore, he "dyd wryte in the sayde paper . . . a moste false, filthye, slanderous and defamous lybell" to the following effect:

I canne noe more,  
This is the whore,  
Of cowardye George Hawkins  
He gott with childe,  
In a place moste wilde,  
Which for to name yt is a shame.  
Yet for your satsyfactione,  
I will make relatione,  
It was in a privey,  
A place moste filthy.  
As gent you may judge,  
Yet nothinge to bade,  
For a knave and a drabbe,  
And soe they praye goe trudge.  
  
This is the bastarde,  
With his father the dastard,  
George Hawkins highte he soe.  
In all this shire,  
There is not a squire,  
More like a knave I trowe.  
O cursed seede,  
My harte dothe bleede,  
To thinke howe thowe woist born.  
To the whore thy mother,  
And the knave thy father,  
An everlastinge scorne.

8 This done, Ratsey made multiple copies of the ballad and "did drawe the same uppon a walle". He and the others then set out to "caste abrode, devulge, publishe, and singe the same in dyverse and sonderye open and publicke places, and dyd sett upp and fix the same uppon dyverse and sundry doores, walls and posts to the intente that the same might be made knowne unto all manner of persones whatsoever, to the utter infame, scandale and disgrace of [Hawkins]". At the Swan they performed the scurrilous ditty and "dyd fix the same uppon walls and doores in the said house to the intente that all persones might take notice thereof". They "did laughe and jeste att the said pictures", encouraging strangers passing through to do the same. Finally, they gave copies to

Frame's servant, George Hooke, to distribute in the other tipping-houses in and around Evesham throughout that and the following month. So it was, in the face of this highly public and carefully orchestrated defamation of character, that George Hawkins prosecuted his assailants in one of the highest courts with jurisdiction in such matters, that of Star Chamber at Westminster.

9 The case of George Hawkins provides a vivid, though by no means untypical, example of the way in which ordinary men and women in this period composed and had written out extempore songs in order to publicize news or rumour, information or entertainment. These were the home-made ballads of contemporary society. In the absence of print, and even of writing skills, a "pen-man" had to be sought; in lieu of woodcuts, drawings were made; without a hawker, personal efforts to distribute copies and perform renderings were required. In the first instance dissemination was by oral means, by songs taught to others; but such things were very often written out too, in order to maximize the circulation and to add the visual dimension of something pasted up in public. If cheap print was an ephemeral genre, read and then thrown away, too flimsy to last very long, too worthless to be listed in any inventory or catalogue, then these pieces of popular doggerel were truly transient. When they were written down at all, the scraps of paper must soon have perished and were unlikely to have been collected. Only those which featured a person who considered the material to be libellous and took the matter to court had much chance of survival. Of course, "libels", contentious and scurrilous as they were, may not be representative examples of popular song in general, but they do at least concern issues which preoccupied contemporaries and offer a unique insight into the way verses were created and broadcast.<sup>4</sup>

10 The many traces of these libels in remaining court records from around the country throughout the early modern period give some impression of the frequency with which people used this poetic medium in a variety of contexts. In 1574, for example, a group of people were said to be causing strife at Rye, Sussex, by their "accustome to affixe upon diverse men's dores certeine

<sup>4</sup> For a pioneering study of this genre, see C. J. Sisson, *Last Plays of Shakespeare's Age* (Cambridge, 1936); and for an excellent more recent discussion, Martin Ingram, "Ridings, Rough Music and Mocking Rhymes in Early Modern England", in Reay (ed.), *Popular Culture in Seventeenth-Century England*, pp. 166-97.

infamous libells and skrolls containing dishonest reproche . . . .” William and Elizabeth Trene of Rainham, Essex, were accused a decade later of scandalously making “a filthie ryme, of the most parte of the inhabitantes of this parishe”. Among numerous like rhymers was Joan Gomme of Thetford, Norfolk, presented in 1606 “for that she hath made and doth exercise the makeinge of libellous and lascivious ballads by and of her neighbors”. In 1620, Robert Maundrell of Compton Bassett, Wilts., was said to have “framed, contrived and published a very infamous and scandalous wrightinge, in the nature of a libell, tending to the disgrace of his father-in-lawe Richard Miller and his wife and daughters and [John Burchall’s] disgrace and his wife’s, and have scattered copies thereof abroad, and singe it in the open hearing of divers persons”. John Vaux, the notorious conjurer-parson of St Helen’s in Bishop Auckland, County Durham, was charged before the ecclesiastical authorities in 1633 that, among other misdemeanours, he “did make and contrive scurrilous libells and epigrams” and that he had “a written booke, in which there was verse made against Sir Charles Wrenn, knight, and divers other gentle-men of the countrie”. In like sort, Mary Shepperd of Furneux Pelham, Herts., was said in 1652 to have framed and contrived certain rhymes and songs against a neighbour, Robert Pompheritt; while late in 1684 a group of men from Long Lawford, Warks., was in trouble for similarly abusing a local widow and her daughter.<sup>5</sup>

Some people seem to have made it their continual and regular sport to engage in this kind of lyrical ridicule. For example,

<sup>5</sup> Historical Manuscripts Commission. (hereafter H.M.C.), *Thirteenth Report: Appendix, iv* (London, 1892), p. 36; *A Series of Presentments and Proceedings in Criminal Causes, Extending from the Year 1475 to 1640; Extracted from Act-Books of Ecclesiastical Courts in the Diocese of London*, ed. W. H. Hale (London, 1847), p. 178; Cambridge University Library, Ely Diocesan Records, B2/24, fo. 142; *Records of the County of Wiltshire, being Extracted from the Quarter Sessions Great Rolls of the Seventeenth Century*, ed. B. H. Cunningham (Devizes, 1932), p. 69; *The Acts of the High Commission Court within the Diocese of Durham*, ed. W. H. D. Longstaffe (Surtees Soc., xxiv, Durham, 1858), pp. 34-6; *Herford County Records*, ed. W. J. Hardy, 6 vols. (Herford, 1905-30), i, p. 96; *Warwick County Records*, ed. S. C. Racliffe and H. C. Johnson, 9 vols. (Warwick, 1935-64), viii, p. 182. For some printed cases quoting the actual verses, see *The Archdeacon’s Court: Liber actonum, 1584*, ed. E. R. C. Brinkworth, 2 vols. (Oxon. Rec. Soc., xxiii-xxiv, Oxford, 1942-6), i, p. 12; “Extracts from the records of the Wiltshire Quarter Sessions”, ed. R. W. Merriman, *Wiltz. Archaeol. and Nat. Hist. Mag.*, xxii (1885), pp. 215-17; H.M.C., *Tenth Report: Appendix, iv* (London, 1885), p. 491; H.M.C., *Various Collections, i* (London, 1901), pp. 78, 90; F. G. Emmison, *Elizabethan Life: Disorder* (Chelmsford, 1970), pp. 59-60, 68, 69, 72-3.

“certeine lewde youthes” from Eccleshall, Staffs., were said in 1605 to be such eavesdroppers that the good people of the town could “speake nothinge in their beddes, the man with his wife, or one man with an other, but they heare what they talke, and make rythmes of yt when they have done, and scatter them abroad in the streetes to the breedinge of greate mischeefe, and malicious stomakinge of one man against an other”. A few years later, John Swift, a cleric from Havant, Hants, was described as being “a knowne and comon libeller and contriver of false and slaunderous libells and pamphlets” which he would “by waye of jeste and merimente, skcoffinglye singe, divulge and publish . . . att diverse and sundrye tymes and in diverse places to diverse persons”. In 1648 the Quaker leader George Fox attended a court at Mansfield, Notts., and afterwards was “moved to go and speak to one of the wickedest men in the country, one who was a common drunkard, a noted whore-master, and a rhyme-maker”.<sup>6</sup>

References in contemporary literature reinforce the impression that this phenomenon was a familiar part of the cultural landscape. The fifth book of Spenser’s *Faerie Queene*, for example, makes mention both of the practice and of its punishment:

There as they entered at the Scriene, they saw  
Some one, whose tongue was for his trespasse vyle  
Nayld to a post, adjudged so by law:  
For that therewith he falsely did reuyle,  
And foule blasphemie that Queene for forged guyle,  
Both with bold speeches, which he blazed had,  
And with lewd poems, which he did complaye;  
For the bold title of a Poet bad  
He on himselfe had ta’en, and rayling rymes had sprad.

Jacobean drama is full of allusions to the extempore ballads and libels exchanged in anger and mockery by all manner of people. ‘I’ll find a friend shall right me, and make a ballad of thee, and thy cattle all over’, is the warning Joan Trash the gingerbread-woman offers to Leatherhead the hobby-horse seller at Ben Jonson’s Bartholomew Fair. ‘I am afraid of nothing but I shall be balladed’, frets the eponymous hero in George Chapman’s *Monsieur d’Olive* (1606). Thomas Heywood’s character, the Cripple of Fanchurch, claims to have stolen some “songs and

<sup>6</sup> *The Staffordshire Quarter Sessions Rolls, 1581-1606*, ed. S. A. H. Burne, 5 vols. (William Salt Archaeol. Soc., Kendal, 1931-40), v, p. 238; P.R.O., STAC B/185/23, m. 2; STAC 8/263/15; *The Journal of George Fox*, ed. John L. Nickalls (Cambridge, 1952), pp. 26-7.

ditties" from a "sharp-witted, bitter-tongu'd" versifier of his town, "rolles, and scrolls, and bundles of cast wit, such as durst never visit Paul's Church-yard", and from these he can, when "in company at alehouse, taverne, or an ordinary, vpon a theame make an extemporall ditty". In Philip Massinger's *The Parliament of Love* (1624), Charmont threatens to have Lamira:

Picterd as thou art now, and this whole story  
Sunge to some villanous tune in a lewd ballet,  
And make thee notorious in the world,  
That boyes in the streetes shall hoot at thee.<sup>7</sup>

13 Indeed, plays and interludes themselves were commonly composed to add a dramatic element to libellous verses. Some of the best writers of the day were apparently involved in what must have been, by its topicality, a popular satirical genre on the London stage. At a more amateur level in the localities, meanwhile, people regularly acted out the infamies of their neighbours in improvised jig and song-drama.<sup>8</sup>

## II

14 Makers of ballads and libels were regularly being brought before the courts in early modern England. Libel and slander had traditionally been considered moral offences, dealt with by the ecclesiastical authorities, but during this period they also came to be

<sup>7</sup> Edmund Spenser, *The Faerie Queene* (1596), V, ix, 25, in *Spenser: Poetical Works*, ed. J. C. Smith and E. De Selincourt (Oxford, 1912), p. 318 (I am grateful to Andrew McCrae for drawing this reference to my attention); Ben Jonson, *Bartholomew Fayre* (1631), II, ii, in *The Works of Ben Jonson*, ed. C. H. Herford and Percy Simpson, II vols (Oxford, 1925-52), vi, p. 41; George Chapman, *Monsieur d'Olive* (1606), III, i, in *The Works of George Chapman: Plays*, ed. R. H. Shepherd (London, 1874), p. 129; Thomas Heywood, *The Fayre Mayde of the Exchange* (1607), III, ii, in *The Dramatic Works of Thomas Heywood*, 6 vols. (London, 1874), ii, pp. 46-7; Philip Massinger, *The Parliament of Love* (1624), IV, v, in *The Plays and Poems of Philip Massinger*, ed. Philip Edwards and Colin Gibson, 5 vols. (Oxford, 1976), ii, p. 158; and for similar examples, see William Chappell, *Popular Music of the Olden Time*, 2 vols. (London, 1853-9), I, pp. 252-4; ii, pp. 422-3.

<sup>8</sup> C. R. Baskerville, *The Elizabethan Jig and Related Song Drama* (Chicago, 1929), ch. 2; N. J. O'Connor, *Gods Peace and the Queens: Vicissitudes of a House, 1539-1615* (London, 1934), pp. 108-26; Sisson, *Lost Plays of Shakespeare's Age*, chs. 2-4; C. L. Barber, *Shakespeare's Festive Comedy: A Study of Dramatic Form and its Relation to Social Custom* (Princeton, 1959); Mildred Campbell, *The English Yeoman under Elizabeth and the Early Stuarts* (London, 1960), p. 152; see also *Records of Early English Drama: Cumberland, Westmorland, Gloucestershire*, ed. Audrey Douglas and Peter Greenfield (Toronto, 1986), pp. 195-8, 235-8.

defined as "criminal"; seditious if directed against persons in authority and breaches of the peace if touching private individuals.<sup>9</sup> The court of Star Chamber, one of the royal prerogative courts at Westminster until its abolition at the outbreak of the Civil War, was principally responsible for this development, for through its judgements in a series of precedential cases in the Elizabethan and Jacobean periods, it was instrumental in the creation of new common law and the redefinition of much existing statute. The effect, which partly reflected Tudor and early Stuart anxieties about "disorder", was to upgrade the gravity of offences of cunning, such as defamation, as against those of force. Star Chamber, thereafter, became a natural forum for their redress.<sup>10</sup>

William Hudson's contemporary treatise on the court considered that after about 1600 the number of "libels" prosecuted there had rapidly increased. Early in the reign of Charles I, Lord Keeper Coventry could reflect that:

The Starre chamber of late hath assumed to [it] the punishment of libells, for herby it is come to passe that people thinke that libells are punishable in noe other place but here and see by reason of the great charge of suites here, many libells are unpunished, where in ancient times they were punished in court leetes; courts of creditt formerly, though now debased in the esteeme of men.<sup>11</sup>

15 For this reason, the Star Chamber records yield important information about the way in which slander and libel were coming to be regarded in this period and about the forms which they most often assumed. "Libels" before the court principally took the shape of derogatory songs or verses; derisive letters; pictures or objects with some scandalous imputation; or false allegations made before another authority against an individual or group.

<sup>9</sup> J. F. Stephen, *A History of the Criminal Law of England*, 3 vols. (London, 1883), ii, pp. 298-395; W. S. Holdsworth, *A History of English Law*, 17 vols. (London, 1903-72), v, pp. 205-12; viii, pp. 333-78; W. S. Holdsworth, "Defamation in the Sixteenth and Seventeenth Centuries", *Law Quart. Rev.*, xi (1924), pp. 302-15, 397-412; xii (1925), pp. 13-31.

<sup>10</sup> Holdsworth, *History of English Law*, v, pp. 208-12; T. G. Barnes, "Due Process and Slow Process in the Late Elizabethan and Early-Stuart Star Chamber", *Amer. J. Legal Hist.*, vi (1962), pp. 221-49, 315-46; T. G. Barnes, "Star Chamber and the Sophistication of the Criminal Law", *Criminal Law Rev.*, 1977, pp. 316-26.

<sup>11</sup> William Hudson, "A Treatise of the Court of Star Chamber", in *Collectanea Juridica: Consisting of Tracts Relative to the Law and Constitution*, ed. F. Hargrave, 2 vols. (London, 1791-2), ii, p. 100; British Library, London (hereafter Brit. Lib.), Lansdowne MS. 620 (Reports of the Star-Chamber Cases. From Pasch. 1. Car. 1. to Hill. 3. Car. 1. inclusive), fos. 50'-51'; Richard Crompton, *Star Chamber Cases* (London, 1630, S.T.C. 6056); pp. 10-11.



They were usually constituted, as William Hudson observed:

either by scoffing at the person of another in rhyme or prose, or by the personating of him, thereby to make him ridiculous; or by setting up horns at his gate, or picturing him or describing him; or by writing of some base or defamatory letter, and publishing the same to others, or some scurvy love-letter to himself, whereby it is not likely but he should break the peace; or to publish disgraceful or false speeches against any eminent man or public officer.<sup>12</sup>

All such things might detract from the name and reputation of a person and materially effect the "credit" upon which so much of his or her ability to function within a community was based. Many libels alleged sexual misdemeanour or at least employed sexual imagery and innuendo, for regardless of circumstance this was the most ready and potent means to shame and to mock.<sup>13</sup>

Litigation at Westminster was an inconvenient and costly business, and this is reflected in the social status of those engaged in Star Chamber actions. Of the 8,228 cases of all types brought before the court during the reign of James I (1603-25), 64 per cent involved plaintiffs stated to be from the wealthier ranks of society: nobles, gentlemen, professionals and merchants. The remaining 36 per cent came from the middle and lower social orders: the yeomanry, in particular, together with husbandmen, artisans and labourers. The rank of defendants, though less easy to determine, suggests equally that "Star Chamber litigation was gentlemen's business, first and foremost".<sup>14</sup> The cases involving defamation reveal even more of a social bias among plaintiffs; of the 577 suits heard by Star Chamber in this period, only 115, or 20 per cent, were entered by litigants designated to be of "yeoman" status or below. However, a total of 212 causes, or nearly 37 per cent, involved defendants from these middling and lower levels of society.<sup>15</sup> The latter statistic is, of course, the

<sup>12</sup> Hudson, "Treatise of the Court of Star Chamber", p. 100.

<sup>13</sup> The court deemed the composition of a "libel" to be an offence, regardless of whether or not the allegations which it made were true. Early in the reign of Charles I, Richardson L.C.J. ruled in *Frere v. Bernett, Langdon and Aylett* that "though the truth be that the plaintiff is innocent, yet it is a rule in law and in this court that a libel can noe way be justified". Brit. Lib., Lansdowne MS. 620, fo. 35; and see Houghton Library, Harvard University, fMS. Eng. 1084 (Camera Stellata: Reports of the Star Chamber, Pasche Primo Caroli Regis), fo. 60<sup>r</sup>.

<sup>14</sup> T. G. Barnes, "Star Chamber Litigants and their Counsel, 1596-1641", in J. H. Baker (ed.), *Legal Records and the Historian* (London, 1978), p. 10. These figures include those of unspecified status who "can be presumed to have been of the lower orders".

<sup>15</sup> In the 577 cases involving defamation before the Jacobean Star Chamber the number of suits entered by principal plaintiffs, broken down according to social

(cont. on p. 57)

important one to bear in mind if one is discussing the composers of libels.

Clearly, the practice of inventing ballads and songs in order to ridicule and shame a rival or adversary was one well-known at all social levels. Such rhyming could be employed by those of gentle and even of aristocratic stamp; it was most familiar, perhaps, to the various peoples of the "middle sort" who comprised urban or parish élites. As a cultural form which was known to and shared in by all sections of the community, libelling defied the crude dichotomies implied by the labels "élite" and "popular". Because our concern here is to investigate the idiom and intent of plebeian expression, it is however upon libels invented by versifiers of relatively humble origin that we shall focus.<sup>16</sup>

The extensive documentation produced by Star Chamber proceedings allows for the recovery of much of the background detail and attendant circumstances surrounding cases of defamation, as of other offences. Particular insight is afforded in libel suits, moreover, as the cause was considered invalid unless a copy of the text or a verbatim recitation of the offending words could be produced by the plaintiff.<sup>17</sup> In almost all cases, therefore, the entire song, rhyme, letter or derogatory petition in question is contained within the indictment or annexed to it. For example,

(A. 15 cont.)

status, was as follows: King (6); Peer (15); Baronet (6); Knight (64); Esquire (98); Gentleman (153); Professional (76); Merchant (41); Yeoman (56); Husbandman (4); Artisan (18); Labourer (1); Corporate Body (3); Unspecified (36). The social status of principal defendants in these cases was: Peer (3); Baronet (4); Knight (48); Esquire (63); Gentleman (139); Professional (74); Merchant (34); Yeoman (41); Husbandman (14); Artisan (22); Labourer (1); Unspecified (134). In practice, many causes involved multiple plaintiffs, and the majority cited multiple defendants whose social status was usually the same as or lower than the individual principally sued. These calculations are based on the data in T. G. Barnes *et al.* (eds.), *List and Index to the Proceedings in Star Chamber for the Reign of James I (1603-25) in the Public Record Office, London, Class STACB*, 3 vols. (Chicago, 1975), iii, pp. 351-61.

<sup>16</sup> For discussion of libellous verses attracting great persons of state which could be produced and circulated at the highest social levels, see Richard Cusick, "News and Politics in Early Seventeenth-Century England", *Past and Present*, no. 112 (Aug. 1986), pp. 66-9; Pauline Croft, "The Reputation of Robert Cecil: Libels, Political Opinion and Popular Awareness in the Early Seventeenth Century", *Trans. Roy. Hist. Soc.*, 6th ser., i (1991), pp. 43-69; Alastair Bellamy, "Raylinge Rymes and Vaunting Verse: Libellous Politics in Early Stuart England, 1603-1628", in Kevin Sharpe and Peter Lake (eds.), *Culture and Politics in Early Stuart England* (London, 1994), pp. 285-310.

<sup>17</sup> Brit. Lib., Lansdowne MS. 639 (Isaac Cotton, "The Course and Manner of Prosecution of Causes in the High Court of Star Chamber", 1622), fos. 88, 105; Hudson, "Treatise of the Court of Star Chamber", p. 154.

when John Peter, a fuller from Tiverton, Devon, was before the court in 1611 accused of inventing some scandalous verses against Robert Reede, a wealthy clothier and local worthy, Reede was obliged to admit that "not having himself scene or heard them written or spoken as they were first devised, written, spoken, and published", he could not "precisely sett [them] downe for the better colouring and strengthening" of his case. Peter was legitimately entitled to answer, as a result, that an accusation without the texts, "without shewing in what sort or what the same were, ys utterlye uncerteyne and insufficient in the lawe".<sup>18</sup> Fortunately, the burden of proof ensures that, in the great majority of cases, both the circumstances and the precise contents of such compositions can be retrieved.

<sup>20</sup>The difficulty in producing a copy of some libels was a consequence of the fact that many of them were intended to be chanted or sung; they were transmitted orally to the extent that some were never written down at all. This was so in the case of a ballad invented in the summer of 1611 by John Penne, a husbandman of Belbroughton, Worcs., against the local vicar, Thomas Tristram, and entitled "The Parson and his Mare". Tristram could not "attaine to have anie copies therof in wryting in respect the said John Penne dooth only sing and utter the same by word of mouth". He would perform it "with a lowde and high voice . . . not only [at] fayres and other great assemblies and concourses of people but also in publique tavernes and alehowses", claiming that all clerics simply "conned a ballet without booke and thereof made a sermon".<sup>19</sup> Penne was probably unable to write, and he was just one of many libellers who were illiterate in some sense. Of course, it must have been a good form of defence to claim as much in court when accused of having devised and copied a scurrilous text. But almost all bills of complaint were prepared to recognize that the defendants might not have drawn up the libel personally; that they "did write and make, or cause to be written and made" was a standard formula.

<sup>21</sup>But the inability to write by no means denied people access to the realm of script in this context, or in any other. All communities had at least one person, perhaps a cleric or a pedagogue, an apprentice or a schoolboy, who was able and willing to perform such functions. Indeed, some individuals seem to have been well-

<sup>18</sup> P.R.O., STAC 8 253 18, mm. 3-4.

<sup>19</sup> P.R.O., STAC 8 281/13, m. 2.

known for their skill at this kind of versifying, and customers would approach them with a tale upon which to extemporize. Thus when Thomas Clitham, a schoolmaster from Boreham, Essex, called at the house of Hugh Barker, barber of Chelmsford, in October 1601, he was asked if he would make a ballad out of a piece of local gossip: "It is nothing (quoth Barker) but to have you pen a few verses for me upon a pretty jest which I shall tell you". Two months later, on the Wednesday before Christmas that year, George Warde was among a group travelling towards Allerton, Yorks., when he told one of the party, Francis Mitchell, serving-man of Hilton, Cleveland, "that he knewe a good jyste by a neighbour of his, Michael Steele, and his supposed maid servante, and desired [Mitchell] to maik a songe thereof that they might bee merrie in Christmas withall", whereupon he "did then declare to [him] the substance of the matter . . .".<sup>20</sup>

<sup>22</sup>In other cases, the authors of scandal were perfectly capable of rhyming themselves and merely required scribal services in order to commit their work to paper. So, in January 1605, a servant girl, Elizabeth Maunder, went to see John Parker, an apprentice to a Mr Charles of Fleet Street, London, and instructed him "to write certen libelling verses which [she] would tell [him] by word of mouth, which he did and for want of incke wrote them first with black leade and afterwards with incke". When in June 1632 a number of men, including Benjamin Martin and Joseph Turpin, were drinking and making merry at a tavern in Rye, Sussex, they hit upon a scurrilous "lybell in meeter or verses" against some of the godly inhabitants, or "purer sort", of the town. Apparently none of them could write, for "Turpin said there were verses of some of the purer sort and that he would give a pott of beare to see them". Fortunately, they found a fellow-drinker called Spirling who agreed to set them down, in return for which Turpin paid him a quart of wine. Thus the revellers could "afterwards maliciously scatter and publish the same verses, to the great scandall of the complainants and of religion".<sup>21</sup>

<sup>20</sup> Ennison, *Elizabethan Life: Disorder*, p. 74; Sisson, *Lost Plays of Shakespeare's Age*, p. 132. For a cameo of a professional ballad-writer who makes "libels" into "metre", see J. H., *Two Essays of Love and Marriage* (London, 1657), p. 91.

<sup>21</sup> Guildhall Library, London, Bridewell Court Books, vol. v, fo. 10' (I am grateful to Paul Griffiths for this reference); *Reports of Cases in the Courts of Star Chamber and High Commission*, ed. Samuel Rawson Gardiner (Camden Soc., new ser., xxxix,

**23** Many other alleged libellers were unable to write, or so they claimed. Thus, two apprentice tanners from Northamptonshire tried to extricate themselves from suspicion of having had a hand in a pair of offensive ballads by protesting that they could "neither write, nor read written hand". If, as is usually assumed, the basic skills of reading were learned before those of writing, then this common form of defence suggests, as it was designed to do, that the accused was incapable of framing a document. Richard Jerard, a serving-man of Beckington, Somerset, charged with writing an obscene rhyme against a neighbour and his wife in September 1611, claimed that he had only chanced across a copy of it in the common field at Berkley, "folded up and sealed with wax in the manner of a lettre. But being not able to reade it (for he cannot reade written hand)", he took it back to his master's house where someone who "could reade written hand took the writing from [him] and opening the seale reade from parte of it in [his] hearing". Such people may have been among many contemporaries whose reading ability extended to some form of the printed word, "print hand", but who had difficulty deciphering handwriting, "written hand". Another such, perhaps, was Thomas Mumby, a yeoman of Marshchapel, Lincs. He denied having any knowledge of two scurrilous songs he was charged with writing against Thomas and Mary Dawson of the same village in July 1621, until his servant, Alice Hutchinson, had found copies in his yard and shown them to him; whereupon he "opened the same and indeavoured to read [them] but could not, but here and there a part". John King, a husbandman from Compton Abbas, Dorset, appears to have been completely illiterate: when he saw the libel he was accused of composing nailed upon the church door one Sunday in October 1603, he took it down obliviously, so he said, for he "could not himself read".<sup>22</sup>

<sup>22</sup> P. O., m. 1.

<sup>23</sup> London, 1886), pp. 149-53. For a fictional example, see Dobson's *Drie Bobbes: A Story of Sixteenth-Century Durham*, ed. E. A. Horsman (Oxford, 1955), pp. 18-23, in which a group of Durham schoolboys write down some verses against a cuckolded haberdasher, composed by "such poeticall braines as were resident in the City", and having "sung ballads thereof in every street", they fix them over his front door together with a painting and some horns. In a city full of people for the assizes, many passers-by read the verses, while "others, that had no skill in letters, got them perused by such as could", and everyone was "ready to die with laughing".

<sup>24</sup> P. O., STAC 8 288.12, fos. 3<sup>r</sup>, 6<sup>r</sup>, m. 46; STAC 8/92/10, m. 3; STAC 8.14/12, m. 1; STAC 8 190.7, m. 14. On the extent and nature of contemporary literacy, see Keith Thomas, "The Meaning of Literacy in Early Modern England", in Gerd Baumann ed., *The Written Word: Literacy in Transition* (Oxford, 1986), pp. 97-131.

**24** A good number of those who invented songs and rhymes, therefore, were themselves unable to read handwriting and this incapacity applied to most of their potential audience. Nevertheless, they sought to have their compositions written down and transcripts made in order to facilitate their circulation and heighten their impact. Thus, when a group of villagers from Jacobstow, Cornwall, wanted to publicize the misdemeanours of various of their neighbours in September 1616, they began to spread rumours and gossip about them. But in order that these "matters of infamie and reproach might take the deeper roote and impression in the myndes of the comon and vulgar sorte of people within the said parish", they decided "to reduce the same into rimes in the nature of a libell and then to publish and divulge the same".<sup>23</sup> Rhymes were much more memorable than prose, and "papers" could easily be "scattered abroad", distributed in the streets, left in "places of common resort", or posted up in prominent positions. Indeed, there are many examples of libellous verses pinned to people's front gates, to church doors, or to alehouse walls, and there is evidence of them being left on the parish pump, the pillory, and the maypole; attached to a fence post, a stile, or a hay-stack; left on busy highways; posted on the market cross on market-day; slipped inside the Prayer Book on Sunday; or pinned to the coffin at a funeral.<sup>24</sup> People would flock round them to discover the latest news or scandal, those who could understand a written hand reading them aloud to the others.

**25** Often the words were scrawled on anything available: a "torne paper", "an old fitered paper leafe".<sup>25</sup> But equally, the visual dimension could be exploited more fully, as in the case of one of a series of ballads, circulating in Gloucester against the aldermen of the corporation during the first decade of the seventeenth century, which was said to have been framed "in Romaine letters and written with a kinde of darke redd ynke". Indeed, as in all societies in which literacy is limited, the influence of graphic representation, and of all imagery and symbolism, could have a powerful communicating effect. The drawing of insinuating pictures was, as the libellers of George Hawkins knew, a very

<sup>23</sup> P. O., STAC 8/27/10, m. 2.

<sup>24</sup> For some representative examples of these various postings, see P. O., STAC 8/16/10; STAC 8/79/12; STAC 8/85/15; STAC 8/186/12; STAC 8/231/9; STAC 8/236/29; STAC 8/240/26; STAC 8/246/14. Libellers might even pay others to so publicize their work: see P. R. O., STAC 8/221/21, m. 7.

<sup>25</sup> P. R. O., STAC 8/53/7, m. 1; STAC 8/94/17, m. 18.

effective means of amplifying a scurrilous song. When in August 1608 some villagers from Petworth, Sussex, conspired to shame a local mercer, George Frye, with a libel scrawled on "a longe rolle of paper", they elaborated their text, said to be "evill written" and near illegible, by drawing "on the backside thereof with a penn" a picture of a man's head with two great horns and next to it the letters G. F. "in a large Romayne hand". This image plastered on a post outside Frye's house and on the market cross in Petworth blazoned its message to all regardless of literacy, maligning its subject "even amongst the baser sort of people who doe the better remember and take a greater apprehension of the shame and reproche . . . by signes and pictures then by the bare report, seeing, reading or hearinge of the same libell".<sup>26</sup>

<sup>26</sup> Everyone could "read" such a drawing, and the same applied to other symbols and effigies, "signs of reproach" or "tokens of shame". For example, when, one night in November 1605, a serving-man scribbled a message on the four knaves from a pack of playing-cards and fixed them to the front door of Richard Rouse, a gentleman of East Allington, Devon, the import was voluble to all.<sup>27</sup> No elaboration was needed for those pairs of cuckold's horns so often to be found fixed above a man's porch, thrown through his window, set upon his horse, or sent to him with the head and skin of an animal still attached.<sup>28</sup> The powerful symbolism of the gallows cropped up not only in drawing but also in the mock scaffold that was sometimes built of sticks and set outside someone's door. Thus, in the second decade of the

<sup>26</sup> P. R. O., STAC 8.285.27, STAC 8.146.27, m. 48. Among other later examples of such drawings, see *Utterack County Records*, ed. Ratcliffe and Johnson, ix, pp. 72, 130; J. A. Sharpe, *Defamation and Sexual Slander in Early Modern England: The Court of Chancery at York* (Barthwick Papers, Ivi, York, 1980), p. 5; F. G. Emmison, *Archie and Lives of History* (London, 1966), p. 83; E. P. Thompson, *Customs in Common* (London, 1991), p. 481 and plate VI. In law a "libel" was not necessarily a written defamation but could be *any scriptis*, in pictures or signs. Sir Edward Coke, "The Case De Libellis Famosis, or of Scandalous Libells", in *The English Reports*, 176 vols. Edinburgh, 1901-30, Ixxvii, pp. 230-2.

<sup>27</sup> P. R. O., STAC 8.254.24.  
<sup>28</sup> See, for example, P. R. O., STAC 8.152.7; STAC 8.140.29; STAC 8.92.10; STAC 8.133.29; STAC 8.217.26; *Southern House Orders, 1629-1640*, ed. T. G. Barnes (Somerset Rec. Soc., Ivi, Frome, 1970), p. 42; *Stitchbushes Quarter Sessions Rolls, 1755-1760*, ed. Burns, v, pp. 101, 210-11; G. R. Quail, *Winton Wrecker and Wrecker* (Ilchester, 1970), p. 105; *Peasants and Black Sea in Early Seventeenth-Century England* (London, 1979), pp. 199-200; David Underdown, "The Taming of the Scold: The Enforcement of Patriarchal Authority in Early Modern England", in Anthony Fletcher and John Stevenson, eds., *Order and Disorder in Early Modern England* (Cambridge, 1985), p. 125; *Parson, Riches, Rough Music and Mocking Rhymes*, p. 170.

seventeenth century the tenants of the manor of Osmington, Dorset, were battling against their landlord John Warham, who was trying to enclose the commons. As well as breaking down his fences, they erected various mock scaffolds outside his house. One of them was built, in March 1620, from his own fire-wood, while the following September they did "frame and make another gallows and thereupon certaine bundles of fetches which they had framed in resemblance of men", thereby hanging Warham in effigy.<sup>29</sup>

<sup>27</sup> Libels, then, were the products of an environment in which literacy was not expected, but was nevertheless relied upon in order to help get the message across. They were often intended to be sung and were couched in verse as a mnemonic aid, especially for a majority whose only access to them was through oral channels; yet there was a perceived utility in making written copies and considerable energies were expended in "publishing" them. For example, when the rancour of a group of tenants from Newton in Makerfield, Lancs., was aroused by the local bailiff and rent-collector, John Wood, they resolved to "devise, frame and put in writinge an infamous and scandalous lybell in rime" against him. On the night of 1 February 1619 this was secretly "fasten[ed] and pinned[ed] to the comon whipstocke standing in the most publicke place of . . . Newton, for the punishing of sturdy rogues and vagabonds, where it remayned a great part of the next day to be openly scene and redde of all that came nere . . .". They let it be known that "there was a lettre of newes upon the whipstocke . . . and wished [others] to goe and see what it was. Whereby there was presently a great concourse of people gathered together . . . insomuch that the whole towne was in uprore". For the benefit of the illiterate, the authors were ready, in addition, to "reade and singe the said libell as a balliate with a lowde voyce so that all the rest of the companie might heare it" and, further, "taught their children and boyes to singe the same in the streets in scoffinge manner in disgrace of [John Wood]".<sup>30</sup>

<sup>28</sup> The same combination of oral and literate dissemination was deployed in almost all instances of public ridicule by lyric and song; everywhere the two modes were side by side, interchange-

<sup>29</sup> P. R. O., STAC 8.293.12. For other examples, see P. R. O., STAC 8.77.4; STAC 8.195.21.

<sup>30</sup> P. R. O., STAC 8.307.9, m. 2.

able and mutually reinforcing. The striking feature that nearly all verses were also written down is indicative of the fact that early seventeenth-century England was a "partially literate" society. Libellers proclaimed almost unanimously that the world of purely oral tradition was long gone. The trouble to which they went in order to procure "transcripts and copies" of their work reveals that the value of the written word was appreciated quite clearly even at the lowest social levels. It also suggests, perhaps, a greater "written hand" literacy among contemporaries than is usually assumed.<sup>31</sup>

**29** This typical combination of oral and written distribution was equally well illustrated by a libel devised against one of the gamekeepers of the earl of Pembroke in the forest of Grovely, Wilts., in June 1609. The perpetrators took both "sundry copies of the said libell, and did make songs and rymes therupon". A written version was "set up on the top of a post of certain rails" adjoining the highway through High Wood "to be seen and redd by all passengers that way". But they also communicated the verse to the unlettered in neighbouring communities, "as well by reading copies of [it] and by pronouncing the same by hart, as by teaching [it] to others". Most reading in this period was done aloud in any case, and it was expected that the literate minority would speak up for the rest to hear. One song composed by about twenty labouring people from Southwark in 1613 was also "written . . . at large in a peece of paper", apparently by a young boy, Edward Cottell. It was prefaced by the enticing words "Within this doore / Dwelleth a ve:ie notorious whore", and then fixed above its victim's porch in.

open and publique view of all the neighbours and passengers travayling to and fro . . . who red the same as they passed by, at first taking it to be a kinde of bill or declaration that the house were to be let or solde, but yt beinge percyyved to be a libell, great companie theruppon resorted thither to the hearing and readinge thereof.<sup>32</sup>

**30** Even those written verses which were not necessarily intended to be sung were framed in an "oral" style which indicated that they were clearly meant for verbal delivery. This libel, in the familiar guise of a news-sheet, was found fastened "uppon a

<sup>31</sup> On publication and circulation in manuscript, see Harold Love, *Scribal Publication in Seventeenth-Century England* (Oxford, 1993).

<sup>32</sup> P.R.O., STAC 8/152/11; STAC 8/151/7, m. 2; STAC 8/156/29, mm. 2-3.

board under the pillory" in the market-place at Lyme Regis in March 1608 and was directed against one of the customs officials from the harbour:

Give eare a while,  
And listen to this newes I shall you tell.  
Of a long mesching fellow,  
Which in the towne of Lyme doth dwell.  
His name in brees I will you tell,  
With two syllables you may it spell.  
A rope and a halter,  
Spells Robin Salter.<sup>33</sup>

**31** Significantly, the fact that libels were at one and the same time both written and spoken, simultaneously oral and textual so that the distinction between the two had almost no meaning, was reflected in the contemporary law of defamation. "For a libell may be in word as well as in writing", ruled Lord Chief Justice Richardson in a case of "slander" before the Star Chamber in 1631.<sup>34</sup>

**32** As written texts, then, libels were intended to be repeated aloud to those who could not read; as songs also, they were often set to popular tunes. "Better to be sung than to be redd, to the tune of Bonny Nell", instructed one verse composed at Nottingham in 1617; an apothecary of the town, Thomas Aldred, certainly thought it was hilarious "in regarde of the strangress and conceyted tune sett to it". The celebrated tunes "Phillida Flouts Me" and "Fortune my Foe" were among the musical backings to the libellous song-drama performed by a group of travelling players at Osmotherley, North Yorks., in December 1601. A scatological ballad invented during the summer of 1608 by Thomas and William Tickell of Much Brickhill, Bucks., to publicize the alleged fornication of Dorothy Poole and William Abraham, was set "to a new tune called Pryde and Lecherie".

There dwelles a wenche in Much Brickhill,  
Singe dall didell dall, dall dall a-dall lee.  
Her maydenhead is not to sell,  
Dainty dall lee.

A few years later, Daniel Steward, a yeoman from Sutton, Surrey,

<sup>33</sup> P.R.O., STAC 8/258/15.

<sup>34</sup> *Reports of Cases in the Courts of Star Chamber and High Commission*, ed. Gardiner, p. 71; see also J. M. Kaye, "Libel and Slander — Two Torts or One?", *Law Quart. Rev.*, xci (1975), pp. 524-39.

framed a fifty-eight-line ballad of his invention with the familiar refrain of "Hay downe a-downe, go downe a-downe". An obscene ditty, "To the tune of panders come away", concocted at Slapton, Northants, in 1619 "came afterwards to be a comon songe, and was sung by boyes and others as they went upp and down the towne". Joseph Turpin of Rye and his accomplices set their rhymes to "Tom of Bedlam" and "Watch Currants". As well as making the song memorable, renowned tunes with distinctive associations, such as some of these, conveyed their message regardless of words. The catch of "Mad Tom", for instance, manifestly mocked the idiocy of a libel victim, while "Fortune", known to everyone as "the hanging tune" because of its performance at public executions, would have needed little explanation and was, no doubt, a common accompaniment to the many pictures or effigies of the gallows directed at those who were believed to have breached good charity.<sup>35</sup>

Sometimes composers even employed professional performers, town waits, minstrels and ballad-singers to set their tunes to music and render them at civic gatherings or disseminate them over several counties as they travelled the circuit of alehouses and fairs. The Nottingham version of "Bonny Nell", for example, was hammered out in the streets to the rough music of candlesticks, tongs and basins, but was also played in taverns by professional pipers, and "prickt in 4 parts to the vyalls" in gentlemen's houses, demonstrating the way in which such material could simultaneously circulate in many forms and operate on many social levels. During the winter of 1613-14, Thomas Bevet, gentleman of South Kirkby, Yorks., and some accomplices, hired three separate groups of musicians, one each at Stainforth and Pontefract, and at Tuxford, Notts, to play and sing their twelve-stanza ballad "The Devil of Doncaster" ridiculing Bryan Cooke of that town. Throughout 1621 George Thomson, vicar of Aberford, Yorks., made use of various minstrels, "profesing of

<sup>35</sup> Sisson, *Lost Plays of Shakespeare's Age*, pp. 135-40, 199, 201, 206-8; P.R.O., STAC 8 27/7, mm. 29, 9; STAC 8/36/6, m. 8; STAC 8/90/24, m. 2; STAC 8/288/12, fo. 2; *Reports of Cases in the Courts of Star Chamber and High Commission*, ed. Gardiner, p. 152. For the tunes of "Bonny Nell", "Phyllida Flouts Me", "Fortune my Foe" and "Tom of Bedlam", and the refrain "Hey downe a-downe", see, respectively, Chappell, *Popular Music of the Olden Time*, ii, pp. 501-2; i, pp. 182-5; i, pp. 162-4; i, pp. 332-6; ii, pp. 391-2. In October 1694 John Bear of Buckland-Toussaints, Devon, composed eight ballads directed against William III, one of which was entitled "The Belgick Boar, to the tune of Chivy Chase". *English Reports*, xc, pp. 1132-3.

pipeinge and fiding, running and ranging upp and downe the countrie from place to place to gett their livings at fayres, marketts and idle meetings and merrements", to perform the many songs he had conceived in derogation of Thomas Shillito, the high constable of Barkston. At Aberford, Ferrybridge, Pontefract and Knottingley, among other places, they entertained the locals "in diverse and sundrie alehouses and innes and in diverse and sundry companies drawne together of purpose to heare the same songs, rithmes and libells and to reioyce and laugh thereat in scornfull, derideinge and infamous manner".<sup>36</sup>

The references to tunes suggest that some of those who made up extempore rhymes and songs may well have been drawing upon, or at least operating within, a milieu of established and familiar commercial print. In their named tunes or titles, their conventional division into two parts, and in other features of format, style and length, a small number of libels echoed the world of the broadside ballad.<sup>37</sup> Some authors appear to have copied directly from favourite items of popular literature. A long ballad composed and circulated in the city of Gloucester on 20 February 1609 by James Cowarne and Morris Attwood, mercers, together with a group of other men, mostly servants, contained references to the renowned Reynard the Fox and to Pasquil, the great patron of anonymous lampoons. It also embodied a crude version of *A Moste Strange Weddinge of the Frogge and the Mowse* which predates the earliest previously known text of this famous song.<sup>38</sup> One ditty, made in December 1612 by James Ball of Wellingborough, Northants, which he did "openly and with a highe voice publishe

<sup>36</sup> Sisson, *Lost Plays of Shakespeare's Age*, p. 198; P.R.O., STAC 8/113/3; STAC 8/275/22, m. 2.

<sup>37</sup> For examples of the contemporary printed ballad, the major collections are *The Roxburgh Ballads*, ed. William Chappell and J. Woodfall Elsworth, 9 vols. (London, 1871-99); *The Shirburn Ballads*, ed. Andrew Clark (Oxford, 1907); *Old English Ballads, 1553-1625*, ed. Hyder E. Rollins (Cambridge, 1920); *The Pepys Ballads*, ed. W. G. Day, 5 vols. (Cambridge, 1987); for discussion, see Hyder E. Rollins, "The Black-Letter Broadside Ballad", *P.M.L.A.*, xxxiv (1919), pp. 258-339.

<sup>38</sup> P.R.O., STAC 8/285/27, m. 8. The earliest known reference to this song dates from 1549; it was licensed as a broadside ballad by the Stationers' Company in November 1580; the earliest copy of the text known hitherto is that in Thomas Ravenscroft, *Melismata. Musicall Phantasies, Fitting the Court, Cittie, and Countrey Humours* (London, 1611, S.T.C. 20758, sig. F1<sup>r</sup>); a rather different version has been a favourite of children since the nineteenth century as "A frog he would a-wooing go"; see Hyder E. Rollins, "An Analytical Index to the Ballad-Entries (1557-1709) in the Registers of the Company of Stationers of London", *Studies in Philology*, xxi (1924), p. 158; *The Oxford Dictionary of Nursery Rhymes*, ed. Iona and Peter Opie (Oxford, 1951), pp. 177-81.

and sing . . . in dyvers alehouses, tavernes and other open and publique places", was framed in the dialogic form so often employed by professional balladeers. It began:

*A Discourse between a Traveller and a Shepherd  
Meeting upon Bareshanke Leyes*

*Traveller:* Well mett shepherd!

From whence doth thou come and wither awaye?

*Shepherd:* From the good town of Wellingborrowe,

So borneye and soe gay.

*Traveller:* From Wellingborrowe, shepherd;

What newes at the Hinde?

*Shepherd:* Ill newes Sir. Good ale is deare,

Though women are kinde.<sup>35</sup>

**35** Libellers such as these were obviously adapting to their own purposes, perhaps just by inserting new names, ballads which they knew from printed broadsides. This may have been the case with George James, a serving-man from Lutterworth, Leics. In February 1616 he was employed in the household of Warwickshire gentleman, Henry Bressye. He soon fell out with his mistress, however, who decided to lock away his livery coat, and in a fit of revenge and resentment, he contrived a "libellous songe or dittye" against her. It began with a well-known rallying cry, "Roysters give roome!", and James was able to claim, quite plausibly, that his supposed "libel" was no more than a regular

songe or ygge and comedians which the servants to the late highe and mightie Prince Henrie, Prince of Wales, did often, in the presence of his highnes and manie nobles and peeres of this realme, act, daunce and singe as a ygge in the end of their enterludes and plaies, being a generall song without particuler nomination or alusion to anie. Which said songe or ygge hath bene seene, approved and allowed by the right worshipping the Maister of the Revels to his Majestie.<sup>36</sup>

Examples such as these provide rare evidence of the penetration of cheap print at the lowest levels of provincial society before the Civil War. They indicate how broadsides might provide the basis for an extemporized song reworked and applied in a specific context.<sup>41</sup>

**36** No ballads or rhymes composed by people of this social status

<sup>35</sup> P.R.O., STAC 8 153/5, m. 14.

<sup>36</sup> P.R.O., STAC 8 59 4, m. 1.

<sup>41</sup> For another example, see Ingram, "Ridings, Rough Music and Mocking Rhymes", p. 180.

mentioned by name any known title from commercial print, although this was sometimes the case among the more well-to-do and literate versifiers. During the famous feud between the Dymocke family of Lincolnshire and Henry, earl of Lincoln, a member of the former devised, as part of a dramatic slur on their adversary, a mock sermon involving "a collaudation of the ancient story of *The Friar and the Boy*" performed as part of a May game at Horncastle in 1601.<sup>42</sup> Similarly, Edward Seede, whose father was lord of the manor of Claverton, Somerset, denied making and singing a "bawdie lybell" or "filthie songe" in August 1606 against John Bewshin (the local vicar) and his wife. He claimed that on the occasion in question he had simply been "amongst diverse of his friends . . . whoe had bin anciently acquainted in their youth, and then occasion being given to remember, manie old songs and rymes", which they had performed, "fyrst in dauncing the daunce called the *Jew of Malta* and thereunto singing one ditty or tune, secondly dauncing the *Irish Daunce*, singing to that another, with diverse such like . . .", but that he had not sung the libellous jig alleged.<sup>43</sup>

**37** Thus, to a degree the culture of ridiculing rhymes could be informed and overlapped by the culture of print, the amateur performance inspired by the professional. Occasionally the relationship might be reciprocal, with some of the material for the London presses clearly provided, in turn, by libels supplied by even the *humblest provincial* authors. It represented, after all, the ultimate form of publicity, and caused the maximum potential shame to the victim, to have a derisive ballad actually printed. Of the Tickells from Much Brickhill, for example, it was said that they "most wickedlie endeavoured, practised and laboured to putt the[ir] . . . wicked and infamous libell in printe. And to that end and purpose sent [it] to a printer in London". The libellers of George Frye from Petworth were also said to have conspired to this end. In 1631-2, Francis Stacey of Coleorton, Leics., came up with what was said to be no more than a "rabblement of words without rime or reason" in derogation of his vicar, Thomas Pestell, but then "endeavour[ed] to have had

<sup>42</sup> O'Connor, *Gods Peace and the Queens*, p. 120. *The Friar and the Boye* was first printed in England by Wynkyn de Worde, 1510-13, and was registered as a ballad in 1586: Rollins, "Analytical Index", p. 84.

<sup>43</sup> P.R.O., STAC 8/98/20, m. 27; *The Murtherous Life and Terrible Death of the Riche Jew of Malta* was registered in 1594: Rollins, "Analytical Index", pp. 161-2.

the same put into verse, purposing to have had the same put into print".<sup>44</sup>

38 On 1 March 1607 Richard Rotten, a weaver from Moseley, Wors., together with his brother John, and William Pretty from Yardley, contrived three ballads accusing a local girl, Anne Bellamie, of an illicit affair with a married man, Richard Nightingale of Tipton, Staffs. Several of those who happened to be in John Tomlinson's alehouse in Moseley four days later testified to hearing Richard Rotten singing them to a tune which they recognized as "jamey". He was also said to have had copies made which he "dispersed on the backside or neare . . . his dwelling howse", set up in his shop, "spread and cast abroad . . . in divers places" and would "laughe and reioyce at the verses and contents thereof". In addition, the composition was sent to the capital to be set in type, for it was apparently "Imprinted at London at the signe of the woodcocke in Paules Churchyard". The polish and the standardized format of the printed forms suggest that a professional writer may have been employed at this stage to improve the quality of the work for the press. No copy of this broadside is extant, but the whole text survives in the Star Chamber cause papers, transcribed by the clerk of the court. One ballad was entitled "A Pleasant New History / Declaring of a Mysterie / Of Richard Nightingale by name / and Anne Bellamie of Dods Lane. You may sing it to a merry new tune". Another was now set, rather loftily, "To a pleasant new tune called Marcus Tullius Cicero".<sup>45</sup> It ran:

There is a maide of Moseley towne,  
Her leggs be short she will soon be downe.  
For she went on a time to Haselwall,  
But there she chauncete to catch a fall.  
Yf you will know who this same maide should be,  
Forsooth, it is Nan Ballamie.  
Her busines was to the mill as I did heare,  
With a batch for to make her woers good cheare.  
But marke you well what I shall say,  
Before this mayden came away.

<sup>44</sup> P.R.O., STAC 8/36/6, m. 8; STAC 8/146/27, m. 31; Huntington Library, San Marino, California, Hastings MSS., Legal Box 5 (9), fo. 85<sup>v</sup> (I am grateful to Patrick Collinson for this reference); for other examples, see Huntington Lib., Ellesmere MS. 2728; Sisson, *Love Plays of Shakespeare's Age*, pp. 96-7, 103-6.

<sup>45</sup> P.R.O., STAC 8/220/31, mm. 14-16 and fos. 1-9; STAC 8/222/31, between fos. 4-5.

The miller gott her a topp of the baggs,  
But his breeches fell downe about his legges.

Now how it fell out I cannot tell,  
But the miller sayd he used her well.  
But suer I thinke he dealt unkind,  
For she with him greate faulte did find.

Her mother standing by and seeing of this,  
She was an angrye woman I wis.  
For *no ill will she bore to the sporte*,  
But bycause it was done in such sorte.

Then she rapte out an othe and swore by Gods bread,  
She could find in her harte to breake his head.  
Could he find no other place,  
But putt her daughter to that disgrace?

There was a woer came from Tolerin,  
Which the miller cared not for a pinne.  
Did seeme to be greived in his mind,  
And told the millner he dealt unkind.

"Oh I pray thee", said the millner, "be content,  
For no harme unto the was meant.  
But if thou seemed to be greived in mind,  
Thou maiest turne the buckell of thy girdell behind.

Oh in good faith I for my self,  
Would scorne to be beateen at such an elf.  
And I thinke the worst that was there in place,  
Would not be ashamed to looke your worshipp in the face".

Nightingale seeinge the millner cared not for him,  
Thought good to lett him alone and not beate him.  
Saying, "Miller to beate the I am very loathe,  
Bycause thou tellest me the very trothe".

Finis.

39 So it was that what started out as a short ditty extemporized by amateurs in a locality could end up as a fully developed broadside, printed and perhaps dispersed nation-wide. The majority of verse libels, however, were never intended to be thus set down, nor did they owe much to the products of print culture and professional entertainment. They targeted individuals who were obscure other than in a local context; most of their references were parochial and specific, directed at an audience "in the know". From a literary point of view they were usually crude: corrupt in rhyme, irregular in metre, and simple in content. Their rough-hewn nature, both in construction and idiom, reflected their generation in an environment accustomed to oral and aural transmission, one governed less by the rules of written language than by the variable constructions and opaque phrases of popular



speech. Many of the versifiers who could record their work wrote as they spoke, rhyming in the cadences of regional pronunciation and expressing themselves in the vocabulary of local dialect. The libels of the unlettered were sometimes hardly songs or ballads in any formal sense, but more like "rabblements of words without rime or reason".

### III

**40** In their deployment by people of humble origin, these railing rhymes and lampooning songs could be very much the products of the "alternative" society of the alehouse. Almost all were explicitly stated to have been composed over a pot of ale and handed out or repeated in taverns and inns. "If anie man aske who made this rime / Yt was Steven Corkrum in a drinkinge time", concluded one squib composed at a *tippling-house* in Pyworthy, Devon, in May 1612 and sung on "alebenches and other places in most scoffing, lewd and obscene manner".<sup>46</sup> Denied the right openly to question those in authority, it was only away from their watchful eyes that people were able to vent grievances freely. The alehouse offered a sanctuary for relative freedom of speech, for cathartic release in story and song, jest and mockery; it provided the chance to ridicule in private those whom it was an offence to challenge in public. These ballads of popular invention were, like so much oral culture, inherently subversive and irreverent, implicitly running counter to the norms and values of society's élite and sometimes challenging them explicitly.<sup>47</sup>

**41** Indeed, many of the libels brought before the Jacobean Star Chamber that were composed by those of lowly social status, and therefore tended to be directed at persons of higher rank, had subversive overtones of some kind. It was this perceived threat to the social order which caused the Star Chamber to take an ever more dim view of the crime. Counsel for the plaintiff in a case of 1608 made it clear that persons of "good credit":

<sup>46</sup> P. R. O., STAC 8/236/29, m. 2.

<sup>47</sup> For a stimulating discussion of the subversive use of song and other verbal forms by subordinate groups in power-laden situations, see James C. Scott, *Domination and the Arts of Resistance: Hidden Transcripts* (New Haven, 1990). On the radical potential of popular mockery, see Keith Thomas, "The Place of Laughter in Tudor and Stuart England", *Times Lit. Suppl.*, 21 Jan. 1977, pp. 77-81.

should not be defamed, scandalized or slandered by men of base and lewde condicion which are evill affected, by publishinge of scornfull and reprochfull libells and pamphlets. And whereas lybellers, lybellers and lybellinge and the publishinge, deuiling and castinge the same abroad are things very odious and hateful in anie well governed comonwealth, movinge much contention, malice and sedicion amongst the people and are often tymes the causes of breache of the peace of the lande and of insurrections and rebellyons, and are alsoe directlye againste the lawes and government of this . . . Realme of Englande . . . and hath ever byne accompted noe small offence.<sup>48</sup>

**42** Such rhetoric was reinforced by sentences involving large fines, whipping and branding, and even the cutting off of an offender's ears in cases with seditious implications.<sup>49</sup> But whatever the consequences, a great many people "of base and lewde condicion" were clearly undeterred by them. John Pearse, a husbandman from Dorset, threatened with the Star Chamber for making a libellous song in 1618, boasted "that hee did not care a straw for it, for he had aunsweared there far worse matters than these". "Wee care not for the Star Chamber!", shouted the ridiculers of the Lancashire bailiff, John Wood. "Wee will have a trick that Wood . . . shall not be able to looke towards the Star Chamber."<sup>50</sup>

**43** Equal contempt for the law and its agents was evident among the group of artisans and tradespeople from Thaxted, Essex, who, in March 1622, concocted a shaming ballad against a councillor and notable citizen of the town, Richard Turner, whom they accused of harshly beating his daughter, Anne. They laughed in the face of authority and when the mayor of Thaxted:

by way of reprove, [told] them that makeinge of libells would indanger the losse of their eares, [they] did make a scoffe of [him] and his admonitions, and did thereupon publishe that a sow of one in the town had lost her eares for makinge libells and . . . [they] made a representation of the mayor and bayliffes of [Thaxted] in innes and alehouses as sittinge in their sessions, to the great scandall of the government of the said corporation.

<sup>48</sup> P. R. O., STAC 8/159/6, m. 2. For the role of Star Chamber in tightening the laws of sedition, see remarks in Roger B. Manning, "The Origin of the Doctrine of Sedition", *Albion*, xii (1980), pp. 99-121; Philip Hamburger, "The Development of the Law of Seditious Libel and the Control of the Press", *Stanford Law Rev.*, xxxvii (1985), pp. 691-7.

<sup>49</sup> Brit. Lib., Lansdowne MS. 639, fo. 103; Lansdowne MS. 620, fo. 50<sup>v</sup>; Hudson, "Treatise of the Court of Star Chamber", p. 224. On the background to this notorious corporal punishment, see J. A. Guy, *The Court of Star Chamber and its Records to the Reign of Elizabeth I* (P. R. O. Handbooks, xxi, London, 1985), p. 46. For some examples of Star Chamber sentences for libel, see John Hawarde, *Les Reportes del Cases in Camera Stellata, 1593 to 1609*, ed. W. P. Baildon (London, 1894), pp. 152, 230, 341, 345-6, 373, 374.

<sup>50</sup> P. R. O., STAC 8/77/4, m. 4; STAC 8/307/9, m. 2.

Their composition, entitled "Whip Her Arse Dick", had been "reported and sung, published and divulged . . . in divers innes, alehouses and other places in the said towne of Thaxted and county of Essex". They had made copies and "taught and instructed . . . young children to singe the same to wrong and provcke [Turner]". It began:

Hye thee home Anne,  
Hye thee home Anne,  
Whippe Her Arse Dicke,  
Will have thee anon.  
All those that love puddinge,  
Come unto Parke Street,  
And learne the songe,  
Of Whippe Her Arse Dicke.

Through this combination of oral and visual dissemination, the song, it was said, soon "became publique, common and notorious in the eyes, eares and tongues" of all Richard Turner's neighbours.<sup>51</sup>

44 The effect of this kind of ridicule could be devastating on its victims. As local people, known by everyone, they were exposed to a public shaming from which there was no escape and little redress. To some, taking the matter up to Westminster may have represented the best form of satisfaction, but "the blott of infamie" did not easily fade. Of course, the complaints of libel victims were likely to maximize or even exaggerate the extent to which they had been damaged by the offence, but even so it is likely that such claims were not without substance. Richard Turner was apparently ruined both privately and professionally by his detractors, who thus succeeded in their plan to "robb and take from [him] his good name, credit and reputation and to make and cause [him] to be contemptuous and ridiculous to the said town of Thaxted". Thereafter he was "often forced to neglect his busines abroad, [while] hoping in time the said scandalous libell, rime or songe may cease and end". The same fate awaited others similarly abused. That substantial inhabitant of Tiverton, Robert Reede, the victim of a rhyme and a pair of cuckold's horns fastened upon his door in February 1610, became a laughing-stock among his neighbours. Long after the incident, it was said that when people passed him in the street they "still doe most disgracefullie poynt att [him], and with their hands and

<sup>51</sup> P. R. O., STAC 8/282/12, m. 3.

fingers make the signe or token of hornes and poynt att [him] therewith", with such resulting shame to him and his wife that it "were likely not only to cause a seperacion between them but alsoe were lyke to have bereaved them both of their lyves through the grief, sorrowe and discontentment which they conceived att the said scandalous imputations". Such indeed came to pass in the case of Joan Cunde and her husband Henry, the vicar of Montford, Shropshire. Joan was the victim of an "infamous lybell" in August 1604 which ruined her marriage and to which she "tooke such an inward grief and sorrowe that she presentlye fell sicke and pyned, wasted and consumed away, and shortly afterward dyed".<sup>52</sup>

45 Very similar circumstances surrounded the "sundrie reproache-full, scandalous and infamous libells . . . in words as in writings" directed against Henry Collins of Winscombe, Somerset. Collins was another wealthy clothier who employed "many poore and distressed people", and was also a village constable who regularly presented miscreants to the authorities. In doing so he incurred the wrath of one John Hawker who, as a weaver and "a common haunter of alehouses, a night walker, and a notorious offender in many other disorders and greevous misdemeanors", had both professional and personal reasons to resent Collins. On 16 May 1624, Hawker, together with fellow weavers William Staple and George Bullford, invented "balletts, rymes, songs and other infamous speeches" claiming that Collins, a married man, had been seen in the trees of Maudlines Grove with Hawker's niece Ann. They alleged that he had also lived incontinently with many women, that he was a bad debtor, and thus a person of no credit. They deliberately sang these ballads in front of Collins's circle of friends, "the better sorte" of the neighbours, and among his "kinsfolkes". The result, he claimed, was that he was shunned by all and became afraid even to leave his house. Professionally he was "utterlie forbarred and frustrated from the following of his trade and thereby utterly undone and overthrowne". When the ill fame reached Collins's wife she believed the "rumors and rimes to be true" and "theruppon became frantick".<sup>53</sup>

46 The "better sort", so often the victims of these scurrilous songs, could frequently be heard denouncing libellers and their alehouse culture. Such was the reaction to the ballad composed

<sup>52</sup> P. R. O., STAC 8/253/18, m. 4; STAC 8/100/18, m. 8.

<sup>53</sup> P. R. O., STAC 8/687, m. 2.

in 1612 by James Ball of Wellingborough, "out of his evil and malicious mind", and directed against a local widow, Ellinor Grobye. One gentleman of the town, Hugh Chervoock, deposed that while Ellinor was "reported to be an honest and civil poore woman amongst her neighbours", Ball was "held to be, amongst the more and better sorte of his neighbours, a man of a troublesome disposition". Another of these respectable neighbours, John Hackney, claimed to be greatly shocked by the ballad, which was "such a thinge as he had never heard of in his life and that he thought that yt was a libell" which Ball performed "in a laughing and very scoffing manner and made a Maye game thereof".<sup>54</sup>

47 As these examples suggest, it is sometimes possible to gauge the audience response to such ballads and libels in a way that is rarely allowed by cheap printed texts. Of course, reactions often depended upon the quality of the performance and the content of the material involved, and they might vary according to the attitudes of readers or hearers both to the authors and their subjects. Ridiculing material of this kind was very likely to evoke strong opinions on all sides. Hilarity was clearly the intended result and it usually seems to have been achieved. "There was good laughing at the . . . readinge" recalled Christopher Horder, a West Country husbandman, of a "filthie libell" which he had heard in 1603. But other people, either from genuine indignation or a sense of feigned propriety, expressed distaste and disgust at the obscene or the irreverent. Christopher Auncell, an apprentice from Wimborne Minster, Dorset, who claimed to have found a copy of a very saucy rhyme on the ground in his master's back yard, protested that "it was a fowle piece of worke and that he would not have been the contriver of it for forty pounds". Most compositions were greeted with a mixture of reactions, no doubt. When in May 1609, for example, Simon Girdler of Tenterden, Kent, flagrantly performed a drunken jig outside the house of John Tylden, a godly magistrate of the town, "being a man of sober and very religious behaviour", it occasioned the hysterical merriment of some and the abhorrence of others: "his said behaviour being so publique [it] was not only laughed at by divers then seeing him and by others who heard thereof . . . but also some others then seeing him so behave him selfe were much

<sup>54</sup> P.R.O., STAC 8 1515, mm. 4, 8.

grieved and ashamed thereof and for shame went from him and left him alone in such manner".<sup>55</sup>

48 Libels were obviously an effective way in which people might jeer at, and so assault and wound, their betters. Historians generally tend to regard social relations in early modern England as being characterized by a nexus of paternalism and deference. In normal circumstances, landlords, masters and figures in authority offered their protection to the lower orders (more or less) in return for a tacit acceptance of the existing hierarchy of wealth and power. Sometimes this reciprocity was disturbed when the governors abused their position, or when the governed expressed their grievances in the violent protest of riot and rebellion.<sup>56</sup> But the evidence of libels suggests that another dimension might be added to this rather polarized model. Between the extremes of acquiescence and unrest there was a whole dynamic of interpersonal tensions, an oscillating interplay of conditional respect and cautious mutuality by which, in practice, people lived together across the gulfs of inequality and negotiated the day-to-day configurations of their vertical relationships.

49 It has been suggested that the façade of paternalism and deference may obscure a reality of animosities, but that "we catch sight of it only rarely".<sup>57</sup> Mockery in rhyme and song, however, begins to open up something of the shadowy world of social relations. For clearly, ordinary men and women, no matter how illiterate, were not inarticulate when it came to expressing their opinions and they could do so through a subtle and extremely powerful complex of channels. *The effects might be just as damaging to victims as any physical assault, indeed perhaps much more so, for, whatever the widening horizons and affiliations of the "better sort" in this period, the loss of reputation among their immediate neighbours still mattered greatly to most.*

50 There were few more effective ways in which people might give vent to discontent with their overlords than by composing a railing rhyme against them. Such things might be sung among the victim's friends and family and, if they could be written out, posted up in public or left on their doorsteps. Often they were

<sup>55</sup> P.R.O., STAC 8/1907, m. 13; STAC 8/153/29, m. 1; STAC 8/51/2, m. 2.

<sup>56</sup> For the best summary of social relations in this period, see Keith Wrightson, *English Society, 1580-1680* (London, 1982), pp. 57-65.

<sup>57</sup> Barry Reay, "Introduction", in Reay (ed.), *Popular Culture in Seventeenth-Century England*, p. 23.

inspired by malicious or spiteful motives and had no justification other than petty personal jealousies. But they might also be a powerful articulation of popular opinions and sensibilities, the expression of widely held notions of fair dealing in the face of perceived injustice. Brought to bear upon those who offended against community norms, they could be an informal censor and regulator of the most potent kind. For example, enclosing or battering landlords, forestalling or hoarding tradespeople, officials thought to be overbearing in the pursuit of their duties, all risked the ignominy of being "balladed".<sup>58</sup>

51 Such was the fate of Andrew Abington, lord of the manor of Over Compton on the Dorset-Somerset border. During a protracted dispute with his tenants over enclosure of the commons, he found himself the object of a number of libellous protests. Notwithstanding that they were said to be "simple unlearned people", the local husbandmen and their families managed to find someone to draw up a bond, to which twenty-six of them subscribed, claiming release from their obligations to Abington. They sent him, in addition, a pseudonymous letter of derision which was also read out at public meetings; and finally, in August 1616, they fastened this "infamous libell" to the church gate at Trent, Somerset, about a mile from the manor house:

*Heere be Andrew Abington's Commandementes*

Thou shalt do no right nor thou shalt take no wronge  
Thou shalt catche what thou canst  
Thou shalt paye no man  
Thou shalt comitt adulterye  
Thou shalt beare false witness against thy neighbor  
Thou shalt covett thy neighbors wief  
Thou shalt sell a hundred of sheepe to Henrye Hopkines after  
Thou shalt drawe the best of them  
Thou shalt sell thy oxen twice  
Thou shalt denye thye owne hand

Having composed this parody of the Ten Commandments, which emphasized their view of Abington's behaviour as a mockery of Christian charity, the tenants "did not only singe, repeat, publishe and divulge the said slanderous and vicious libell in innes, taverns and other places in [the] countyes of Dorset and Somerset and

<sup>58</sup> For some later examples of such "propaganda by poetry", see E. P. Thompson, "The Crime of Anonymity", in Douglas Hay et al., *Albion's Fatal Tree: Crime and Society in Eighteenth-Century England* (London, 1975), pp. 264, 301, 303, 337-40.

elsewhere, [but] sold abroad coppyes thereof". Here, apparently, was another example of a particularly striking libel that had a commercial value in written form. All this was said to have had the desired effect of bringing the squire and "his wief and children into publicke disgrace and infamy".<sup>59</sup>

52 Millers were another group who might feel the force of such communal censure. Their position of power within the local economy and community meant that they were traditionally figures of popular suspicion and even contempt, usually portrayed as lechers or misers. It was the former image upon which the Rotten brothers had drawn in their ballads of Anne Bellamie from Moseley. The latter image provided the theme for "A pleasante newe songe of a faithfull drunkarde dwellinge in Essex who was a myller", which cropped up in the summer of 1608.<sup>60</sup> Similarly caricatured and ridiculed was the Puritan, depicted as a zealous hypocrite no less often in these local libels than in the plays and pamphlets of professional humorists.<sup>61</sup>

53 The "godly" were especially vulnerable to lampooning if, when they held positions of office, they were perceived as being too "busy" or "precise" in regulating the behaviour of their neighbours. For there were in general many examples of mocking verses composed against authority figures such as churchwardens and constables, bailiffs and justices, or the mayor and aldermen

<sup>59</sup> P. R. O., STAC 8/42/14.

<sup>60</sup> P. R. O., STAC 8/185/23, m. 2. On the traditional perception of millers in popular culture and song, see E. P. Thompson, "The Moral Economy of the English Crowd in the Eighteenth Century", *Past and Present*, no. 50 (Feb. 1971), pp. 103-5.

<sup>61</sup> See, for example, P. R. O., STAC 8/26/10; STAC 8/27/7; STAC 8/94/17; also discussed in David Underdown, *Fire from Heaven: Life in an English Town in the Seventeenth Century* (London, 1992), pp. 27-32. A typical case was that before the Essex county quarter sessions in October 1618 involving John Taber, a yeoman of Margaretting Tye, who was accused of composing a song against a neighbour, John Gowers, yeoman, entitled "Gowers the Puritane". It included these lines:

He is become a headborough of late  
And all his witt runs through his pate.  
Yea, more hee is the great commandder at Tye  
Who will not sweare but slander and lye.  
He carryes a Bible under his arme  
How ys yt possible his neighbours he sholde harme.  
He by a slighte can handle a siccle  
And by candle lighte have a conventicle.

Essex Record Office, Chelmsford, QSR 222/12 (I am grateful to Keith Wrightson for this reference). On this genre in professional writing, see William P. Holden, *Anti-Puritan Satire, 1572-1642* (New Haven, 1954), esp. pp. 52-86, 101-44.

of corporations. Commonly would some allegation of corruption or abuse be so dispersed, as Isaac Cotton noted in 1622, "cast forth [in] certain rhymes or libells conteyninge as it were a dialogue full of scurrility and rude terms, scoffing and inveighing against [the] authority of officers and civil government, with menaces for subversion of the same and other base matter unfit to be spoken off".<sup>62</sup>

54 Thus it was that the unpopular chief constable of a wapentake near Leeds, John Harrison, found himself the focus of a ridiculing jig sung at alehouses on May Day 1616 in flagrant celebration of neighbourliness and good fellowship:

What nowe becomes of all idle talke,  
In alehouse and taverne and as you doe walke,  
Where some payed money and some did but chalke,  
What wise mirth is this good neighbours.

You rage and malice him that did saye,  
The parish had right and would have a daie,  
Would not this yeild matter to make a stage playe,  
For a ripe wiit good neighbours.

As we have seen, the libels composed against Thomas Shillito, the high constable of Barkston, Yorks., were widely popular partly because of their professional performances, but also because the tenor of their contents must have struck a chord with many:

Were God I weare a head constable,  
And had a Justice of my name,  
Then would I whipp and stock the poore,  
And think it neither sinne nor shame.<sup>63</sup>

The "Justice" referred to here was Shillito's brother, George, and men of this stamp were by no means immune from such treatment. "You thinke to oppresse men with your riches and authority!", bawled a Nottinghamshire man at a squire and Justice of the Peace whom he was alleged to have libelled in 1608. "Gaping and framinge a deformed mouthe in most scornefull manner", he "putt out his toung at [him]", uttering these "and divers other such sawcye and malepart words to the great scorne

<sup>62</sup> Brit. Lib., Lansdowne MS. 639, fo. 88r.

<sup>63</sup> P. R. O., STAC 8/167/27, m. 2; STAC 8/275/22, m. 2. For other libels against constables, see P. R. O., STAC 8/161/1; STAC 8/161/5; Underdown, *Fire from Heaven*, pp. 148-9.

and dyrision of justice". At another level, the scandalous sexual behaviour of Thomas Smith, a Justice of the Peace for Berkshire, so offended a group of yeoman farmers from Buscot and Lechlade that they tried to shame him into repentance with various mocking nicknames like "Justice balle, bald pated knave and whoremaster knave", and more forcibly with a ballad which they sang among the neighbours, even at a wedding.<sup>64</sup>

55 The wider threat to the social and political order which this kind of derogation of authority was seen to pose is well illustrated by some libels contrived in Northampton during the summer of 1607. A large and diverse group of the local inhabitants was responsible for what were clearly a very successful pair of ballads. One was "made against the knights and Justices of the county", and was "bought and sold for money" as far north as Leicester and as far south as Dunstable, Beds., where an innkeeper, Thomas Holland, paid 12d. for a copy. The other was composed to the scandal of the ecclesiastical authorities within the diocese of Peterborough and published on 22 September, the day of Archbishop Bancroft's visit to the town. It was found in the church of Allhallows and at "inns and alehouses, in sadlers and smiths, and other tradesmen's shops"; a gentleman, Thomas Burton, "said he would give an angell for a coppie of it, and shewe it to his lord", while Edward Thorowgood, a woollen-draper, promised to "sende it into Cambridgeshire to his friendes". This ballad, which took the form of a dialogue between a man and a woman, included a typical jibe at one dignitary:

He turnes his hat up in the brim,  
And lookes as though his eyes wold burne,  
He snappes poore people by the nose,  
And scornfully from them doth turne.

The libellers were said to have claimed that it was legitimate to publish such material, provided that it did not touch the person of the king, nor his privy councillors. The indictment protested that in so doing, they "bredd a most dangerous opinion in the hearts of the comon people as though it was lawfull to libel and traduce their governors both ecclesiasticall and temporall (so [long as] they be no Lords of the Counsaile)" and also helped to

<sup>64</sup> P. R. O., STAC 8/208/31, m. 3; STAC 8/256/9; for other libels on Justices of the Peace, see P. R. O., STAC 8/85/15; STAC 8/205/20; STAC 8/258/5; STAC 8/271/14; H. M. C., *Tenth Report: Appendix*, iv, p. 441.

"continue and maintain the hatred and dispiht bred in many of the baser sort of people against the gentlemen of the country" at the time of the uprisings in the Midlands.<sup>65</sup>

**S**6 It may have been the case that in prosecuting their assailants at Westminster, some libel victims were seeking to exploit such official anxieties over subversion and disorder. In general, the very fact that those from the most humble levels of society were presented before the Star Chamber at all, and, moreover, that they themselves might sometimes present others, is indicative that the law, even in the form of its most exalted court, was coming to loom increasingly large in the lives of people all the way down the social order. This was an unprecedentedly litigious age, and even Star Chamber business, dominated as it was by the gentry, involved people from the middling and lower ranks of society as either plaintiff or defendant in almost half the defamation cases tried during James I's reign.<sup>66</sup> The paradox of the libels examined here is that they were usually a supremely parochial phenomenon but one disputed and settled at the most elevated of levels. As such they were the reflection of a society which was at once intensely disparate and localized, yet at the same time constantly centralizing and moving in the directions of incorporation and nationality.

#### IV

**S**7 Verse libels offer valuable insight into the mental world of those at the least literate levels of English society in the early modern period, identifying them as producers and creators rather than merely as consumers and appropriators of their cultural repertoire. As such, they demonstrate some of the relationships between orality, literacy and print even in contexts where reading ability was highly selective and writing skills were rare. They

<sup>65</sup> P.R.O., STAC 8/205/19; STAC 8/205/20; Huntington Lib., Ellesmere MS. 5956. In July 1607 a libel was thrown into the parish church at Caistor, Lincs., entitled "The Poor Man's Friend and the Gentlemen's Plague", and beginning, "You gentlemen that rack your rents and throwe downe land for corne": H.M.C., *Twelfth Report: Appendix*, iv (London, 1888), p. 406.

<sup>66</sup> 265 out of the 577 defamation causes (46 per cent) involved men and women of "yeoman" status or below as either plaintiff or defendant. On the massive increase in litigation during this period, see C. W. Brooks, *Pettyfoggers and Vipers of the Commonwealth: The "Lower Branch" of the Legal Profession in Early Modern England* (Cambridge, 1986), chs. 4-5.

illustrate the common currency in popular ridicule of sexual allusion and imagery, used either to censure actual misconduct in this respect or else simply employed as the idiom of greatest shame. They suggest those forms of behaviour most often labelled as deviant within communities and point out those individuals most disliked: cuckolds and persons of lewd life, unpopular landlords and employers, Puritans and overbearing officials. There is an anti-deferential tone to many of these compositions which allows us to add another dimension to our appreciation of contemporary social relations. To be sure, the elusive and ephemeral nature of such material makes it difficult to recover, but it is also these qualities which give it an invaluable immediacy and spontaneity. "More solid things", appreciated John Selden, "do not shew the Complexion of the Times, so well as Ballads and Libells".<sup>67</sup>

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*Adam Fox*

<sup>67</sup> John Selden, *Table Talk*, ed. S. H. Reynolds (Oxford, 1892), p. 105.

## APPENDIX 2D: AN UNANALYSED COPY OF H1

Alan P. Dobson

### Labour or Conservative : Does it Matter in Anglo-American Relations?

- 1 **In the political tradition** of the Western liberal democracies, both moral convention and prudence dictate that one state should not interfere by either comment or action in the internal political affairs of another. Respect for the individual, and by extension for an independent nation-state, has much to do with the moral aspect of this, especially when one is dealing with a properly elected democratic government. The values of free government and individualism necessarily complement each other. Both demand the kind of respect which will allow their unique integrity to remain intact. The prudential grounds for avoiding involvement in the domestic affairs of another state, for example by expressing a clear preference for one political party over another, are twofold. First, by doing so a state invites retaliation in kind. Secondly, bilateral affairs may be rendered more difficult if the party for which a preference has been expressed does not gain power.
- 2 Thus, in relations between states, certain kinds of fictions have come into being: namely that all are of equal standing in the state system; and that diplomatic relations can be carried out in a non-partisan way. The Soviet Union might condemn the US for its exploitative capitalism, but it would regard it as improper openly to express a preference or to promote the electoral fortunes of one American political party at the expense of another. Such conventions have an even stronger binding power between friendly states like the US and Britain.
- 3 Since 1940, Britain and the US have been very close, and despite periodic difficulties have had, and continue to have, the closest co-operation of any two states in the fields of intelligence and nuclear technology. Also, for much of the post-war period they have worked together in managing the international economy. Quite clearly these matters are sensitive and highly political. Furthermore, the close

interaction between the two states, albeit evidence of their friendly relations, provides great potential for disagreements and the politicization of that which the Western political tradition has done so much to try to de-politicize. The existence in Britain of a Socialist Party which has held power for seventeen of the post-war years and believes in values and policies which have been strongly disapproved of by both the mainstream American parties has caused some very visible difficulties, for example over matters of nuclear defence, and some less obvious problems when Labour's domestic policies have affected foreign policy.

4 The danger of party-political difficulties arising between the two countries has been compounded by the asymmetry of their relationship which, except for just recently, has grown steadily since the second world war. British dependence upon the US has increased the temptation for the Americans to influence British domestic affairs in ways which benefit their own perceived interests. One would normally expect this to mean the favouring of the Conservative at the expense of the Labour Party, but this does not always necessarily follow. American antagonism towards the colonialist mentality of the Conservative Party has often been just as vehement as towards the socialism of Labour. As we shall see, this is pertinent when considering the Suez Crisis, but in the post-war era, British colonialism by comparison with socialism has largely been a spent force. Thus, for the US it has normally been the matter of socialist attitudes and policies which has been at issue and it is with this aspect of Anglo-American relations that this paper is primarily concerned.

5 In February 1987, when asked the question: 'Is a Labour Government at a disadvantage vis-à-vis a Conservative one in its relations with US administrations because of its socialist beliefs?' Lord Callaghan replied:

I don't think so, not up to the moment. I think that in terms of foreign policy, defence policy and intelligence, these common interests have not been a party matter particularly. . . . I suppose many Republicans when [William] Simon was at the American Treasury — right-wing Republicans — would have little time for the politics of a Labour Government domestically, but they would say those are domestic problems, and providing that we agree on the international problems then they can do what they like on domestic problems. . . . I won't go so far as to say Labour's relations with America . . . are better than Conservatives', but I wouldn't say they were any worse.<sup>1</sup>

6 Generally speaking, Callaghan was probably right: overall US relations with Conservative and Labour governments have had both

good and bad patches — the worst, of course, being under a Conservative administration at the time of Suez. However, the reasons for their bad patches have been rather different. During the premierships of the two Conservatives, Eden and Heath, the decline in Anglo-American relations and associated problems were caused by personality differences between British and American political leaders, and by judgments about the Suez Crisis and the priority of getting Britain into the EEC, and none of these things were necessarily party-political.<sup>2</sup> It is true that Labour took a very hostile line regarding the Suez adventure, but it is conceivable that a Labour government could have followed a similar path to that taken by the Eden government: only a few years earlier Attlee's Cabinet had considered using force to keep the Abadan oil refinery in British hands during the crisis caused by Iran's nationalization of the Anglo-Iranian Oil Company.<sup>3</sup> There have been times when Labour, like the Conservatives, have had disputes with the US which have been essentially non-party-political; for example over the American conduct of the Korean War. However, Labour have also had to contend with American hostility arising directly from both Labour's socialist beliefs and from some of the policies central to their programme for government, when these have clashed with policies which the Americans wanted them to adopt.<sup>4</sup>

7 Lord Callaghan was wise to preface his reply with the qualification 'up to the moment'. The interview was prior to the 1987 General Election, when a policy which has become increasingly central to the Labour Party's programme for government became highly contentious, not only within the UK, but also in Anglo-American affairs.

8 On 27 May 1987, President Reagan made a statement which clearly breached the convention of 'no political interference in the domestic politics of another, and particularly of a friendly democratic nation state'. Michael Binyon wrote in *The Times* on 28 May:

Describing the policies of the British Labour Party on defence as 'grievous errors', President Reagan yesterday came closer than any US official has yet done to open intervention in the election in support of Mrs Thatcher. . . . he said that if a government was elected in Britain that embraced unilateral disarmament and sought the removal of US bases, 'I would try with all my might to persuade that government not to make those grievous errors.' But he expressed confidence that the friendly relationship would continue which, he said, had survived Labour governments in the past, as well as Conservatives.



<sup>5</sup>But I have to tell you I have great admiration for the manner in which Prime Minister Thatcher has handled not only the domestic affairs but the international affairs.<sup>5</sup>

9 For a while Mr Kinnoch, the Labour leader, behaved more prudently than Reagan and declined to comment on this obviously partisan statement, but the temptation was too great and in the end he even suggested that the Conservatives had prompted Reagan to make his remarks. This drew from Mrs Thatcher a riposte defending the President, which was laudable in its loyalty to their mutual friendship, but of questionable validity regarding the conventions of what is normally permissible in such situations.

10 She rejected the idea that Mr Reagan had intervened in the election with his remarks about Labour's defence policy: 'We are free to say what we wish. We must extend the same freedom to other people'.<sup>6</sup>

11 Interestingly, although Mrs Thatcher rejected outright the idea that President Reagan had intervened in the election (though he clearly had), she still felt it necessary to offer a justification for intervention. Taken out of context, the latter part of her statement has a sound ring of truth to it, and perhaps it was phrased in a general way to have that effect, but in the context of the norms governing relations between states, her statement is clearly found wanting. It is not normally acceptable for one state, even in its right to exercise free speech, to try to influence the outcome of elections in another, particularly if they are close friends and both democratic. As noted at the beginning of this paper, there has long been some moral force behind the idea of conducting relations in a manner which is impartial regarding the domestic politics of another state: there are also well-established prudential grounds for one state not adopting a partisan stance vis-à-vis another and this is especially so during election time. Thus, according to the letter of the law, Mrs Thatcher was right: one democratic state extends, or rather acknowledges, the 'right' of free speech of other states, but moral convention and prudential reasoning, both championed by the Western political tradition, rule against her concerning partisan statements in the kind of context in which they were uttered by President Reagan.

12 Reflecting on this incident, one might be tempted to shrug it off as a regrettable lapse of conventional propriety in a Western world which, according to some, has become increasingly doctrinal and dogmatic in recent years. However, looking back over the last half century, there are ample cases of American governments being exercised by

both the prospects of the Labour Party coming to power and by some of its policies.

13 Since the war, the Labour Party in opposition and government has had problems in its relations with the US on three major counts, though in some cases it has not been fully aware of the extent of them. First, there has been American concern over the ideological perspective of Labour Party socialism; secondly, there have been recurrent problems about nuclear weapons, regarding both Labour's sometime attachment to unilateralism and what some American have seen as her security risk; and thirdly, Labour's economic policies have posed a challenge to the more free-market American economic doctrine and have also placed more emphasis on domestic health, welfare and education policies than on defence, which has caused disquiet in Washington on many occasions.

14 Many areas of foreign policy of concern to US and Labour governments have, of course, remained non-partisan. For example, Secretary of State James Byrnes, commenting on the mid-conference change-over at Potsdam in 1945, wrote: 'Britain's stand on the issue before the conference was not altered in the slightest, so far as we could discern, by the replacement of Mr Churchill and Mr Eden by Mr Attlee and Mr Bevin.' Making a similar point in a humorous way, he also told the story, probably apocryphal, of a lady mistaking the short, stout, powerfully built Bevin making a speech in London to the United Nations General Assembly for the elegantly tall Eden. 'Anthony Eden is making a good speech, but he seems to have gotten a little stout.'

15 These remarks should be borne in mind as a counterbalance to the following selective overview of post-war Anglo-American relations, which concentrates on difficulties that have arisen in the alliance because of party-political and ideological differences. In particular, attention is directed at the 1949 sterling devaluation and the Nassau Conference of 1962, but other matters are considered as well. It is not the intention to give the impression that relations between US and British Labour administrations have been plagued constantly and extensively by difficulties arising from ideological differences. However, it is the intention to show that since the second world war there have been occasions when ideological and party-political differences have been important.

16 Throughout the second world war, the Americans tried to woo the British away from policies which would have involved peacetime economic controls. The majority of the Coalition Government and its

advisers took a pragmatic line in that they favoured a freer post-war economy untrammelled by controls but, because of Britain's weak and war-damaged economy, they baulked at the speed with which the Americans wanted to move. Many were also sceptical as to whether or not America would, or, given possible difficulties in Congress, could live up to its profession of principles. If it did not, America's strong economy would continue to be protected, while Britain's enfeebled economy would be thrown open to foreign competition.

17 As the war progressed, the wooing became ever more forceful, with the US in a unique position to exploit Britain's economic vulnerability both as the supplier of Lend-Lease and as the only source for post-war credits of a size required by Britain. By 1946, Britain's liabilities exceeded her reserves of approximately £450 million by seven to one; during the war she had liquidated over £1 billion of overseas investments; her exports were still in a very poor way and it was estimated that she would have to carry a balance-of-payments deficit of £750 million in 1946. Nevertheless, the US had persuaded HMG to accept a broad commitment to freer trade and to co-operate with the US in forthcoming trade talks. Also, more specifically, she got Britain first to accept the conditions of the IMF and then even more strict conditions regarding both the convertibility of sterling and the abandonment of controls in the Anglo-American Loan Agreement of 1945/46. In return, the US wrote off Lend-Lease supplies as a contribution to a common war effort, and gave Britain a line of credit of \$3.75 billion at 2 per cent interest.<sup>8</sup>

18 The prospects facing the Labour government as 1946 began were not very encouraging. Many of its members opposed economic protectionism, but saw much virtue in controls which would allow them to avoid the worst vagaries of capitalism. The Labour government did not want to sacrifice its programme of domestic reforms — health, education and welfare — nor its goal of full employment, to meet American demands for a freer international economy which could push them towards deflation, higher unemployment and lower public spending in order to force out exports. This was a particularly troublesome issue because of the post-war difficulties for sterling arising from wartime sterling debts and the loss of major export markets.<sup>9</sup>

19 The first crisis for the British came in August 1947 when, on the 20th of that month, they were forced to suspend the convertibility of sterling, contrary to the provisions of the Anglo-American Financial Agreement. The economic consequences of the war, the terrible

winter of 1946/47, and the continuing cost of overseas defence operations — exacerbated by the developing Cold War — all contributed towards undermining the health of the British economy and rendering it incapable of sustaining sterling convertibility.<sup>10</sup>

20 Anglo-American tension in the economic sphere was present throughout this period. The Americans thought that Britain's domestic policies were extravagant and in any case disliked them on doctrinal grounds. They feared an expansion of Labour's domestic economic interventionist and control policy into the international sphere at America's expense, and disliked the idea that American aid was being used to subsidize socialist policies. However, much of the ill-feeling generated in the economic realm was tempered as the Cold War developed, by the realization that the US needed Britain to help strengthen Western Europe and oppose the international threat from communism.

21 Almost exactly two years after the convertibility fiasco, the British economy was in trouble again, with her reserves dwindling at such a rate that devaluation eventually became necessary. During this economic crisis there were tense exchanges with the US and the continuation of British socialist policies was threatened.

22 Relations between economic officials of the two countries had been uneasy since the war. John Snyder, Secretary of the US Treasury, described Hugh Dalton, Chancellor of the Exchequer 1945–47, as 'impossible' and as having 'no sense of balance or reality'. Dalton in turn dubbed William Clayton, US Under-Secretary of State for Economic Affairs, 'doctrinaire Willy' because of his adamant convictions concerning the free market. By 1949, Sir Stafford Cripps had replaced Dalton, but the acrimonious economic atmosphere remained.<sup>11</sup>

23 As the devaluation crisis began to unfold in the summer of 1949, Snyder, on a visit to Europe, found time for economic talks in London with British officials. He clearly thought that the more socialist aspect of the Labour government's policies was a major culprit in the troubles. However, it was the solution to Britain's problems which Cripps was currently contemplating, which worried Snyder most. In a letter to Secretary of State Acheson he wrote:

... we now seemed [sic] to be facing squarely a fundamental difference between US and UK in approach to problem of economic recovery and stability. In short, Cripps seems to want to propose what is essentially international state planning in a positive manner as a method of coping with the recurrent dollar crisis of UK.

He continued:

The major part of such a plan — and this is what he [Cripps] emphasized — seemed to be international planning to insure stability on a status quo basis rather than the kind of flexibility required to shake out high costs and restrictive elements which contribute to present difficulties.<sup>17</sup>

24 Acheson, more sympathetic towards Britain's problems and more conscious of the defence role she had to play, was uneasy about the way Snyder's talks were going in London and really wanted them to be restricted to fact-finding. There was little doubt in most American minds where British loyalty lay in the war against communism, especially while Ernest Bevin was in charge of the Foreign Office, and so men like Acheson were prepared to be indulgent — within reason — regarding British socialist experiments.<sup>18</sup>

25 The talks with Snyder resolved nothing, but as the sterling crisis deepened, HMG decided that they would need to have further talks in Washington. Secret discussions to be conducted by Bevin and Cripps while in the US on IMF and NATO business were scheduled for September. By 29 August those talks were to take on an increased importance as opinion in the Cabinet hardened in favour of devaluation; however, ministers also agreed that: '... reductions in public expenditure in this country should not be discussed during the Washington talks as a condition of any assistance by the United States or Canadian Governments'.<sup>14</sup> The Cabinet was clearly aware of the delicate situation which existed between the US and her free-market beliefs and their own socialism. Sensitivity to such matters was not, however, confined to the British: on 15 August, Lew Douglas, US Ambassador to London, wrote a long personal letter to Acheson, explaining the political delicacies of the situation. In Douglas's view, members of the British delegation going to Washington were in a desperate state of mind. Although they looked to the Americans for answers to their problems, they were also smarting under American criticisms, partly blamed the US for their problems, were distrustful of US policy and suspicious of 'a system of free enterprise'. Before them was the spectre of 1931 — the economic crisis of that year split the party in a most damaging way — which made them fearful of another internecine struggle, particularly with the strong anti-American faction in the Labour Party, if they were forced into public-spending cuts and deflation. Douglas continued:

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I, myself, believe that we should not, through indirect means, give so much assistance to the British (it would make no difference what government was in power) that facing the issue can be long put off.

26 The remark that it would make no difference which party was in power was a little ingenuous, given that the Conservatives would in principle, and most likely in practice, have been much more amenable to the idea of shaking out some of the rigidities and high costs in the British economy because of their greater sympathy for the free market.

Douglas went on to say:

At almost any cost, it seems to me, we should try to prevent: (a) ideological differences from developing into at least softly acrimonious debate; and (b) permitting the meeting to come to an end with the impression uppermost in the British mind that we are intent upon bringing about the downfall of the present government. Should such a situation develop, it is not unlikely that in the forthcoming campaign that will be held here in Britain, whether it be held in October or next spring, the present party might stand on a strong anti-American platform. This, according to some observers here, might return the present party to power. It is not their return to power which is perhaps so important as their return to power on an anti-American platform. I don't need to spell out the consequences to us of such a development. I, myself, don't believe that an anti-American campaign would be successful if the Conservatives handle the issue properly, but, there are some who have a different view.<sup>15</sup>

27 The Anglo-American talks in Washington between 7 and 12 September 1949 started coolly: the Americans refused to make any proposals for dealing with the sterling crisis and waited for the British to make the running. In the end, matters were resolved by the British announcing that they would devalue from \$4.03 to \$2.80 to the pound and with agreement being reached with the Americans on a number of things which would hopefully help the British economy, e.g. plans to simplify US import procedures, the waiving by the Americans of Britain's non-discrimination commitment on a wider basis, a new European monetary organization, etc.<sup>16</sup>

28 The Americans had not forced deflation upon the British, except insofar as they were not prepared to provide sufficient support to allow Britain to avoid devaluation. However, part of their reason for not being more forthcoming was a reluctance to help perpetuate Labour Party economic policies they disagreed with, along with the conviction that whatever aid they did give would not be sufficient to allow the British economy to function effectively in the long run

without a shake-out of restrictive labour practices and high costs, and the development of a more flexible and competitive economy. There were differences of opinion within the US, notably between Acheson, who wanted to be forthcoming and co-operate closely with Britain in order to help solve her problems for the sake of wider mutual Anglo-American interests, and John Snyder, who was highly sceptical of the socialist aspects of the British economy. He did not want to give assistance which might allow the British to avoid facing up to 'economic realities'. In the end, Snyder's view prevailed, moderated by some of the longer-term proposals to help Britain in the post-devaluation period, even though they were also geared to promoting America's goal of a freer world economy.

29 In contrast with the post-war Labour administrations, the Conservative governments of the 1950s did not experience as much conflict generated by party-political differences in the spheres of economic and social policy. On the whole, Churchill's relations with the Truman and Eisenhower administrations were good and his friendship with the latter, begun during the war, continued in the 1950s. But the wartime closeness pined after by Churchill was never fully re-established and there were a number of serious differences with Truman and Acheson over the NATO naval command in the Atlantic (which Attlee had reluctantly handed to the Americans) and over the crisis in Iran resulting from the nationalization of the Anglo-Iranian Oil Company. With Eisenhower there were problems concerning Britain's refusal to participate in a proposed military operation to help the French in Vietnam and over Foreign Secretary Eden's support for the Geneva Accords, which temporarily ended the crisis in Vietnam by partitioning it between the communists and non-communists. There was also the matter of the West's attitude towards colonialism and the emerging countries of the Third World. It was partly because of this that Eisenhower refused to establish a relationship similar to Churchill's wartime one with Roosevelt. Both the President and his Secretary of State, John Foster Dulles, wanted to distance the US from the colonialism of their European allies.<sup>17</sup> The Conservative Party's long association with the British Empire and colonialism was a source of friction with the US, and contributed to the severest post-war crisis in their relationship.

30 In 1956, responding to the nationalization of the Suez Canal by President Nasser of Egypt, France and Britain colluded with Israel to spark off a military crisis which was then used as a pretext for military intervention by France and Britain in order to regain control of the

Canal. The reasons for this have been explained and the events have been well catalogued elsewhere; suffice it to say for our present purposes that the US was horrified by the military developments.

31 Eisenhower and particularly Dulles were strongly critical of traditional imperialism. Dulles was a dour, legalistic Puritan who doubly hated European colonialism: he hated it in its own right and also because the colonial tradition of America's European allies alienated the newly independent Third World countries and pushed them into the arms of the communists. Given the fact that Dulles was fervently committed to the global conflict against communism, this meant that the European powers had a lot to answer for. His unbending attitude and indiscriminate condemnation of European colonialism were particularly exasperating for Anthony Eden, who was among the progressives in the Conservative Party and bent evolutely disposed towards granting independence to colonial states. Eden was also angry that Dulles refused to distinguish between what he, Eden, saw as Britain's enlightened form of colonialism and France's more repressive and violent brand.

32 These conflicting views, and one could add misunderstandings resulting from Dulles's remaining wedded to a long-established American stereotypical view of Tory colonialism, contributed significantly to the schism in Anglo-American relations at the time of Suez. The colonialist/anti-colonialist aspect of US-UK relations became even more important once the Hungarian crisis erupted with the Soviet military intervention to stop liberalization. Dulles and Eisenhower believed that French and British military intervention in Egypt compromised the West's moral position and devalued what would otherwise have been extremely valuable propaganda ammunition for use in the Third World arising from the Hungarian situation. It was at least partly because of this that Eisenhower dissociated the US from Britain and France, and applied economic sanctions which eventually ended military action in Egypt.<sup>18</sup>

33 However, it would be misleading to suggest that the difficulties that arose because of party-political differences were straightforward in the sense that Labour's problems with America arose from her economic and social policies, and the Conservatives' from their association with colonialism. Things are not as clear-cut as that. For example, Attlee and Bevin had more trouble over what was perceived by the Americans as their colonial attitude towards the Iranian nationalization of the Anglo-Iranian Oil Company than their Conservative successors had. Alternately, the Conservatives had

some political problems with the US in the economic sphere, for example over what the US regarded as the overly liberal attitude of Conservative governments towards trade with communist states. A further complicating factor in the role that party politics play in Anglo-American relations is to do, not with American reactions to existing policies of British governments, but with what the US government has been prepared to do to prevent the Labour Party coming to power. We have already noted a fairly innocuous example of this in the 1987 General Election campaign, but there was a more sinister case in 1962.

34 In 1958, the US repealed the 1946 McMahon Act which had prohibited close nuclear co-operation with foreign countries. For some years prior to that repeal, however, Britain and the US had been edging towards closer co-operation. Then, following the Soviet success with Sputnik 1, the impetus towards Anglo-American co-operation accelerated. Thus, in 1958 the Americans concluded an agreement with Britain, giving her preferential access to American nuclear technical know-how.<sup>19</sup> In 1960, this was followed by their agreeing to supply Britain with Skybolt Missiles for her 'V' bomber nuclear force, which extended its effectiveness into the 1960s. In a separate agreement, Britain provided a *quid pro quo* in the form of the Holy Loch base for US nuclear submarines, and that same year the two countries agreed to set up the Fylingdales early warning station (commissioned in 1963).<sup>20</sup>

35 Prime Minister Macmillan's renewal of close Anglo-American nuclear co-operation was important for him politically, especially as he presented his overall relationship with the US to the British public as special. Consequently, when things began to go wrong in 1962, there was the potential for very serious political damage.

36 Macmillan's relationship with President Kennedy has been widely recognized as one of the very great Anglo-American personal relationships. Nevertheless, a complicated constellation of factors, which had a bearing upon nuclear matters, formed in 1962 to threaten Anglo-American relations.

37 By 1962, four things had changed American minds about the desirability of Britain having an independent nuclear deterrent. First, by 1962 the American military were confident that the US had an overwhelming nuclear superiority over the Soviet Union. Secondly, Robert McNamara, US Secretary of Defence, was obsessed with cost-effectiveness: he condemned small independent deterrents as inefficient and costly and believed countries like Britain could perform

a more useful task in the sphere of conventional defence. Thirdly, the Cuban Missile Crisis of October 1962 highlighted the fact that Europe and the US did not have identical interests, which brought home the possibility of one of them dragging the other into a full nuclear exchange with the Soviet Union for interests which it thought vital but which the other did not. A way of obviating this danger for the US was to bring all the West's nuclear arsenal under central targeting (an efficiency argument) and American command (a political argument). Fourthly, the US wanted Britain's application to join the EEC to succeed. The Americans believed that she would help to stabilize the community politically, make it more outward-looking and help to moderate its protectionism, especially regarding agricultural produce. People in the State Department, most notably Under-Secretary George Ball, feared that a preferential nuclear relationship between the US and Britain would antagonize President de Gaulle of France and convince him that the interests of the Anglo-American special relationship continued to take preference over Britain's ties with Europe. The result of that would probably be a French veto on Britain's application to join the EEC.<sup>21</sup>

38 It was while these views were current in the US that the development of the Skybolt Missile ran into difficulties. So far as Macmillan was concerned, this could not have happened at a worse time. The economy was in difficulties; he had made sweeping changes to his Cabinet in a manner which can only be described as ill-judged; the government had been criticized over the Vassal spy case, and his application to join the EEC was faltering. Now to cap it all, Macmillan's much vaunted special relationship with the Americans came under great strain because of the likely cancellation of Skybolt, which, if not replaced by an alternative delivery system, would deprive Britain of an effective nuclear deterrent. The Americans made Skybolt's difficulties public with scant regard for the political impact this would have in Britain, and neither McNamara nor the State Department wanted the Polaris submarine missile system to be offered to Britain as a substitute, despite a gentlemen's understanding on such an option between Eisenhower and Macmillan in 1960. This crisis erupted just weeks before the meeting between Kennedy and Macmillan at Nassau in December 1962.<sup>22</sup>

39 Macmillan was successful in gaining Polaris for Britain at Nassau, but how did he do it given the overwhelming opinion among Kennedy's senior advisers that it should not be sold to Britain?

40 Macmillan was very skilful. He played upon Kennedy's sentiments, extracting everything he could from the premium Kennedy placed on loyalty and good faith among friends. He, at least, partially allayed the President's fears regarding the effect a Polaris deal might have on France and in turn on Britain's application to join the EEC, by telling him that de Gaulle had been sympathetic about Britain's nuclear deterrent at their recent Rambouillet meeting and that agriculture, not nuclear weapons, threatened the chances of success of Britain's application. Macmillan also rehearsed the story of Britain's nuclear endeavours and the less than fair treatment that she had had at the hands of the Americans over the years. Theodore Sorensen recounts that some time after the Nassau meeting, Kennedy told him that '... it might well be concluded that ... we had an obligation to provide an alternative [to Skybolt]'.<sup>23</sup> The final agreement also had a sop for those Americans who opposed the continuation of Britain's independent nuclear deterrent. HMG pledged to commit her Polaris submarines to a multilateral nuclear force, which was something the State Department had come up with to allow Britain and France to save face but would in effect bring their nuclear weapons under American control. However, at the same time Britain was to be allowed to use the Polaris weapon independently in a situation of supreme national crisis (and, as it transpired, a multilateral force never materialized).<sup>24</sup>

41 Thus, on grounds of friendship and loyalty and on the basis of obligations which Macmillan tried to persuade Kennedy were owed to Britain by the US because of what had gone before, pressure was brought to bear on the President to sell Polaris to Britain. A possible agreement was facilitated both by Macmillan's reassurances that it would not offend de Gaulle and by wording in the agreement intended to appease the supporters of a multilateral force in the US State and Defence Departments. However, there was also a party political consideration which acted as an important catalyst in the chemistry of reaching agreement.

42 In his memoirs, Under-Secretary Ball mentions a political perspective which affected Kennedy's decision, but he gives the impression that the running on this was made by the British and states that the Americans were ill-prepared for the conference.<sup>25</sup> In actual fact, his Department had prepared a briefing paper for Nassau which shows that the Americans had thought through the political implications if Macmillan were to leave Nassau without something which could boost his political fortunes. Somewhat unwittingly, the State

Department, which was against selling Polaris to Britain, had come up with factors which helped persuade Kennedy to just such a course of action. The paper advised that:

... the President needs to support the young leaders of Tory Britain who will by and large represent and direct the creative energy and the driving force of modern Britain. The alternative is a Labor [sic] government which would be equivocal on the subject of EEC, would persist in dangerous illusions regarding East-West relations, would wish to spend more on social welfare and less on defense and would allow the British ship of state either by design or indifference to drift toward the Scandinavian position of part participation, part spectator with regard to the Atlantic community.<sup>26</sup>

43 The danger of Macmillan's government falling and being replaced by Labour was also raised by Kennedy's friend David Ormsby-Gore, the British Ambassador to the US, as he flew with the President to Nassau on Airforce 1. And finally, at the meeting itself, Macmillan also raised the spectre of a Labour government coming to power and asked Kennedy if he wanted to be responsible for the downfall of his friend's government.<sup>27</sup>

44 Thus was Kennedy squarely confronted with the prospects if he failed to sell Polaris to Britain. Not only would he be instrumental in the political downfall of his friend, but a Labour government would threaten the prospects for an enlarged EEC and would probably reduce Britain's commitments to Western defences. More specifically, the Holy Loch facility, and indeed other American nuclear bases, might be closed, and work on the early warning station at Fylingdales might be halted.

45 Others in Kennedy's administration saw the need to craft an agreement at Nassau which would help Macmillan with the domestic political challenge from Labour, but the evidence indicates that Kennedy was really the only one to draw the conclusion (after considering all the factors, which as we have seen include others apart from party-political ones) that Polaris had to be sold to Britain to replace Skybolt.

46 Kennedy's decision was helpful politically for Macmillan and the following year his fortunes temporarily recovered even further with the signing of the Partial Nuclear Test Ban Treaty. However, the respite for him and the Conservative Party was short: Macmillan handed over to Sir Alec Douglas Home in October 1963 and a year later Harold Wilson led the Labour Party to victory in the General Election.

47 Somewhat to the surprise of the Americans, Labour was by no means as bad as they had expected. Wilson and most of his leading ministers, Michael Stewart, James Callaghan and Denis Healey, were all strongly pro-American. Wilson kept Polaris, bought much military hardware from the US — including F-111a aircraft to replace TSR-2 — and gave diplomatic support (sometimes selectively) to American policy in Vietnam. Furthermore, despite many American reservations, there developed an economic special relationship whereby the US propped up sterling, and in return — though this was an informal *quid pro quo* — Britain was expected to perform an important role in the West's defences, both on the Rhine and east of Suez.<sup>28</sup> There seems little evidence of difficulties arising out of party-political differences here.

48 Nevertheless, delving below the surface there are some ominous signs. Wilson did not have a good relationship with President Johnson, who on one occasion did his best to avoid having to meet the Prime Minister who was visiting the US. Johnson, Secretary of Defence MacNamara and particularly Secretary of State Dean Rusk were all angry that Wilson did not send a British military contingent to Vietnam. They were irritated by his attempts to mediate with the help of the Soviets between the warring parties in Vietnam, and were bitter when Britain announced her intention to withdraw militarily from east of Suez. However, it is doubtful if British policy would have been much different under a Conservative government.<sup>29</sup>

49 One of the most sinister aspects of the Wilson period has recently come to light during the so-called Spy-Catcher Affair, with allegations from British and American intelligence personnel that Wilson was a Soviet agent. Such allegations are quite preposterous, but James Angleton, Chief of CIA counter-intelligence at the time, and Peter Wright, a senior British intelligence officer, were party to them. Whether they had any real impact on the quality of Anglo-American relations is difficult to assess, but they were undoubtedly potentially dangerous and what is more, it is difficult to believe that even Peter Wright's (author of the book *Spy-Catcher*) paranoia could extend to making similar accusations against a Conservative Prime Minister.<sup>30</sup>

50 The answer to the question: 'Does it matter for Anglo-American relations whether the British government is Labour or Conservative?' is clearly 'Yes'. It is more difficult to establish just how much it has mattered, for this has varied according to the people in power, policies and circumstances. *Prima facie*, for example, one would have thought that Prime Minister Heath and President Nixon would have

done much to strengthen the special relationship. Their political dispositions were not dissimilar and apparently Nixon had great admiration for Heath. In the event, things turned out very differently, not because of doctrinal differences but because Heath gave priority to Europe over the US, Nixon was preoccupied with Vietnam, and economic developments had effectively ended the Anglo-American economic special relationship of the 1960s.<sup>31</sup>

51 During Heath's time, it was personality and policy differences which resulted in a cooling of Anglo-American relations; it was left to a Labour politician, James Callaghan, first as Wilson's Foreign Secretary and then as Prime Minister, to try to renew their usual warmth. Callaghan established close contact with President Carter and played an important mediatory role between him and European leaders, but his greater and perhaps more surprising success was in becoming close friends with the Republican, President Ford. The question for us is did this at all temper the political differences between the socialism of the Wilson and Callaghan governments and the political convictions of the Carter and more particularly, because of the larger political gap, the Ford administration? In the devaluation crisis of 1949, the fact that the British government was Labour, pursuing the kind of domestic welfare policies one would expect, caused considerable difficulties with the US. At the end of the day, it resulted more in American forbearance regarding possible economic assistance than in positive requirements that the British adopt specific policies. The situation was rather similar in the sterling crisis of 1976 when, as Callaghan has recalled, the conservative US Treasury Secretary, William Simon, was not very helpful, despite much sympathy being expressed by President Ford. Once again, the US forebore to act, this time until Britain had completed negotiations with the IMF, which involved the now famous letter of intent from Chancellor of the Exchequer Healey, limiting Britain's public sector borrowing right to £8.7 and £8.6 billion respectively for 1977/8 and 1978/9.

52 According to Callaghan, this dose of deflation was little different to that which he and Healey, independently of the IMF, had decided was necessary, but quite clearly a more sympathetic political disposition in the US could have sweetened the pill.<sup>32</sup> Despite Callaghan's generous rendering in his memoirs of American actions during the 1976 sterling crisis, he has made a less than favourable contrast elsewhere between the helpful attitude of the US in the 1960s when he was Chancellor of the Exchequer (and he appeared to

include in that reference the time of the 1967 devaluation) and the much harder line taken with his Chancellor of the Exchequer, Denis Healey, in the mid 1970s.<sup>33</sup>

53 It seems fairly clear that US administrations have looked on Labour domestic policies with a critical eye, much more so than on Conservative. This has caused them to hold back at times in the specific hope that it would lead to a change in Labour policies. There have also been times when the Americans have urged Labour governments to spend more on defence, e.g. during the Korean and Vietnam wars, with the clear implication that welfare spending be reduced to enable this. Similar urgings can also be seen in relation to Conservative governments, but never with quite the same political tensions involved. The US has also favoured the Conservative over the Labour Party as the party of government. This was clearly involved in American reasoning at the Nassau Conference; also, it has been suggested that Eisenhower agreed to hold a summit in 1955, contrary to his long-standing prejudice against such meetings, in order to boost the election chances of Anthony Eden in the General Election of that year.<sup>34</sup> And finally, the Americans seem much more ready to countenance the possibility that the Labour Party harbours within it traitors to the Western Cause than they are regarding the Conservative Party, and furthermore, what some Americans see as a comparable political stigma attached to the Tory Party, namely its colonialist traditions, are rapidly dying away.

54 Nevertheless, after saying all this, the issue still refuses to lend itself to clear-cut conclusions. For example, when Labour did gain power in 1964, things in the defence realm worked out far better than the Americans had expected. The Wilson government kept Polaris, bought a large amount of American military equipment, supported much of America's war in Vietnam, and on the personal level in the defence field the Americans got on much better with Denis Healey, Minister of Defence, and Chief of Staff, Air Chief Marshal Elisworthy, than they had with their equivalents under the Conservatives, Peter Thorneycroft and Lord Mountbatten.<sup>35</sup>

55 It is naive to suggest that party political preferences have not been a significant factor in Anglo-American relations, but it is also naive to suggest that the Labour Party is consistently and extensively disadvantaged in its relations with the US. The relationships between Ernest Bevin and Dean Acheson and between James Callaghan and a number of senior American officials and politicians such as Henry Fowler, James Carter and above all Gerald Ford (a

conservative Republican) are ample testimony to the fact that good relationships can and have existed across a broad spectrum of issues involving the Labour Party in power and the US.

56 Party politics do make a difference and will continue to do so, perhaps more ostensibly than in the past, if the kind of conviction politics seen in the Labour, Conservative and Republican parties over the last few years continue. The manner, the extent and the occasion in which they make a difference, however, can only be determined *ex post facto* by detailed historical enquiry and not by broad sweeping generalizations, nor by uncritical acceptance of conceptual norms about the way the state system supposedly operates.

### Notes

1. Callaghan interview with Lord, then Sir James, Callaghan, 26 February 1987 in the House of Commons, conducted by the author.
2. See D. Carlton, *Anthony Eden* (London 1981); A. P. Dobson, *The Politics of the Anglo-American Economic Special Relationship* (Brighton and New York 1988), 161–73; H. Kissinger, *The White House Years* (London 1979); and U. Kitzinger, *Diplomacy and Persuasion: How Britain Joined the Common Market* (London 1973).
3. *Public Record Office* (PRO), CAB 128, 27 September 1951, 60(51) 5 & 6.
4. For difficulties over the Korean War see D. Acheson, *Present at the Creation* (New York 1969), 478–85; H. S. Truman Library (HST Lib.), Acheson Papers, box 65, memo. of conversation 7 December 1950; for US desire that Britain increase her defence spending, *ibid.*, HST PSF, box 113, folder: General File, Attlee, Clement, 6 December 1950, State Department paper, 'Importance of Increasing Britain's Defence Effort'; and M. L. Dockrill, 'The Foreign Office, Anglo-American Relations, and the Korean War June 1950–June 1951', *International Affairs*, 1986; similarly for 1960s see, for example, L. B. Johnson Library (LBJ Lib.), LBJ Country File, folder: Trendex, McGeorge Bundy memo. to Johnson, 28 July 1965.
5. M. Binyon, 'Reagan's View of Britain', *The Times*, 28 May 1987.
6. *Ibid.*, Philip Webster, 'Thatcher Keeps the Spotlight on Defence', 29 May 1987.
7. J. Byrnes, *Speaking Frankly* (New York 1947), 79.
8. See Dobson, *Economic Special Relationship*, op. cit., chapters 2 and 3, and for a more detailed account of Lend-Lease and its implications by the same author, *US Wartime Aid to Britain 1940–46* (London 1986); Cmd. 6707, 'Statistical Material Presented During the Washington Negotiations', December 1945; Cmd. 6708, 'Financial Agreement Between the Governments of the United States and the United Kingdom' 1945; see also various volumes of *British Official History of the Second World War: Civil Series, and Peacetime History*, HMSO.
9. See L. S. Pressnell, *External Economic Policy Since the War: Vol. 1: The Post-War Financial Settlement* (London 1987), for a very detailed and full account of the sterling problem from the British perspective.
10. See Dobson, *Economic Special Relationship*, op. cit., 87–113.



11. HST Lib., Oral History, J. Snyder interviewed by J. Hess, 3 September 1969, 1013; H. Dalton, *High Tide and After: Memoirs 1945-50* (London 1962), 256.
12. HST Lib., Snyder Papers, box 108, folder: Trip File Visit to Europe, July 22-4, 1949, England, Snyder to Acheson, 9 July 1949.
13. *Ibid.*, Acheson to Snyder, 11 July 1949; Acheson, op. cit., 322-3.
14. PRO, CAB 128, 29 August 1949, 53(49) 1 & 5.
15. HST Lib., Acheson Papers, box 64, folder: memos. of conversation August-September 1949, Douglas to Acheson, 15 August 1949; for a recent account involving the 1931 crisis see A. Thorpe, 'Arthur Henderson and the British Political Crisis of 1931', *Historical Journal* 31(i), (1988).
16. See A. Milward, *The Reconstruction of Western Europe 1945-51* (London 1984), 292; A. Bullock, *Bevin* (Oxford 1985), 718.
17. See R. H. Ferrell, *The Eisenhower Diaries* (New York 1981), entry 6 January 1953; and Carlton, op. cit.
18. See Dobson, *Economic Special Relationship*, op. cit., 161-73.
19. Cmd. 537, 'Agreement for Cooperation in the Uses of Atomic Energy for Mutual Defence Purposes', signed 3 July 1958.
20. See J. Bayliss, *Anglo-American Defence Relations 1939-84* (London 1984), chapter 4.
21. See extract from interview with General Maxwell Taylor in J. G. Blight et al., 'The Cuban Missile Crisis Revisited', *Foreign Affairs* (1986), 170-88; F. Costigliola, 'The Failed Design, de Gaulle, and the Struggle for Europe', *Diplomatic History*, 8 (1984), 241-2, and generally for US view of Britain and the EEC: M. Trachtenberg, 'The White House Tapes and Minutes of the Cuban Missile Crisis', *International Security* 10(i), (1985), 179; G. W. Ball, *The Past Has Another Pattern* (New York 1932).
22. See *ibid.*; Bayliss, op. cit., chapter 4; T. Sorensen, *Kennedy* (New York 1965), 565-73; A. Home, 'The Macmillan Years and Afterwards', in W. Louis and H. Bull, *The Special Relationship* (Oxford 1986), 94-9; H. Macmillan, *At The End of the Day* (London 1973), 360-3; D. Nunnerly, *Kennedy and Britain* (London 1972), 184-9; Costigliola, op. cit., 246-9. The general account of the Nassau Conference which follows is based largely on these secondary sources.
23. Sorensen, op. cit., 566.
24. Text of agreement is in Bayliss, op. cit., 126-36.
25. Ball, op. cit., 266-8.
26. J. F. Kennedy Library, JFK NSF, box 235-8, folder: Presidential Trips, Nassau, Macmillan Talks 12/62, Briefing Book.
27. See Ball, op. cit., 266-8; and Nunnerly, op. cit., 158.
28. See R. H. Crossman, *The Diaries of a Cabinet Minister, Vol. 1, 1964-66* (London 1975); H. Wilson, *The Labour Government 1964-70* (Middlesex 1964); and Callaghan interview with author.
29. See LBJ Lib., LBJ GEN CO, box 76, folder: CO 303 UK 1/1/65-7/1/65, Valenti to Johnson, 26 February 1965; JFK Lib., Oral History, D. Nunnerly interview with H. Brandon, 23 February 1970, 14; D. Dimbleby and D. Reynolds, *An Ocean Apart* (London 1988), chapter 13; and D. Reynolds, 'America, Britain, and the International Order Since the Second World War', *International Affairs* (1986), 491.
30. David Leigh, *The Wilson Plot* (London 1988).
31. Kissinger, op. cit., 932-3.
32. See Callaghan interview with author; J. Callaghan, *Time and Chance* (London

1987), chapter 14; and D. Coates, *Labour in Power: A Study of the Labour Government 1974-79* (London 1980).

33. Callaghan interview with author.
34. R. Owendale, *The Origins of the Arab-Israeli Wars* (London 1984), 161.
35. LBJ Lib., LBJ GEN CO, box 76, folder: CO 305 UK 11/1/64-12/31/64. 1 L. Gilpatric notes for McNamara passed to McGeorge Bundy, 26 October 1964.

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## APPENDIX 2E

PSY19: Coslett, H.B. and N. Monsul. 1994. 'Reading with the right hemisphere: evidence from Transcranial Magnetic Stimulation'. *Brain and Language* 46: 198 - 211.

### Discussion Section

1.(1) As predicted by the hypothesis that JG's reading is mediated by the right hemisphere, TMS over the right parietal lobe disrupted oral reading whereas stimulation of homologous regions of the left hemisphere did not. (2) These data support the claim, initially derived from a series of neuro-psychological investigations, that JG's reading is supported by the right hemisphere. (3) More generally, these data demonstrate that the right hemisphere may be involved in the reading of at least some patients with acquired alexia.

2. (1) Prior to a more general discussion, there are several potential objections to these data which should be considered. (2) As the stimuli presented in the two experiments were drawn from the same pool of words but were not identical, one possible criticism is that the words presented in conjunction with stimulation of the right hemisphere were more difficult for JG; thus, although the stimuli employed in the two experiments contained an equal proportion of words of high and low imageability and frequency, one list might have contained a disproportionate number of words which JG was simply unable to read.

3. (1) To assess this possibility we compared his performance on the 28 words presented in conjunction with TMS in Experiment 1 to his performance on the baseline administrations of the entire 80-item corpus; a similar calculation was performed for the stimuli presented in conjunction with TMS in Experiment 2. (2) In baseline administrations, JG correctly read 82% of the 28 words presented in conjunction with TMD in Experiment 1 and 76% of the 24 words presented with TMS in Experiment 2. (3) Thus, as JG performed equally well in the baseline condition with the critical experimental stimuli used in Experiments 1 and 2, differences in stimulus difficulty do not account for the difference in performance with right and left hemisphere TMS.

4. (1) Another possible objection to the interpretation offered above is that the reading impairment associated with right hemisphere stimulation is attributable to disruption of early visual processing leading to a failure to adequately register visual feature information. (2) Several lines of evidence argue against this possibility. (3) First, it should be noted that omissions or failures to respond to stimuli were never encountered; as this type of error is observed with TMS-induced visual deficits (Amassian et al., 1989), the absence of these errors in this experiment suggests that the reading deficit observed with the right hemisphere stimulation is not attributable to a disruption of visual feature registration or integration. (4) Second, the similarity between the errors profiles observed in Experiments 1, 2A and 2B suggests that the reading disruption was not attributable to a visual deficit; in light of the lateral placement of this stimulating coil, one might expect that the lateral or temporal portions of the visual field would be most likely to be adversely affected by the TMS. (5) If this were so, one might expect stimulation of the right hemisphere to be associated with impaired registration and identification of the initial letters of the stimulus; as previously noted, however, under all conditions, including right hemisphere stimulation, visual errors tended to involve the end of the word. (6) Last, although introspective reports may be misleading, it is noteworthy that JG as well as controls explicitly denied that TMS induced visual loss.

5.(1) Another issue concerns the nature and processing impairment which underlies JG's reading deficit. (2) Although the data do not permit one to fully characterize the processing

deficit, they do not provide certain constraints. (3) As argued above, several lines of evidence suggests that the impairment was not attributable to early visual processing deficits. (4) Additionally, the fact that JG produced responses, even if incorrect, suggests that the deficit did not affect speech output procedures (Pascual-Leone, 1991). (5) Rather, the predominance of the visual errors argues for a disruption in a lexical-semantic system.

6.(1) One possible objection to the contention that TMS causes a disruption in JG's putative right hemisphere lexical-semantic system is that JG does not produce errors in which the stimulus and response are related in meaning but not sound or visual form (e.g., the response "king" to *queen*); a number of investigators have, in fact, argued that "semantic" errors are characteristic of right hemisphere reading (Coltheart, 1980; Saffran et al., 1980). (2) One possible explanation for the absence of semantic responses which were semantically related but visually dissimilar to the stimulus were rejected because of an inconsistency between semantically based response and partial letter information (see Marshall & Newcombe, 1973). (3) This speculation is supported by JG's response to the stimulus "dogma" which was presented in conjunction with stimulation of the right hemisphere; although JG's initial response was "fact", he added, after a pause, "no, I saw a 'd'; was it dog?"

7. (1) Although no effect of left hemisphere stimulation was observed in JG's performance, one cannot exclude the possibility that the left hemisphere may have contributed to his reading. (2) Disruption of language function with left hemisphere TMS was not observed in our controls and, to our knowledge, has only been achieved with rapid, repeated TMS which has been demonstrated to induce speech arrest (Pascual-Leone et al., 1991). (3) As the left hemisphere clearly plays an important role in normal reading, what counts for the failure to disrupt reading with single left hemisphere stimulation? (4) One possibility is that the failure is attributable to experimental variables such as insufficiency magnet strength, improper selection of the time interval between word onset and TMS, or an inappropriate site of stimulation. (5) As these variables were held constant, these factors are unlikely to explain why JG's reading was disrupted by stimulation of the right but not the left hemisphere.

8. (1) An alternative account of the observation that left hemisphere stimulation fails to disrupt reading in normal subjects is that the left hemisphere may support multiple reading procedures (Patterson & Shewell, 1987; Coslett, 1991), perhaps with different anatomical substrates (Coslett, Gonzalez-Rothi, & Heilman, 1984). (2) If, in fact, the left hemisphere is able to derive the pronunciation of words by means of different procedures supported (at least in part) by distinct anatomic regions, a localized, transient cortical disruption may disturb one (or more) but not all of the putative reading mechanisms and therefore not abolish reading. (3) The right hemisphere, in contrast, is thought not to support a nonlexical reading mechanism but to support only a single, semantically mediated reading procedure (Zaidel & Peters, 1981; Coltheart, 1983). (4) Additionally, it would seem reasonable to assume that the putative right hemisphere reading system is less well elaborated than that of the left hemisphere system which presumably mediates normal reading in most individuals. (5) Thus, for both these reasons, right hemisphere reading might be expected to be less resistant to disruption with TMS.

9. Heretofore, TMS has been found to have its greatest utility in evaluation of the motor and sensory function. "higher" cognitive functions, to accomplish the same objective, have often been regarded as resistant to this manipulation. These data demonstrate that the TMS may indeed contribute to the understanding of the anatomic localization and psychological fractionation of complex behaviors.