THE SOCIAL CONSTRUCTION OF MEDICAL DISCOURSE

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Submitted in fulfilment of the Degree
of Doctor of Philosophy

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May 1994

TABLE of CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF TABLES

LIST OF FIGURES

PREFACE

The germs of this thesis were laid in an undergraduate seminar in the Department of English Language and Literature at the University of Durham in 1971. The late Ray Selden took time out from his forays into neoclassical poetry to give a brief synopsis to 120 uncomprehending English Literature undergraduates of the main argument of a paper which Louis Althusser had just published that month in the New Left Review.

To this day, I can't remember which paper it was, but I can remember disinterring a copy of For Marx from the stacks at the University Library. Even at the age of 18, it struck me that Althusser essay was over-theoretical and abstruse, but it did gave me some hope that radical thought wasn't the exclusive domain of economics and sociology.

After 15 years of making gearboxes, bouncing on inflatable airbeds, working with the mentally and physically handicapped, and playing rock music in numerous bands in the Southwest of England, I returned from a two year sojourn in Albert Rene's National Youth Villages in the Republic of the Seychelles to find myself exposed to the writings of Michel Foucault in Fred Inglis's graduate classes at the University of Bristol School of Education.

Foucault showed me much more powerfully than Louis Althusser how radical techniques of textual criticism could combine with political theory in order to recuperate critical thinking from the domain of the economists and sociologists. At a more 'micro' level of analysis, I also led a graduate seminar on the functional linguistics of M.A.K. Halliday. In my first weeks at the School of Education in 1984, Basil Bernstein also came down from University College, London, to give a reading of a recent paper entitled The Social Construction of Discourse. In 1986 I completed my M.Ed. course by writing a dissertation entitled Structuralism and the Practice of the Human Sciences - with special reference to Michel Foucault.

The M.Ed. led to a job teaching English Language and Communications to preclinical medical students in the English Language Unit attached to the Faculty of Medicine at the University of Kuwait. After two years teaching undergraduate classes, I moved to the Medical Faculty at Jabriyah to take over its Research Communication Unit. Here, I taught English for Academic Purposes (EAP) to first and second year postgraduate students from Departments of Pharmacology, Physiology, Microbiology, Anatomy, Biochemistry and Pathology in thesis writing, reading and study skills, and oral presentation of research; as well as to practising doctors and clinicians from local hospitals in case history writing, professional oral skills and writing research papers for publication. Many of the doctors were preparing for postgraduate study overseas. The presentation of medical texts to these doctors was heavily influenced by John Swales's 1981 monograph, An Introduction to Research Article Introductions. In 1989, I pulled out The Birth of the Clinic and realized that the relationships between the medical school and the

teaching hospital; doctors, students, and patients; and the different types of medical texts made a lot more sense of Foucault's theory of discursive practices than had hitherto been the case. I re-established contact with Fred Inglis, now relocated at the University of Warwick, and drew up a Ph.D. proposal in 1988-9.

In August 1990, half a million Iraqi irregulars invaded Kuwait. While my colleagues were incarcerated in Baghdad, I found myself stranded in a delightful cottage in Cornwall and indulged myself in a lengthy review of Foucault's work in preparation for an analysis of medical texts. The chapter on Bernstein was also written during this period.

The empirical work was delayed while I resumed gainful employment in the School of Accountancy and Business, Nanyang Technological University, Republic of Singapore. But by the Winter of 1992, I had discovered Swales's recasting and expansion of his 1981 ruminations on scientific discourse in his (1990) book entitled Genre Analysis. In the Spring of 1993, texts were selected from the discursive areas of the epidemiological research report, the medical case history, the medical textbook and the medical interview. These were analysed using M.A.K. Halliday's Introduction to a Functional Grammar as a basic reference text.

Successive drafts of the final chapter and the overall formatting and printing of the thesis were completed in the Spring of 1994. It was finally submitted for examination by Professor Mike Featherstone and Dr. Keith Hoskin at the beginning of May, 1994.

ACKNOWLEDGEMENTS

Fred Inglis gave unflagging encouragement for this project, and bore with the utmost sanguinity the inconveniences of time and place imposed upon him in the course of its supervision.

Resources were made available by the staff of the following libraries: the Medical Library, University of Kuwait; the Medical and Central Libraries, University of Bristol; the Medical and Central Libraries at the University of Glasgow as well as, especially, the Library of the Medical Sociology Unit; Cornwall College Library; the Medical and Central Libraries, National University of Singapore and the Main Library at Nanyang Technological University, Singapore.

The Registrar's Office at the University of Warwick deferred payment of course fees during the Gulf War.

Pat West allowed me access to the database from his E.S.C.R. funded study into childhood epilepsy carried out at the Medical Sociology Unit, University of Bristol in 1974; as well as giving me insights into aspects of the thesis which impinged upon the field of medical sociology.

Vicarious experience of the rigours of medical report writing was provided in seminars with M.Sc. students at the Faculty of Medicine at the University of Kuwait and the doctors from the Kuwait hospitals who attended the K.I.M.S. Medical Report Writing Courses from 1988 to 1990.

Finally, I would like to express heartfelt thanks to Maggie Conn for giving me a place to work during the Gulf War and for tolerating my all too frequent seclusion in the various dwellings we have shared since.

SUMMARY

The social construction of the discourse of medical institutions is analysed, drawing on both speech act and structural theories. Discourse is defined as a symbol system which has an ideological effect. This effect is linked to the maintenance of the interests of hegemonic social groups.

Michel Foucault's archaeological method accords primacy to the relations which exist between institutional and social processes in the formation of discursive relations. Foucault's genealogical method also describes how the identity of the modern subject is constituted within the power nexus of coercive institutions.

Medical discourse is paradigmatic of Basil Bernstein's model of pedagogic discourse. Pedagogic discourse is constructed according to the intrinsic grammar of the pedagogic device. This comprises distributive, recontextualizing and evaluative rules. These operate in three institutional contexts: the field of production, the field of reproduction and the recontextualizing field.

M.A.K. Halliday's systemic linguistics defines three metafunctions of the text which operate in relation to its context of situation: the textual, ideational, and interpersonal.

The textual characteristics of three principal modalities, or genres, of medical text are described in relation to their institutional contexts: the medical research report within the field of production, the medical interview within the field of reproduction and the medical textbook within the recontextualizing field.

As a medical text shifts from the field of production to the recontextualizing field, certain transformations take place in the ideational options of tense, transitivity and process and the interpersonal options of modality. These syntactic transformations, organized by codes of the pedagogic device, symbolically authorize the recontextualized medical text.

CHAPTER 1

LANGUAGE AND IDEOLOGY

It is now a commonplace to say that language can be used as a means of control as well as of communication:

> the relations of communication par excellence - linguistic exchanges - are also relations of symbolic power in which the power relations between speakers or their respective groups are actualized.[1]

However, nowhere are Bourdieu's "relations of symbolic power" actualized more forcefully than in that area where language is traditionally supposed to be most 'neutral' and most value-free, the language of science. This is because the potential for language to be used for the structuring of asymmetries of power between agents, and between agents and resources, is not confined to the figurative language which is found in the polemics of literary or political discourse, but is also written into the deeper rhetorical and grammatical structures of linguistic communication.

The epistemology of the modern medical sciences is based upon a hybrid foundation of the methodology of both the empirical and the social sciences. On the one hand, many of the subdisciplines of the medical field, such as biochemistry, microbiology and nuclear medicine, employ the same ostensibly rigorous quantitative methods as the physical sciences; while

on the other hand medical sociology, in particular, draws on the more qualitative research procedures of the social sciences. Nevertheless, the medical sciences stake their main claim to truth in the laws of the empirical sciences - that is to say they see language, epistemologically deployed, as a mirror of nature - and they are slow to question the underlying assumption of the immediate transparency of empirical knowledge as it is realized symbolically in language.

However, the medical field is also populated by one of the most powerful professional groups in contemporary society - the doctor. The truism still maintains that the doctor has supplanted the role of the priest as, clad in gown and surgical mask rather than cassock and robes, he (as is largely the case) bestrides the incubator and the life-support system. As chief negotiator of the extremities of the human condition, the doctor has become rivalled only by the lawyer in the appropriation of economic and cultural capital[2] in contemporary advanced societies. However, the acquisition of economic and cultural capital, and hence professional and social power,[3] is also ensured by the monopoly which the medical profession maintains over its access to a particular body of technical and rational knowledge. In this way, medical knowledge has to be conceived of as more than the straightforward correspondence between a *way of seeing* and the *way things are*, which is the cornerstone of the empirical sciences. The medical sciences also constitute a particular *social order* which is tied up with the sectional interests of a professional class.[4]

The idea that the medical sciences are 'socially constructed' is far from new. Although it dawned on the present author during a rereading of Foucault's Birth of the Clinic while teaching a graduate course in medical writing,[5] it later transpired that there was already a considerable literature on the subject, going back to Charles Bazerman's seminal 1980 article.[6] The contribution which this thesis makes to the social constructionist argument is to attempt a more coherent account, first of the institutional basis of the social ordering of the medical sciences; and second, of the linguistic characteristics of different types of medical text. It then becomes possible to describe the relationship between different types of medical text and their specific institutional contexts. In this respect, the *social* ordering of the medical sciences is regarded as having a *symbolic* realization in medical texts produced by agents working at different *institutional* sites.

1.1 Rationale and Overview

The focus upon the relations between institutions, agent and discourse is substantially derived from the writings of Michel Foucault.[7] In order to provide a theoretical background to the more analytic second half of the thesis, Chapters 2 and 3 will provide a detailed account of Foucault's account of the construction of discourse as social practice and as a vehicle for the of relations of power in society. In Chapter 4 the im-

plications of Foucault's wide-ranging arguments are defined with finer strokes in an examination of Basil Bernstein's 1990 description of the social construction of discourse within the field of education. This thesis posits that if Bernstein's structural description can be used to describe the contours of the institutional contexts of medical discourse, as well as those of educational discourse, in that case it can be used to describe the institutional contexts of *any* of the modes of technico-rational discourse which are produced so prolifically in the "knowledge-based" societies[8] of late capitalism.

Chapter 5 is an exegesis of the linguistic theory which will be applied to selected medical texts: that of systemic grammar, specifically as described by Michael Halliday.[9] One of the fundamental tenets of this thesis is that critical theory has in the past indulged itself in relatively generalized descriptions - of the relations between the institutionalized production of knowledge and social relations of power, in Michel Foucault's case - without engaging itself in a very direct analysis of the texts which constitute the symbolic realization of these relations. On the other hand, linguistic analysis has tended to confine itself to the value-free description of the rhetorical and grammatical characteristics of the text without giving due attention to their implications in terms of social relations or the description of power within society. The basis of Halliday's sociolinguistic theory is the notion that language is not an ideal system, but functions within a social context. Therefore, linguistic

relations are also social relations and vice-versa. This thesis therefore attempts to relate Foucault's grand edifice of power/knowledge to Halliday's more delicate machina for the description of particular texts. The theoretic link between these two levels of analysis is the conceptualization of the 'pedagogic device'[10] by Basil Bernstein, who has already established some common ground with the functional grammarians.[11]

Latterly, the operation of the three 'metafunctions' of systemic grammar - textual, ideational and interpersonal - are then examined in relation to the three contexts, or 'fields', of pedagogic discourse as outlined by Bernstein.[12] In Chapters 6-8, the **textual** characteristics of the three principal modalities, or genres, of medical text are described in relation to their institutional contexts: the medical research report within the field of production, the medical interview within the field of reproduction and the medical textbook within the recontextualizing field. In Chapters 9-10, the **ideational** characteristics of the same three modalities of medical text are examined in terms of the transformations which take place in the options of tense, transitivity and process as a medical text shifts from the field of production to the recontextualizing field. Then, in Chapter 11, the **interpersonal** characteristics of the medical research report, the medical interview and the medical textbook are examined in terms of the transformations which take place in the options of modality which are realized as a medical text shifts from

the field of production to the recontextualizing field.

Within this context, this thesis will analyze and contest the following central arguments:

1. Since the methodology of the medical sciences is largely derived from the empirical sciences, the medical sciences shall also be taken as being paradigmatic of the empirical sciences (in a way, for example, that the social sciences still are not). This is the basis for the claims of the medical sciences to being a special category of knowledge. However, it is maintained - after Foucault - that medical knowledge is nevertheless based on historical and socially specific configurations of the agent (he/she who produces the medical text), the site (the institutional location of the production of the medical text) and the medical text itself (being a particular symbolic representation of medical knowledge). In this respect, the production, transmission and reproduction of medical knowledge is constituted as a social *practice*.

2. The principles of the social organization of medical knowledge, as of educational knowledge, are those of Bernstein's 'pedagogic device', as outlined in Chapter 4. This thesis also makes the claim that, if the ordering of the social construction of pedagogic discourse can be applied as well to the field of medicine as it can to the field of education, then this can be taken as the paradig-

matic form of the production, transmission and reproduction of *all* modes of knowledge in the current phase of late capitalism.

3. Bernstein describes three institutional sites in which the social construction of pedagogic discourse takes place: the field of production, the field of reproduction and the recontextualizing field. This thesis will argue that as a pedagogic text shifts from the field of production to the fields of reproduction and recontextualization, certain conventional stylistic and linguistic transformations take place as the text is delocated from its context of production and reconstructed as a 'pedagogic text'. In this way the temporal and spatial co-ordinates of its context of production, as realized symbolically in the grammar and syntax of the text, are disguised - or enabled to be 'misrecognized'.

4. The process whereby a medical text is delocated from its context of production and relocated within a pedagogic context is therefore an *ideological* process. As such, it is the process whereby the "structures of signification"[13] of medical discourse are "mobilized to legitimate the sectional interests" of the hegemonic group which operate within the context of its production.

Before we progress to a detailed examination of the theory of discursive *practice* as set out by Michel Foucault, we will move forward to develop links between two categories fundamental to our subsequent analysis of discourse as social practice - those of *ideology* and *language*:

- <u>ideology</u>: we shall locate a working definition of ideology as a social *practice* within prevailing theories of ideology, and in particular we shall distinguish it from the "epistemological versions" of ideology. This will also serve to locate Foucault's theory of discursive practice within more recent developments in the conceptualization of the term.[14]

- <u>language</u>: interestingly, in the past half century, the same broad dichotomy has confronted theorists of language as has confronted theorists of ideology: that between a theory of representation and a theory of praxis. At the close of this first chapter we shall review the main arguments of the speech act theorists, John Searle and J.L. Austin, in order also to establish a working theory of language as social practice. Speaking of the convergence between linguistic philosophy, phenomenology and hermeneutics in this respect, Anthony Giddens writes:

> All these have come to the view that it is erroneous to treat language as being most aptly characterized as a medium of descrip-

> tions. Description is only one among many other things that are carried out in and through language. Language is a medium of social practice, and as such is implicated in all the variegated activities in which social actors engage.[15]

Using these foundations, this thesis will go on to describe the way in which medical texts are produced, reproduced and transmitted as linguistic practices which have ideological effects. Together, these two elements of analytical procedure constitute an operational *theory of discourse*.

In order to lay the groundwork for this analysis, we shall start by considering briefly the way in which different theories of ideology conceptualize the creation, distribution and maintenance of asymmetries of power in society, after which we will look at the relationship between ideology and the concept of discourse. Then we shall lay the groundwork for the analysis of the discourse of the medical sciences in terms of a linguistic system which realizes relations of symbolic power, by establishing a theory of language as a form of social practice governed by a potentially definable set of rules.

1.2 Ideology: Epistemology or Social Practice?

The scope of ideology can be narrowed down to two broadly contrasting areas. One historically prior view associated with 'classical' marxism, regards it as an epistemological issue. The other more contemporaneous view associated with 'post-structuralist' thinkers (amongst whom Michel Foucault is usually classified despite his denials) regards it as a form of social practice.

The epistemological version of ideology usually associated with classical marxist thought is used to refer to a set of beliefs which are essentially false or deceptive. In its broadest frame of reference, this can refer to a set of beliefs which arises from the material structure of society as a whole. However, the focus of this set of beliefs narrows in scope so that it comes also to refer to the ideas and beliefs held by a particular social group or class. In this case, these ideological ideas and beliefs, are taken to be those which are in the interests of a particular group. Although these interests are not necessarily coterminous with the subjective 'wants' of the subject,[16] they achieve a discrete objective manifestation in as much as actors have collective interests because of their membership of a particular group or class. In this way, the *interests* (as distinct from the wants) of a particular social group or class imply "potential courses of action, in contingent social and material circumstances".

As the scope of the social base of ideology narrows, so

it comes to entail not just thinking and believing, but also actively promoting and legitimating the interests of the dominant social group. Taken this way, ideology refers not just to sets of beliefs, but also to the mechanisms of power that sustain and promote that set of beliefs and in so doing maintain that group's position of social domination. Thus, to study ideology is to also study the ways in which a particular set of relations of *domination* is created, maintained and reproduced.

However, although this more particularized version of ideology focuses upon the ideas and beliefs of certain groups or classes, it does not entirely supersede the wider ranging version. For, "there is one sectional interest....of dominant groups which is peculiarly universal":

> an interest in maintaining the existing order of domination, or major features of it, since an order of domination ipso facto involves an asymmetrical distribution of resources that can be drawn upon to satisfy wants.[17]

Thus, the material structure of society as a whole maintains the interests of dominant groups just as the interests of dominant groups feed back into the existing material structure of society. In this way the ideology of society is inextricably linked to the ideology of dominant groups and vice versa.

The epistemological version of ideology has variously op-

posed the concept of ideology to that of science. In as much as a critique of ideology could be historically realized in the transformation of the conditions of society, social science was originally proposed[18] as a way of "penetrating beyond the consciousness of human actors, and of uncovering the 'real' foundations of their activity".[19] A distinction has also been posited between 'formal knowledge' and those forms of knowledge which are contingent on historical circumstance,[20] amongst which are included the social sciences, with important implications for the relative truth claims of the two different types of discipline. Furthermore, science has been credited with having its own "autonomous" level of discourse, which could then feed back on ideology.[21] However, ultimately no incontrovertible basis has emerged for separating scientific, or 'reliable', knowledge in an unchallengeable way from the supposedly less grounded assumptions of ideology. No unshakeable functional[22] or epistemological[23] criteria have finally been mustered in order to support this distinction. And even Marx's initial postulation of social science as the form of critical scientific thought par excellence has been unable to get beyond the vicious circularity of the epistemological conceptualization of ideology. In the end, it is impossible to escape the charge that, from an epistemological standpoint, marxism itself is just another form of ideology and that the marxist critique of ideology is itself only based upon a form of thought that is ideological.

The second more current, 'poststructuralist', version of

ideology employs the term to refer not just to a set of beliefs or ideas but to the creation, maintenance and reproduction of a set of social practices. Here, ideology shifts from referring to a state of consciousness implicit in material practices to the actual constitution of social practices. As with the epistemological definition, this version also moves through a gradual narrowing in scope. First, it can refer to "the general material process of the production of ideas, beliefs and values in social life."[24] In this sense, the idea of ideology is not value laden in any way, but describes "the whole complex of signifying social practices and symbolic processes in a particular society."[25] However, this purportedly materialist definition of ideology also narrows in focus to entail the "ideas and beliefs which symbolize the conditions and life-experiences of a specific, socially significant group or class."[26]

What is most important about this version of ideology is its conceptualization as essentially a type of "symbol-system". In this way, language is a constituent part of the ideological system that symbolizes the life experiences of a particular social group, and as such adopts symbolic forms in keeping with its ideological function. Giddens[27] goes so far as to reject the notion of ideology as a discrete entity, preferring rather to say: "there is...no such thing as *an* ideology: there are only ideological aspects of symbol systems".[28] Furthermore, once we have got beyond the dichotomy between science and ideology, we can see that the concept of

ideology is not limited in scope to particular types of idea-system. In fact we can say, again with Giddens, that "any type of idea-system may be ideological".[29]

Some authors[30] have viewed these two versions of ideology as irreconcilable, restricting the concept of ideology to the epistemological version, and viewing critiques of 'social practices' as superceding the concept of ideology altogether. However, what provides the continuity in the conceptualization of the two versions of ideology is the central place that the concepts of domination and interests play in both versions.[31] Within the conceptualization of ideology-as-praxis, what renders a symbol-system ideological are the purposes of domination to which it is put by the interest group(s) involved in its production and control. And in order to mesh the idea of ideology as a means of domination with ideology as an aspect of symbolic orders, it is necessary to investigate "how structures of signification are mobilized to legitimate the sectional interests of hegemonic groups."[32]

Therefore, both versions of ideology attempt to explain how the asymmetrical distribution of power and (economic) capital in society is effected and maintained. In this respect the post-structuralist account of social practice is no less a theory of ideology than is the marxist theory of false consciousness. In this way, this section serves to locate Michel Foucault's account of discourse and social practices which are taken up within the next chapter within the historical range of theories of ideology in order to compare it with the more

traditional marxist approach, while rendering it no less ideological. The next section goes on to consider the relationship between the conceptualization of 'ideology' and that of 'discourse'.

1.3 Discourse and Ideology

It is into the post-structuralist formulation of ideology as a social practice that the concept of 'discourse' enters. This term also has two broadly distinct domains of meaning. First of all, 'discourse' can be used to describe one type of formal realization of an ideological symbol-system. 'Discourse' is taken here to be the symbolic realization of a set of ideas or beliefs, specifically through the medium of language. Thus, the concept of 'discourse' becomes almost conflated with the term 'ideology', where 'discourse' is the symbolic 'carrier' of 'ideology'.

There have been various interpretations of the ways in which discourse operates to convey an ideological effect. Geertz[33] views "metaphor, analogy, irony, ambiguity, pun, paradox, hyperbole, rhythm, and all the elements of what we lamely call 'style'" as functioning to cast "personal attitudes into public form". Certainly these discursive devices can be used for ideological effect, particularly within overtly polemical discourse, which was the main focus of Geertz's paper. However, self-conscious tropes of literary style are less likely to be features of other forms of writing

which may also have an ideological effect, such as our main concern, scientific discourse. Here an ideological effect is created not so much by the overt usage of emotional or literary devices, but rather by the intrinsic features of language itself.

It is a contention of this thesis that not only do ideological effects arise from the figurative use of language, but that they also arise from the more abstract areas both of the rhetorical form (or 'genre') that lends textual identity to particular types of discourse, and of the grammatical features that constitute the structural relations of a text. In both these cases, the ideological effect of these discursive features goes beyond the mere metaphorical realization of the signifying system. The rhetorical structuring of a particular text realizes the relations between texts in as much as the identity of one text is set off against the identities of other texts which feature competitively within the cosmology of texts within a particular epistemological field. Furthermore, grammatical relations such as transitivity, tense and modality realize social relations between human agents, as well as the relations of production between human agents and resources, as human agents and material resources become differentially positioned in terms of agency, time and interpersonal relations. Later on in the thesis, we will explore how the rhetorical and grammatical realization of ideological effects within the texts which are reproduced and transmitted within the epistemological field of the medical sciences ac-

tualize symbolic relations of power, as different interest groups involved with the production and transmission of specialized texts vie with each other for social and cultural domination within a particular epistemological field.

However, the study of the rhetorical forms and the grammatical features of different types of text has more often been carried out within a second conceptualization of the term 'discourse'. In this usage, the term is not linked with ideological effects. Here 'discourse' is used in a relatively restricted sense in the field of linguistics to describe the coherence of a text in terms of its purely linguistic features. While the referentiality of the text is considered, there is no attempt to relate it either to a set of beliefs anterior to the text, or to the interests of the speaker. In this respect we are faced with one value laden and one neutral use of the word 'discourse'. This is due to a difference in the focus of the term 'discourse'. The focus of the term in critical theory is on the external relations of the text; while the focus of the term in linguistics is on the internal relations of the text. This gives rise to two very different forms of analytical activity, described interchangeably by the phrases 'discourse theory' and 'discourse analysis'. However, it is useful to differentiate the two by using 'discourse theory' to describe the outward-looking sociological perspective of the text as social practice, and 'discourse analysis' to refer to the purely linguistic perspective of the text in terms of its internal coherence.

Figure 1.1

Conceptualization of Discourse and Ideology

Ideology	*Symbol*	Discourse
Effect	*System*	*Realization*

IDEALITY <----------x----------> MATERIALITY

Ideas/	Social	Textual
Beliefs	Practice	Coherence

The concepts of 'ideology' and 'discourse' can therefore be placed on a philosophical spectrum from an extreme of ideality to an extreme of materiality (Fig 1.1). At one extreme of the conceptual spectrum, the totally abstract concept of 'ideology' as a set of ideas and beliefs is all content and no form; while at the other end of the spectrum, the concept of discourse as the realization of the text is all form and no content. At the fulcrum of this spectrum it can be seen that there is potential for the terms 'discourse' and 'ideology' to inform each other. However, a distinction between the concepts of 'ideology' and 'discourse' should still be maintained. First of all, it is necessary to identify forms of discourse which are not in fact ideological, for "...exactly the same piece of language may be ideological in one context and not in another; ideology is a function of the relations of an utterance to its social context."[34] Secondly, it is important

not just to view ideological discourse as just being any form of 'interested' discourse; but also to discriminate between those forms of discourse which have social effects and are central to social life and those forms of discourse which have social effects and are not central to social life.

Therefore, in this thesis, 'ideology' will be taken as referring to *any* symbol-system that realizes the interests of dominant groups; while 'discourse' will refer to the specifically *linguistic* construction of a text or ensemble of texts as (rule-governed) social practice. Thus, discourse may or may not be ideological; and an ideological effect may be achieved either by language or by some other form of symbol-system.

Two additional points need to be noted here. First, it is also possible to have non-ideological forms of non-discursive symbol-systems, although it is almost invariably contentious as to whether a particular signifying system does or does not maintain and reproduce a set of dominant social relations. Possible contenders that are ubiquitously cited are the game of chess, as well as (more problematically) certain academic disciplines such as pure mathematics. And secondly, a number of theorists, including Michel Foucault, whose work we shall examine in some detail in Chapters 2 and 3, use the term 'discourse' to include a much wider range of non-linguistic social practices which operate to maintain the "existing order of domination". While we shall consider this usage of 'discourse' in Foucault's work, as our main concern is essentially language, the term 'discourse' will be pulled back to

its essentially linguistic frame of reference for present purposes.

This thesis enters into the debate concerning ideology and discourse by examining the way in which the linguistic symbol-system of the contemporary medical sciences operates in an ideological fashion to maintain and reproduce the dominant relations of the interest groups who produce these forms of knowledge, thereby feeding back into a more universal "existing order of domination". This will focus specifically on a study of the rhetorical structure and grammatical relations of different forms of medical text in their institutional settings in order to determine the ideological effects of certain groups of statements and to describe with greater precision the way in which certain forms of statement arrive at and maintain their ideological function. Issues normally addressed within the domain of 'discourse theory' will therefore be analysed using techniques of 'discourse analysis'.

1.4 Language: Representation or Praxis?

The debate between critical theorists over the two version of ideology - epistemology and social practice - is paralleled by the still unresolved linguistic debate concerning the very nature of language. We have seen that one broad view of ideology - from the concept of 'false consciousness'[35] to that of 'systematically distorted communication' - discusses it as an epistemological issue in which the 'fit', or

rather lack of 'fit' between a set of ideas and a postulated social reality is the main focus of concern; while the other regards it as principally a social practice which can be expressed as a symbol system, which often takes the form of a language.

This crux in critical theory very much parallels the initial attempts of linguistic philosophers, such as J.L. Austin, to distinguish between two types of linguistic statement: statements of fact (constative utterances) and utterances which are social actions (performative utterances). Ultimately this linguistic dichotomy was superceded by the unitary theory of 'speech acts' which, as developed by John Searle, came to describe speaking and writing as meaningful practices carried out within a social context rather than as the rehearsal of empty formal categories. In this respect Austin and Searle's investigations into the philosophy of language constituted the supersession of a major linguistic crux that parallels the dichotomy in critical theory between ideology-as-epis and ideology-as-praxis. Searle's conceptualization of the "principle of expressibility" also necessarily foreshadows M.A.K. Halliday's concept of "meaning potential" taken up in Chapter 5.

Performative utterances were postulated as being types of statement such as a bet, a promise, or a bequest. Austin's point was that these utterances are not statements about betting, promising or bequeathing; they actually enact a bet, a promise, and a bequest, e.g.:

I bet you a Singapore Sling I'll submit my thesis by May.

I promise to sign if you let me back into the country.

I bequeath you my tenor saxophone when I die.

Thus, a performative utterance, being an action, does not lay claim to being true or false. However, it does have a more or less successful, or 'felicitous', outcome which is dependent on three main factors: its adherence to generally accepted conventions, its successful execution, and the intentions of its speaker (i.e. whether the speaker means what he or she says, and goes on to do it).

Thus, the difference between a happy and an unhappy outcome of a performative utterance is not entirely unconnected with the issue of truth or falsehood in statements, for "...certain conditions have to be satisfied if the utterance is to be happy."[36] This, then admits a connection between the 'felicity' of performative utterances and the truth of certain statements. In other words, "...for a certain performative utterance to be happy, certain statements have to be true."[37] In this way, it has to be conceded that for a certain statement to be true, certain other statements must also be true. Therefore, it emerges that similar conditions underlie the dependence of performative utterances upon certain truth claims, and the interdependence of the truth claims of different statements. Both are dependent on the validity of other concomitant conditions extrinsic to the utterances in question.

The concession that some fundamental truth value of

The concession that some fundamental truth value of statements is still relevant to the description of performative utterances somewhat undermines the absolute distinction between performative and constative utterances. This distinction becomes murkier still since no specific linguistic criteria were found to uphold an absolute distinction between a performative and a constative utterance. Five linguistic criteria were examined to see if any of them could successfully support the discrete category of the performative utterance.

1. *A performative utterance can be recognized according to grammatical criteria*. However, consideration of neither person, tense nor mood appeared to support the postulation of a separate category of performative utterance.[38]

2. *A performative utterance might be distinguished on the basis of vocabulary*. However, a performative could be found without the postulated operative words; and the operative words could be found without the performative.[39]

3. *The persona who is doing the uttering is made explicit in the performative utterance, either by reference via the first person (speech), or by the addition of a signature to the utterance (writing)*. However, there are many other usages which the first person Present indicative might have: habitual behaviour, historic present, multiple mean-

ing (e.g. "I call"), non-performative formulae (e.g. "I state that.."), and marking the word as action (e.g. "Check").

4. *A performative utterance can be recognized by the designation of the verb in the utterance*. Performative utterances generally have an identifiable 'performative verb' in the first person singular Present indicative active at the start of the sentence. This provides both a grammatical and a potentially semantic criterion for identifying the performative utterance. Austin's initial hypothesis was that it could first of all be possible to make a list of all "performative looking" verbs. Sentences with these verbs in the appropriate grammatical mode could then be recognized as performative utterances. However, not all performative utterances displayed these 'explicit' characteristics.

5. *A performative utterance could be identified if a 'performative verb' could be inserted to form a sentence with the required grammatical formation*. Three categories of performative utterances were postulated in order to illustrate how the 'performative verb' might be inserted ('explicit' performative) into a performative utterance which was lacking in this respect ('implicit' or 'primary' performative): the behabitive (*I thank, I apologize, criticise*) "is designed to exhibit attitudes and feelings;"[40] the expositive (*I argue, I conclude, I tes-*

tify, I admit) shows how the statement it introduces fits into the surrounding text; and the verdictive (*I pronounce that, I hold that, I date it*) describes a state of mind or a declaration by someone in authority such a as a judge or a doctor. However, it was found[41] that the performative function of these three classes ultimately could not be categorically distinguished from their purely descriptive function.

Thus, Austin concluded that, whether an utterance is in its 'primary' form or is converted to its 'explicit' form through substitution of a 'performative verb', it was not possible to identify a performative utterance through purely linguistic criteria. The last straw came with head verbs such as *state* or *maintain* which appear at first sight to be performatives, but in fact introduce an utterance which is essentially a statement susceptible to true/false criteria. Thus, Austin was forced to abandon his search for the criteria of the performative utterance on the basis of language alone in order to "... reconsider more generally the senses in which to say something may be to do something, or in saying something we do something."[42]

1.5 Locution, Illocution, Perlocution.

In order to define the performative utterance with greater precision, Austin went on to classify three categories of language-as-action according to non-linguistic criteria: the locutionary act, the illocutionary act, and the perlocutionary act. The locutionary act is the straightforward act of saying something or producing a sequence of signifying sounds or marks. The illocutionary act is the closest to the original performative, where an act is performed in saying something - "utterances which have a certain (conventional) force;"[43] in fact betting, promising and bequeathing are all examples of this second category. Finally, the perlocutionary act is the effect one has on the recipient by saying something, such as frightening, annoying, convincing or amusing him. These three categories of speech act are defined largely according to their effects, since all utterances minimally have an effect on the recipient. However, Austin is at pains to emphasize that these three different types of speech act are in no way effects of each other.

The defining feature, therefore, of the concept of illocution, is a relation, not to locution, but "to the conventions of illocutionary force as bearing on the special circumstances of the occasion of the issuing of the utterance."[44] Thus the illocutionary act is neither a consequence of the locutionary act, nor a cause of the perlocutionary act. However, the illocutionary act does produce effects in certain senses and its

success, or 'felicity', is dependent upon these effects being achieved. First, the recipient has to have heard and understood what is said: "the performance of an illocutionary act involves the securing of an 'uptake'."[45] Secondly, the illocutionary act produces "changes in the natural course of events"[46]: if I call my dog "Bonzo", he cannot subsequently be referred to as "Fido". Finally, many illocutionary acts demand a response, e.g. arguing, ordering, promising, suggesting etc., which is a sequel distinct from the initiating utterance.

The perlocutionary act also has a series of outcomes. Although the attendant consequences of perlocutionary acts are not always clear cut, they are distinct from the effects of the illocutionary act. To start with, while by definition a perlocutionary act (such as convincing and persuading) has a purpose, it might not always be realized. It might have an indirect, or unintentional outcome. Furthermore, the outcome of a perlocutionary act might also be effected by non-locutionary means, by actions as distinct from or in addition to words. And finally, it is possible that perlocutionary acts can be effected by nonconventional means (like threatening someone with a stick etc.). However hard it might be to maintain these consequences of the perlocutionary act, they do provide us with a set of three criteria to distinguish the consequences of the perlocutionary act from those of the illocutionary act.

It is now necessary to reassess the original contrast between performative and constative utterances in the light of

what has been outlined regarding locutionary, illocutionary, and perlocutionary acts. A consideration of the conditions of making a statement in terms of the total speech situation would first of all indicate that a constative utterance is just as much an illocutionary act as a performative. To say "I state that x is y-ing" is hardly qualitatively different from "I argue/ suggest/bet etc. that x is y-ing." Furthermore, the statement "x is y-ing" may be rendered explicit by prefixing the sentence with "I state...", without altering its truth claims in any way. Thus, the making explicit of "the utterance being the doing of something"[47] in no way prevents the utterance being true or false; nor does "I state that" appear to differ essentially from any of the classes of performative verbs considered above. Secondly, from the opposite perspective, statements also appear to be "liable to every kind of infelicity to which performatives are liable;"[48] although whether a statement is happy or unhappy still does not affect its claim to be true or false.

Thus, "once we realize that what we have to study is not the sentence but the issuing of an utterance in a speech situation,"[49] it becomes clear that to make a statement is also to perform an action. Furthermore, there is no reason why all the conditions governing the "uptake" of an illocutionary act cannot apply also to the statement. It may be that the "felicitous" statement demands the consideration of an additional dimension when compared with the non-constative utterance or performative, a dimension that in some way

resembles a consideration of its claim to be true or false. Yet, ultimately, an assessment of the statement just in terms of its truth or falsehood will no longer do. For, to distinguish absolutely between the constative and the performative belies the true nature of the speech act, which of necessity involves both its locutionary and its illocutionary aspect. To focus exclusively on the truth claims of the constative utterance is to exaggerate the locutionary aspect at the expense of the illocutionary; just as to focus exclusively on the instrumental nature of the performative act is to exaggerate the illocutionary aspect at the expense of the locutionary.

Thus, finally, Austin was forced to abandon his original distinction between performative and constative acts in order to offer a further reaching analysis of the precise implications of illocutionary acts - whether, first, they are "in order or not in order", and second, whether they are "'right' or 'wrong'";[50] as well as being able to offer an account of these criteria. For, "...stating is only one among very numerous speech acts of the illocutionary class."[51] Furthermore, an analysis of the speech act must involve an assessment of both the locutionary aspect (sense and reference) in terms of its truth or falsehood; and the illocutionary force in terms of the happiness or unhappiness of its outcome.

Herein lies a move towards the construction of a unitary theory of language as action, which would supersede the polarization of the performative utterance as speech act and the constative utterance as statement of fact. Although the

veracity of a speech act would be one consideration of its 'felicity', the criterion of the truth or falsehood of a particular statement would not constitute an exclusive category of statement. In this argument *all* linguistic acts were viewed principally as a form of praxis rather than representation.

1.6 Speaking by the Rules

This description of *language* as social practice was taken a stage further by John Searle, who described it as a form of rule-governed behaviour. While J.L. Austin's speech act theory moved linguistic philosophy beyond the conceptualization of a simplistic correspondence between words and a hypostatized material reality, John Searle extended this theoretical approach to highlight a second feature of language that might elucidate how language operates as a 'symbol system' with ideological effects. One of Searle's main contentions is that to speak a language is to perform speech acts according to certain rules for the use of linguistic elements. "Speaking a language is engaging in a (highly complex) rule-governed form of behaviour. To learn and master a language is to learn and to have mastered these rules."[52]

In keeping with this emphasis upon language as rule-governed behaviour, Searle posits the speech act rather than the symbol, the word or the sentence as the minimum unit of linguistic communication, since the latter are only a partial manifestation of the communicative act. What is missing in

theories with this focus is a consideration of the *intention* behind the signification, an intention specific to the speech act itself, which is intrinsic to the phenomenon of language and essential to understanding. A theory of language is indissociable from a theory of action, precisely because "speaking is rule-governed behaviour."[53] However, a theory of action also has implications for a theory of ideology, since many individual actions (at least in capitalist and state socialist societies) are bound up with the interests of different social groups and classes and their respective positions of dominance of society.

A key premise of Searle's consideration of speech acts is what he calls the "principle of expressibility". This was the hypothesis that language has the potential to express any meaning: "...whatever can be meant can be said."[54] This anticipates M.A.K. Halliday's concept of "meaning potential", which is taken up in Chapter 5. This principle does not necessarily produce the full range of intended emotional and other related non-semantic effects on hearers; neither is it necessary that everything expressed will always be understood by the hearer. However, the principle does maintain despite certain possible limitations, such as the speaker's possible ignorance of language, or his use of implied meanings. For example, the use of the monosyllabic response "Yes"/"No" to question, implies the assertion uttered in the question although it is not explicit in the reply. Where the language is lacking, the principle of expressibility can even lead to the

extension of a language itself.

This principle enables us to link rules for performing speech acts with rules for uttering certain linguistic elements: "...for any possible speech act there is a possible linguistic element the meaning of which ...is sufficient to determine that its literal utterance is a performance of precisely that speech act."[55] Therefore, speech acts are realized in language, and their realization provides a basis for analyzing the intentions of the speaker and identifying the rules which govern the linguistic elements that are employed, so that the study of meaning is inextricably bound up with a study of speech acts.

> For just as it is part of our notion of the meaning of the sentence that a literal utterance of that sentence with that meaning in a certain context would be the performance of a particular speech act, so it is part of our notion of a speech act that there is a possible sentence (or sentences) the utterance of which in virtue of its (or their) meaning constitutes a performance of that speech act.[56]

Searle distinguishes two types of rules governing human behaviour: regulative rules and constitutive rules. Regulative rules control forms of behaviour which exist independently of the rules themselves; constitutive rules create forms of behaviour which are rule-dependent. Regulative rules are exemplified by rules of manners and interpersonal social be-

haviour, types of behaviour which pre-exist the rules; constitutive rules include the rules of games or sports, which only exist as an expression of the underlying rules. Thus, regulative rules often take the grammatical form of the imperative such as "Do X"; whereas constitutive rules, while sometimes taking this form, will also have a more complex, almost tautologous form, such as "X counts as Y" etc. In this way, a constitutive rule can resemble an analytic truth based on the meaning of a certain concept within a rule-governed game such as chess. A corollary of this is that behaviour which is in accordance with regulative rules is interpretable in the same way with or without the existence of the rules. However, behaviour that is subject to constitutive rules is liable to be interpreted differently if the rules are not in existence. Searle transfers this analogy to the speaking of language, i.e.:

> ...the semantic structure of language may be regarded as a conventional realization of a series of sets of underlying constitutive rules, and ... speech acts are acts characteristically performed by uttering expressions in accordance with these sets of constitutive rules.[57]

Parallel to Searle's dichotomy between regulative and constitutional rules is his distinction between "brute" and "institutional" facts. Brute facts are the incontrovertible, physical data which are generally regarded as being the cor-

nerstone of the empirical sciences. However, there is another whole body of apparent facts which do not comply with these conditions at all. These are not straightforward accounts of hard, physical or psychological properties. What Searle terms institutional facts are facts which only thus on the basis of certain social institutions such as the marriage ceremony, a baseball game, a trial, a legislative action, and even the notes of a currency.[58] These institutional facts, amongst which we must count our speech acts, are governed by constitutive rules.

This is why a purely empirical account of language, which only notes the sensory data comprising sounds and scratches on the page must always fall short of providing an adequate description. It is necessary to consider the rules which constitute the institution of language. Otherwise linguistics amounts to nothing more than an attempt to understand why thirty adult men spend their weekends clad in variously coloured shirts in order to chase a dirty oval leather ball around a muddy field in the rain, without mentioning the game of rugby and its rules. Thus, a rule is more than a "generalization" of what people do; to know a rule is "to know how to play according to the rule". In this way rules are related to social practices. "Rules generate - or are the medium of the production and reproduction of - practice."[59]

Yet the analogy between language and games will only take us so far. For human language has two additional dimensions: meaning and human intention. Searle places a greater emphasis

than previous theories[60] on the "bridge" which is shared between the speaker and the hearer and provided by their mutual understanding of a common language. First, to understand a sentence is to know its meaning. This in as much as both ends of the communicative act are governed by the rules of the language. Secondly, a sentence and its meaning are uttered essentially with the intention of getting the hearer to recognize "that certain states of affairs specified by certain of the rules obtain."[61] The success of this is dependent, in its turn, on the hearer's recognition of the original intention of the speaker which is again, in a circular fashion, only apparent from a knowledge of the rules which constitute the sentence uttered. Thus, finally, in order for meaning to be successful, it is necessary for the hearer to realize the intentions of the speaker, (i.e. to understand the sentence), which is dependent upon his knowing its meaning, which is dependent in turn upon his knowing the "rules governing its elements."[62] Crucially, it is this interdependence of the hearer's recognition of both the intention of the speaker AND the rules of the sentence that establishes the illocutionary nature of the effect that is carried out.

Searle's assertion of the centrality of understanding and intentionality in the social practice of language use has crucial implications for the analysis of the ideological effect which is achieved by the production, transmission and reproduction of scientific discourse within an institutional setting. There is a tendency to regard institutionalized dis-

course as a set of unvarying, non-recursive practices which generate an uncomprehending and mute compliance by individual actors. However, this thesis wishes to consider the potential that exists within the situations created by institutional discourse for understanding and strategic action on the part of agents. This hypothesis is grounded in Searle's contention that the rules of language perform an essentially enabling function for the speaker. Within the context of institutional discourse, this is not because ideological symbol systems operate in a way which is merely analogous with a language; but because language is a substantive part of ideological symbol systems.

1.6 Language, Ideology and the Medical Sciences

This thesis will go on to consider the construction of one particular area of institutional discourse in the light of the theory of ideology outlined above. Ideology is taken as an effect of symbol systems which promotes and "legitimates the sectional interests of hegemonic groups."[63] Since language is a constituent part of ideological symbol systems, our analysis will be informed by two aspects of the linguistic theory of the analytical philosophers. First, the construction of language is not subject to a correspondence between language and observable facts but is a social practice which is constitutive of meaning. And secondly, the actor within the setting of the production, transmission and reproduction of institutional

discourse is not a 'cultural dope'[64]; he or she is credited with some understanding and strategic capability within the institutional context.

In a movement which parallels the displacement of a correspondence by an action theory of language, and the supersession of an epistemological theory of ideology by a theory of ideology as social practice, the traditional view of science as being based on "brute facts" which are governed by regulative rules has been very much shaken in the past thirty years. Writers such as Kuhn[65] and Ziman[66] have asserted forcefully that science is based upon the construction and maintenance of a consensus of knowledge than an incontrovertible correspondence between the perceptions of researchers and material phenomena.

Thus, in keeping with the theory of language as action outlined by Austin and Searle, we will pursue the hypothesis that science is in fact a set of "institutional" facts governed by constitutive rules; and that language has a crucial role to play in the production, transmission and reproduction of scientific knowledge. For, as we have seen in our analysis of ideology in the opening section of this chapter, once we have got past the mutual exclusivity of science and ideology, it has to be acknowledged that "any type of idea-system may be ideological",[67] including that of science. Furthermore, the linguistic system is one of many symbol-systems[68] that are mobilized in the production, transmission and reproduction of scientific knowledge and, as such, it has

a potential for the creation of ideological effects.

One of the twentieth century thinkers who has forcefully challenged the epistemological hegemony of the empirical sciences is Michel Foucault. This thesis will go on to explore at some length Foucault's descriptions of the way in which the discourses of rational knowledge - those of the medical sciences, but also those of psychiatry, penology and sexuality - are grounded in social practices, and in particular those practices which take place in the nexus of the agent, the scientific text and the institutional site of its production.

Notes and References

1. Bourdieu, P. (1991). Language and Symbolic Power. Cambridge. Polity Press, p.37.

2. To use Bourdieu's (1977) phrase from Outline of a Theory of Practice. Cambridge: Cambridge University Press.

3. Turner, B.S. (1987). Medical Power and Social Knowledge. London: Sage, p. 155.

4. Giddens, A. (1979). Central Problems in Social Theory. London: Macmillan Educational, p.188.

5. See preface for a detailed narrative of the ontology of the thesis.

6. Bazerman, C. (1980). Laboratory life: the social construction of scientific facts (review). Social Studies of Science Newsletter, 5, 14-19.

7. Foucault, M. (1967). Madness and Civilization; (1972). The Archaeology of Knowledge; (1973). The Birth of the Clinic. London: Tavistock.

8. E.g. in Freidson, E. (1973). Professionalization and the Organization of Middle-Class Labour in Postindustrial Society, 57-58. In P. Halmos (Ed.) Professionalization and Social Change (pp. 47-61). The Sociological Review Monograph, No. 20, Keele.

9. Halliday, M.A.K. (1973). Explorations in the Function of Language; (1978). Language as a Social Semiotic; (1985). An Introduction to Functional Grammar. London: Edward Arnold.

10. Bernstein, B. (1990). The social constitution of pedagogic discourse. In Class, Codes and Control, vol. IV (pp.165-219). London: Routledge & Keegan Paul.

11. Bernstein, B. (1971). Class,Codes and Control, vol. I. London: Routledge & Keegan Paul.

12. Bernstein, B. (1990), pp.165-219.

13. Giddens (1979), p.188.

14. After Eagleton, T. (1991). Ideology. London: Verso.

15. Giddens, (1979), p.69.

16. Giddens, A. (1979). Central Problems in Social Theory. London. Macmillan Educational, p.189.

17. Giddens (1979), p.190.

18. Marx, K., & Engels, F. (1965). The German Ideology. London. Lawrence and Wishart.

19. Giddens (1979), p.168.

20. Mannheim, K. (1936). Ideology and Utopia. New York: Harcourt, Brace and World.

21. Althusser, L. (1977). For Marx. London: Allen Lane.

22. E.g. Althusser, L. (1977). Ideology and the state ideological apparatuses. Lenin and Philosophy and other Essays. London. New Left Books.

23. E.g. Mannheim, K. (1936).

24. Eagleton, T. (1991). Ideology. London. Verso, p.

25. Eagleton (1991), p.28.

26. Eagleton (1991), p.29.

27. Giddens (1979), p.187.

28. Giddens (1979), p.187.

29. Giddens (1979), p.187.

30. E.g. Hoskin, K. (1994). Boxing clever: for, against and beyond Foucault in the battle for accounting theory. Critical Perspectives on Accounting Theory, 5, p.69.

31. Giddens (1979).

32. Giddens (1979), p.188.

33. Geertz, C. (1964). Ideology as a Cultural System. In D.E. Apter, Ideology and Discontent (pp.47-75). New York. The Free Press of Glencoe.

34. Eagleton (1991), p.9.

35. Marx, K., & Engels, F. (1965).

36. Austin, J.L. (1962). How to do things with words. London. Oxford University Press, p.45.

37. Austin (1962), p.45.

38. Austin (1962), p.58.

39. Austin (1962), p.59.

40. Austin (1962), p.83.

41. Austin (1962), p.88-9.

42. Austin (1962), p.91.

43. Austin (1962), p.108.

44. Austin (1962), p.114.

45. Austin (1962), p.116.

46. Austin (1962), p.116.

47. Austin (1962), p.134.

48. Austin (1962), p.135.

49. Austin (1962), p.138.

50. Austin (1962), p.145.

51. Austin (1962), p.146.

52. Searle, J.R. (1969). Speech Acts. Cambridge. Cambridge University Press, p.12.

53. Searle (1969), p.17.

54. Searle (1969), p.19.

55. Searle (1969), p.21.

56. Searle (1969), p.18.

57. Searle (1969), p.37.

58. Searle (1969), p.51.

59. Giddens (1979), p.67.

60. E.g. Grice, P. (1957). Meaning. Philosophical Review, (July) 377-388.

61. Searle (1969), p 48.

62. Searle (1969), pp.66-7.

63. Giddens (1979), p.187.

64. Giddens (1979), p.71.

65. Kuhn, T. (1970). Structure of Scientific Revolutions. Chicago. University of Chicago Press.

66. Ziman, J. (1968) Public Knowledge. Cambridge. Cambridge University Press.

67. Giddens (1979), p.187.

68. Others include algebra and geometry.

CHAPTER 2

THE THEORY OF DISCOURSE

For Michel Foucault, the discourse of the empirical sciences is far from a transparent correspondence between form and content, language and parole, Logos and knowledge. At the point when Foucault took up his post at the College de France, he gave an inaugural speech on 2 December 1970[1] in which clearly laid out the key points with regard to his theory of discourse. This was the period when he was reaching the end of his 'archaeological' studies of the emergent disciplines of psychiatry and medicine and was about to launch into his 'genealogical' account of penology and sexuality. He was standing on an intellectual ridge which enabled him simultaneously to look back on his theory of discourse, while looking forward to his account of social practices.

In the The Order of Discourse Foucault highlights the difference between the *analysis of language* and the *theory of discourse*. We have seen in the previous chapter that John Searle's conceptualization of language as being made up essentially of an assemblage of 'speech acts' which are executed according to certain (socially constructed) rules is preferred to a theory of language which rests upon a theory of language as a set of ideal forms (e.g. Saussure's concept of 'langue'[2] and Chomsky's transformational-generative grammar[3]). Searle's linguistic theory rests upon the "principle of expressibility", in as much as there is a possible linguistic

element for every possible speech act. However, while this *linguistic* theory can account for the symbolic realization of every speech act, it cannot explain why one speech act rather than another is carried out at a particular time and in a particular place.

This is where the *analysis of language* needs to be complemented by a *theory of discourse*. For Foucault, if language is governed by a principle of *expressibility*, discourse is governed by a principle of *exclusion*.[4] Discourse explains why one thing rather than another is expressed at a particular historical moment:

> ...in every society the production of discourse is at once controlled, selected, organised and redistributed by a certain number of procedures whose role is to ward off its powers and dangers, to gain mastery over its chance events, to evade its ponderous, formidable materiality.[5]

One of the tactics of exclusion is that of prohibition. Foucault notes that this procedure is most marked with regard to politics and sexuality. Here, we are a long way from the liberative discourse of rationality envisaged by the Enlightenment:

> discourse, far from being that transparent or neutral element in which sexuality is disarmed and politics pacified, is in fact one of the places where sexuality and politics exercise in a

privileged way some of their most formidable powers.[6]

Foucault is here looking forward to his writings on the "carceral archipelago" and "bio-politics". However, the same "privileged exercise...of formidable powers" is also true for the 'misrecognition' of the transparency of the medical sciences by the custodians of the body in modern societies.

Therefore, Foucault's new 'order' of discourse supersedes the ancient Platonic duality of Logos and knowledge. This duality has given rise to what Foucault considers the most marked "system of exclusions" - the "opposition between true and false".[7] Foucault's new 'order', the 'order of discourse', seeks to explain the true-false polarity by analysing the specific historical conjuncture at which a certain set of statements comes into being. At surface level, at a merely propositional level, the truth of a statement at any one historical point appears incontrovertible; but if one compares chronological shifts in the truth value of groups of statements over time, say between the sixteenth century doctrine of sympathies and the nosological tabulation of diseases in the eighteenth century, then what is true within one system of thought is not necessarily true within another. In this respect, even the self-evident truths of modern medical technologies, with all the support of the empirical sciences behind them, can be seen as historically contingent. This shifting, contingent opposition between true and false, Foucault calls the 'will to truth' ("volonte de savoir")[8]:

> ...all that appears to our eyes is a truth conceived as a richness, fecundity, a gentle and insidiously universal force, and in contrast we are unaware of the will to truth, that prodigious machinery designed to exclude.[9]

Historically contingent factors determine what may *not* be included within a particular period's 'paradigms' of knowledge. The will to truth is therefore a "historical, modifiable, and institutionally constraining system".[10] In its institutional aspect, the will to truth is supported by a whole network of *practices*. In this respect it is not just an abstract, ideal phenomenon. These include pedagogic practices, the systematization of publishing, the organization of professional societies and the control of technological hardware[11] which we shall examine with greater precision later[12] in the context of Basil Bernstein's schema of 'pedagogic discourse'.[13] With the weight of institutional support behind it, the will to truth actually constrains other discourses; only the authorized discourse, the 'doxa', is permitted currency at any one time. Furthermore, of the "procedures of exclusion" which Foucault notes in his inaugural lecture, the will to truth is currently becoming the most pervasive, "seeking to assimilate the others, both to modify them and to provide them with a foundation".[14] Ultimately, the order of discourse within any historical period is grounded within a set of concrete *practices*, in modernity practices which are becoming increasingly regularized by their institutional and

bureaucratic structure.

> We must conceive discourse as a violence which we do to things, or in any case as a practice which we impose on them.[15]

In this chapter we will look at the principally discursive studies which Foucault carried out into the emergent discourses of psychiatry[16] and of medicine,[17] and will conclude with the crystallization of the theory of discourse which he sketched out in the lecture above.[18] The methodology for the analysis of *discourse* is principally what Foucault termed his "archaeological" method.

In the years leading up to the publication of The Archaeology of Knowledge, Foucault increasingly refined his analysis of discourse of background practices such as the analysis of the role of the institution or the subject in the construction of the text. However, in the wake of the political upheavals of the late sixties and early seventies, Foucault reinstated his emphasis upon the social, and in particular the institutional, *practices* in his investigation of the formation of the discourse of penology[19] and of sexuality.[20] These social and institutional practices, investigated according to his "genealogical" method, will be taken up in Chapter 3.

2.1. An Archaeology of Madness

In Madness and Civilization[21] Foucault offers a prototypical archaeological description of how the history of mental illness was established in three historical phases. One objective of the study is to relativize the apparent empirical absolutes of modern psychiatry by placing them in a historical context. And secondly, its purpose is also to define how the concept of the insane person emerged over the last three centuries in a position which was negotiated between medical institutions and medical texts, rather than reflecting any 'essential' characteristics of the mad person per se. In this respect, although Foucault chooses with hindsight to emphasize the role of the autonomy of discursive formations in The Archaeology of Knowledge,[22] it can be seen that medical institutions also have a large part to play in the construction of madness in this first archaeological study.

2.1.1 The Confinement of the Insane

Foucault dates the first step towards the confinement of the mad and insane in 1656, when an edict was passed to combine several already existing houses or hospitals under the integrated "semi-juridical structure"[23] of the Hopital General in Paris. In it the mad were placed indiscriminately alongside the poor, the unemployed, and the criminal, thereby taking over the site on the margins of society occupied previously by

the leper in the Middle Ages. By 1789 the network had extended throughout other municipal and juridical centres in France. Similar houses of confinement also became instituted throughout Germany, Holland, Italy and Spain. In England the houses of correction instigated by an act of 1575 modulated by the end of the seventeenth century into the celebrated "workhouse" of the eighteenth century. Thus the space of confinement left vacant by the disappearance of the leper was filled indiscriminately by the madman and the malefactor, the indigent and the poor on a huge scale. Within a few years the Hopital General of Paris housed 6,000 people, around 1% of the population of France. However, this site of confinement had a purpose: that of turning the beggar into a labourer. The sick and the poor alike were made to work. This led to the hospitals performing the dual role of medical institution and workhouse.

Ultimately, however, the houses of confinement did not work as productive entities and disappeared altogether at the beginning of the nineteenth century. Yet their real achievement cannot be assessed in relation to their productive capacity, but in regard to their "affirmation of values". The workhouse instigated "a certain ethical consciousness of labour" which created an absolute opposition between labour and poverty.[24] In this way confinement bore a moral as well as an economic demand which separated labor from idleness in the same way as in earlier times the leper had been separated from the healthy populace of the city.[25]

It was precisely this space of exclusion, set aside for all poor people in the 17th century, that the mad would finally appropriate and by the 19th century make their own. Within the community of the poor, the mad were the least useful and least obedient in the environment of the workhouse. The houses placed an overtly moral and quasi-religious value on the efficacy of labour as a moral virtue that would in some way redeem the inmates and reinstate them as productive citizens, and to which the madman could not comply. Thus madness, which had reigned in comparative freedom throughout the Renaissance, within half a century found itself constrained by the incipient morality of the bourgeoisie and excluded by the tortuous precepts of reason.

This confinement of unreason in the Classical Age also served to reduce the status of the insane person to that of an animal. Like an animal in captivity, the newly confined madman was treated in a paradoxical way - simultaneously hidden away and displayed. While the Renaissance sought to bring evil out into the open through confession and public gaze, the Classical Age sought to suppress it, in the fear that any publicity would cause a multiplication of ills.[26] However, the Classical Age could never throw off the medieval custom of displaying the insane while in captivity. Even within the workhouse, the mad were paraded as a means of public entertainment and as a source of revenue. Yet the feature which distinguishes this spectacle from the Renaissance is that whereas before they were free, if continuously expelled, latterly they never

emerged from behind bars.

Now the mad were treated like animals in captivity, held in damp prisons with crude bedding and clothing, and often confined by chains. This animality was perceived by classicism as the essence of madness, which "could be mastered only by discipline and brutalizing".[27] This animalistic essence of unreason was regarded by the classical physicians as an area of unrestrained and unrestrainable frenzy where reason no longer holds sway.[28] But it also had a religious and moral significance in as much as madness, as animality linked with evil, was the lowest point to which man could fall in his inherent sinfulness. Thus, for Classicism madness was subsumed in unreason - that "subterranean danger" and "threatening space of an absolute freedom"[29] which was the negation of Man.

2.1.2 The Medicalization of the Mentally Ill

Foucault's archaeological account of psychology goes on to shatter two myths which are contained in the liberal history of psychology: first, that the call for the partitioning of the insane did not find its voice until the 19th century; and secondly, that it originated from humanitarian principles. Foucault maintains that the liberation of the insane originated from the 18th century and owed more to political pragmatism and economic expediency than the humanitarian inclinations of the nascent bourgeoisie.

Two transformations took place in the consciousness of

the 18th century relating to the indiscriminate confinement of the poor, the criminal and the insane. First, from the second decade there were calls for the separation of convicts from madmen on the morally pragmatic grounds that danger and disquiet threatened the sane, criminal occupants of the houses of confinement by cohabiting with the mad. Secondly, it became recognized that poverty was an inevitable corollary of capitalism. Thus, poverty lost many of its moral connotations and the confinement of the poor became problematic in as much as it was depriving both the land and the new industries of cheap labor, as well as immobilizing charitable funds for their maintenance.

In France, by the time of the Revolution, various steps were taken to limit and define the terms of confinement. Legislation was carried out both to define the criteria for confinement, to limit it, and to set apart the mad from the sane. Gradually the confinement of those guilty of moral misdemeanors was reduced and, finally, in March 1790, the release of political prisoners was ordered.[30] Only criminals and madmen were to remain in confinement, and the latter were to be assessed for transfer to, albeit nonexistent, hospitals. Thus, within Paris at least, insane men and women were transferred respectively to Bicetre and La Salpetriere; although anarchy and confusion still reigned in the provinces. This finally prompted the request of the bursar of Bicetre to the administration that the indigent, prisoners and madmen be separated, with the proviso that it was the mad that were to

remain in captivity. Thus, well before the turn of the century, madness realized its individual status, although the exact nature of its identity was yet to be determined.

The supposed emancipation of the insane at the end of the 18th century was initiated by Samuel Tuke in England and Philippe Pinel in France. However, both movements served rather to substitute a virtual for a material confinement. Tuke instigated a religious ethos in his asylum in order to instil a powerful moral order in his inmates,[31] so that while achieving a material liberty, the madman became morally bound to his guilt. This combined with segregation; the use of authority; constant, nonreciprocal observation;[32] the use of a family hierarchy; physical labour; and participation in social engagements to internalize new forms of constraint for the insane, rather than to herald an era of liberation.

Pinel used a less "iconographic" form of religion[33] in order to reconstitute a neutral moral basis for the behaviour of the mad within the institution. He then enforced a universal bourgeois morality upon his inmates.[34] In contrast with Tuke, Pinel removed from the mad the institutional props of their confinement in order to confront the madman with others suffering from the same delusions, and played down the role of the authority figure in the asylum. Thus, although recidivism against Pinel's code resulted in a battery of minor punishments, in his asylum madness was rather "called upon to judge itself"[35] while being held in perpetual judgement within the asylum itself.

The key development to emerge from the regimes of both Tuke and Pinel - as important to the realm of organic medicine as it was to that of psychology - was "the apotheosis of the medical personage"[36]. While the doctor did not feature at all in the houses of confinement, he became the cornerstone of the asylum. However, it is not as a scientist that the doctor is required, but "as a wise man". "If the medical profession is required, it is as a juridical and moral guarantee, not in the name of justice."[37] Thus, within the asylum the authority of the doctor came to rest, not on the body of knowledge he brings to the case, but upon the precise configuration of his relationship vis-a-vis the patient.

At the end of the 18th century this moral power appeared as a natural corollary of the treatment of madness. And when psychiatry became constituted as the first autonomous medicine of the human mind at the beginning of the 19th century, this thaumaturgic power became transferred to the figure of the doctor-psychiatrist himself. The efficacy of positivist psychiatry was maintained by the patient's complicity in allowing the residual power of an outmoded, non-positivistic, moral code to be instilled in the persona of the doctor. Thus Freud was able to rid psychiatry of all the extraneous therapeutic structures of the asylum save one: the therapeutic dissymmetry of the patient-doctor relationship.

The doctor-patient relationship initiated in the treatment of the insane in the 19th century was to persevere into both the psychiatric and physiological medicine of the late

20th century. In fact, in the current period of advanced capitalism, the psychologizing of much of the realm of physiological medicine has more than ever reinforced the role of the doctor-physician as thaumaturge and the patient as thrall.

2.2 An Archaeology of Medicine

The Birth of the Clinic[38] is an account of the development and transformation of medical discourse across the same "chronological threshold" of the 19th century. In this respect the temporal framework of Foucault's analysis of the discourse of medicine is broadly similar to that of his history of madness. However, in contrast with the earlier work, the methodology of The Birth of the Clinic is more clearly defined and much more in keeping with the precepts articulated later in the The Archaeology of Knowledge. Foucault uses the term "spatialization" to define the three loci of medical discourse: the primary (conceptual) spatialization of disease, the secondary spatialization of the patient, and the third spatialization in extra-discursive areas. Or to put it another way, he gives an account of the way in which the identity of the subject becomes constructed as patient (secondary spatialization) in the interstices between an ensemble of empirico-scientific texts (primary spatialization) and a nexus of juridico-scientific institutions (tertiary spatialization).

As we have seen in Madness and Civilization, Foucault

again emphasizes the distinction between different periods of history in order to relativize the truth-value of the different discursive formations in each period, and in particular those of the empirical sciences of modernity. In this way, The Birth of the Clinic may be seen as a straightforward polarization of medical ideas generated in the Classical Age with those of modernity. However, Foucault's account of the transformation of medical knowledge across the threshold of the nineteenth century is not simply bipolar. He details a three stage modulation of medical thought within that brief, historical period. Furthermore, as Foucault's analysis also draws out the "discontinuities" between the periods it becomes apparent that the systematization of corporeal space developed in the anatomo-clinical method was in part a recuperation of the classificatory methods of the eighteenth century. Thus, in Foucault's analysis, not only does he reveal the ruptures in the march of scientific progress and rationality; but also indicates that history can fold back upon itself and recuperate once discredited forms of knowledge. Here, in contrast with Madness and Civilization, the emphasis falls more squarely upon the discursive construction of the patient as these three stages unfold, with the institutional aspect only playing a supporting role towards the end of the book.

2.2.1 Ways of Seeing

The first, pre-empirical, picture of disease which prevailed in the Classical Age was homologous with the era's classificatory picture of plants and animals. The essence of human disease was mapped out on tables. Diseases were identified on the basis of the unfolding of their phenomena over time ("historical" as opposed to "causal" knowledge), and the extent of their resemblance to each other. These criteria could reveal the "rational order" of a class of disease[39] which was not related to any one organ or part of the body but was revealed in the context of the entire human organism throughout which it could mutate and change. This was the basis for the classical doctrine of sympathies, in which the disease constituted itself as an integrated system imposed upon the body of the patient.

The essential difference between this and the second phase of medical analysis ushered in by the modern clinic lay in the reading of the signs and symptoms of the disease. In the classical era, these were simply evidence of the pathological essence which lay behind them, but with the clinic they became observed as the transparency of the disease itself. Thus the total description of what the disease offered up to the observing doctor represented a transcription of the very being of the disease which resulted in the reinstatement of the complex description of the minutiae of the disease. This combined with the application of analogy to instigate the

symptom as the element of the disease, and the use of frequency and probability based on the "completely screened multiplicity of individual facts"[40] to calculate the degree of certainty of a diagnosis.

However, even as in the clinical world the symptom displays its newfound transparency, it still has to be defined in terms of the part it plays in the disease as a whole. Thus, the age of the clinic is also characterized by the analytical process that enables the doctor to relate the partial symptom to the totality of the disease. These empirical techniques involved the comparison of organisms, recall of normal functioning, enumeration of frequencies, and postmortem examination. Foucault, therefore, insists that with the clinical age there is no longer a division between seeing and speaking the truth of the disease. An exact homology now exists between disease and medical discourse; for the doctor, as for the philosopher, "the world is...the analogue of language".[41] And in this, medicine achieved the goal of all the empirical sciences.

However, one more move was to be made before the modern anatomo-clinical mode of knowledge emerged fully formed. This lay in the re-assignation of what appeared to be two essentially different classes of fever: the organic, which was found to have a lesional correlative, and the inorganic ("nervous", or "vital") fevers which could only be defined negatively by a failure to discover any lesions on autopsy. Here again, the species as opposed to the cause or "site" determined the nature of a disease in the classical period;

and nosography was again reinstated into pathological anatomy. This dichotomy was finally shattered by Broussais in 1808.[42] His revolution in thought moved in two phases: first in identifying particular types of inflammation associated with fever according to particular, localizable, types of disease; and secondly, following on from this, in intersecting Bichat equivalences of "a particular symptom - a local lesion, a general symptom - an overall alteration" in order to trace the symptoms of the general pathological condition of fever *back* to a localization in its particular tissual space. "Fever is merely a locally individualized phenomenon with a general pathological structure". Thus the preconceived generalities of nosography gave way to the organic space of localization; inflammation reflects "a process of general structure, but with an always localized attack point."[43]

2.2.2 The Position of the Patient

Just as the status and position of the madman changes according to his differential location from medieval to modern times (perpetual expulsion, indiscriminate confinement, separate confinement); so the definition and status of the medical patient is constructed and reconstructed differently according to the three modalities through which medical thought is transformed between the Classical Age and modernity.

Foucault situates the patient in classical times as the

"secondary spatialization of the pathological".[44] "In order to know the truth of the pathological fact, the doctor must abstract the patient."[45] It is the primary spatialization of the disease, the disease in its ideal form, that is of interest for the eighteenth century physician. The exact characteristics of the patient merely interfere with the essential manifestation of the disease in the body. The disease is articulated as a two dimensional picture on the denser three dimensional organism. Thus, the precise localization of the disease is not a principal consideration; for the doctrine of sympathies permits a disease to travel around the body so long as its integrated features correspond to the prescribed configuration of the disease. This is opposed to an internosological concept of causality which defines the difference between simultaneous or successive occurrences of essentially discrete diseases in one body. Changing temporal features also give way to a homogeneous measurement of quality. By weighing and gauging the texture of organs, the essential type of a disease may be extracted from the individuality of the patient.

In as much as in classical thought the life of the disease was opposed to the life of the patient so, in the final phase of the revolution of "clinical" medicine, the life, or identity, of the disease was actually opposed to the death of the patient. "It is at death that disease and life speak their truth."[46] If the classicists had to extract all manifestations of life in a patient to find the essence of a disease,

the anatomists had to extract all manifestations of death. It was therefore important in order to distinguish empirically the effects that the disease had had on the organism from the physiological effects of death itself and minimize the latter.

2.2.3 Medical Institutions

Foucault's analysis of the development of clinical medicine also involves an analysis of its material organization in society, although this is accorded less primacy than in the history of madness. The material aspect involves the analysis of the social space accorded disease, as well as economic issues. This Foucault labels the "tertiary spatialization" of disease.

Foucault traces two inherent tensions in the medical world of the eighteenth century France regarding the localization of disease and its conceptualization: one opposed the home against the hospital as the preferred site for a disease; and one opposed the university against the police with regard to the principal site for the pedagogization and authorization of medical practice. The classical doctor, seeking disease in its purest form, favoured the home as the social space where the disease could flourish unencumbered, and find its true identity. On the other hand, the hospital was a place where the disease ran the risk of losing its identity through exposure to an alien environment or crossbreeding with other diseases. This also fitted in with the prevailing economic

thought of the time, which saw assistance given to maintain the family as being more cost-effective than maintaining the sick individual in hospital separated from his family, who would eventually decline into pauperism.

These issues were resolved in keeping with post-Revolutionary ideal of a healthy, decentralized society, and the libertarian aims of the egalitarian state. First, legislation was passed demanding the deinstitutionalization of the state-run hospitals and reallocation of the hospital funds for public assistance; and, secondly, the University, along with the Faculte and the schools of medicine was closed down. It was in this institutional hiatus, after the first phase of revolutionary reforms, that the essence of clinical thinking emerged.

Although the modality of medical thinking associated with the clinic had been latent for over a century, both in terms of teaching at the side of the patient with the emergence of the home as the locus of disease, the historical catalyst had been missing to bring clinical practice to its maturity. It was not until the old hospital structures had finally been abolished in 1792 and the Faculte silenced that the "gaze" - the new modality of empirical medical knowledge - could really emerge as the dominant mode of seeing, a "medicine in liberty". Thus, in this intervening period of dissolution, the way of seeing in medical thought was subjected to irreversible restructuring even though eventually the material structures of medicine appeared to regress towards their pre-

revolutionary forms of hospital and faculty. For, the eventual outcome of the plethora of legislation following the last revolutionary upheaval was a confirmation of the contemporary status of the doctor as "a liberal and protected profession";[47] and the abandonment of the breaking up of the hospitals, as they ultimately provided an essential training ground for doctors and protection for the poor and sick. However, Foucault insists on their essential difference: "for the first time, the criteria of theoretical knowledge and those of a practice that can be linked only to experience and custom were found together in a single institutional framework."[48] This was, principally, because clinical teaching within the hospitals had at last become an integral part of medical training (and therefore seeing), whereas previously, where it existed at all, it had only been as an appendage.

Although Foucault examines the interdependence of three areas of spatialization - conceptual/discursive, patient/subject, extra-discursive/institutional - in the last instance Foucault locates the origins of the clinic in "a reorganization in depth, not only of medical discourse, but of the very possibility of discourse about disease,"[49] by carrying out a purely "structural analysis of discourses".[50] Also, although the emergence of medicine as an empirical science took place in three stages - classical, empirical, and febrile - ultimately the discursive revolution can be pinned down to the primary "clinical" period with the abandonment of the classical nosological tables.

However, in his ongoing attempt to define a pure level of discursive practice by describing the purely *structural*[51] characteristics of medical discourse, Foucault consistently refuses to consider the *meaning* of the medical texts he considers. This leads him into an apparently uncritical acceptance of the essentially ideological position of the empirical method in the sciences of man. In the second half of the thesis, we shall develop Foucault's argument in order to build a more critical stance upon his theory of discursive practices.

2.3 The Archeology of Knowledge

The theory of discourse finally proposed by Michel Foucault in The Archaeology of Knowledge[52] claims to supersede both the analysis of language and the study of thought.[53] It can be seen to offer a third level of critique in contradistinction to the analysis of ideology at the level of ideas and beliefs or the analysis of discourse at a purely linguistic level. The Archaeology of Knowledge is a retrospective exposition on the method underlying Foucault's two earliest works which looked at the construction of the medical subject and the madman within the context of the medical and psychiatric institutions and discourses that arose at the beginning of the Classical Age.

2.3.1 The Statement

The minimal component of Foucault's archaeological model of discourse is the statement. This is the smallest unit of discourse "that can be isolated and introduced into a set of relations with other similar elements."[54] The statement is distinguished from conventional discursive entities such as the proposition and the sentence. While a proposition[55] may appear identical to one particular statement, it might end up assigned to a different "discursive formation" according to discursive rather than logical criteria. The statement is also a broader category than that of the grammatical sentence. Although a statement does not adhere to the grammatical rules that formalize a sentence, anything from a table of classification to an algebraic formula can be a different form of statement so long as they function within a a particular "discursive formation". Furthermore, a statement is not reducible to the "materiality" of language, such as the letters of the alphabet or the sound waves of a pattern of speech. Print and sound are the media for the statement, but do not constitute the statement itself.[56] Thus the statement is not a structural, but a functional entity.

Initially Foucault also distinguished his conceptualization of the statement from Searle's concept of the speech act. Foucault maintained that speech acts are liable to be made up of a number of discrete statements.[57] However, this was based on a false conception of the potential relations between dif-

ferent speech acts. For, as Searle was later to point out, one type of speech act such as an assertion can be part of another, such as a promise. Ultimately, Foucault did concede the homology of his concept of the statement and that of the speech act, conceding that initially he "saw them under a different angle."[58] Dreyfus and Rabinow place this "different angle" in Foucault's interest in institutional rather than with "everyday" speech acts. He is not interested in "the way a local, pragmatic context and a background of non-discursive practices determine the conditions of satisfaction of ordinary speech acts."[59]

Foucault calls the function of the statement the "enunciative function"; and this function has four characteristics. The first is the relation between a statement and what is stated in it. The statement does not have a precise referent but establishes a set of rules and conditions by which it defines and delimits the concept which it contains.[60] Secondly, the relations of a statement to its subject are neither identified by its grammatical indicators nor its material production by an author. The positioning of the subject within the statement is an essentially non-personal set of institutional, social or epistemological relations that can be occupied by the individual when he makes the statement.[61] Thirdly, unlike the sentence or the proposition, a statement cannot exist in isolation, but must be related to a supporting field of statements, the "enunciative field."[62] The enunciative field is distinct from a situational or lin-

guistic 'context' for it focuses on the complex network of relations which the statement maintains amongst other statements. Finally, a statement has a material existence, which arises from its capacity to be repeated in a recognizable form. This condition of "repeatable materiality" is lent to the statement both by its function within an institution,[63] and by its relationship to other statements within the enunciative field.

Foucault views the "enunciative function" as a type of relation rather than a static form. It is the "modality of existence" that enables a group of signs to constitute a discursive function; or, conversely, "discourse is the group of statements that belongs to a single system of formation."[64] The statement, then, as analysed at the level of its historical actualization reveals the relation of a set of signs to a domain of objects, a set of possible positions for a subject, a field of coexistence, and its own conditions of repeatable materiality. Thus the governing of the enunciative function by a body of anonymous, historical rules, is what may be referred to as a "discursive practice".[65]

Having defined the statement, Foucault lays down three working principles for the analysis of statements and discursive formations. First, this analysis should examine why one particular statement or series of statements is made out of all the potential ones written within a language, and what is distinctive about them. Secondly, the analysis of statements treats them in their "systematic form of exteriority,"[66] ac-

cording to their pure system of material dispersion, as opposed to establishing a relation to an interiority of the individual consciousness, or the beyond of transcendental subjectivity. And, thirdly, this form of investigation looks at the ways in which statements are accumulated: statements depend upon their material supports and techniques, and successive statements in a particular discursive formation have specific forms of relations. Thus an examination of the principles of rarity, exteriority and accumulation Foucault describes as the definition of "the type of positivity of a discourse."[67]

This positivity (e.g. the positivity of clinical medicine) characterizes the unity of a discursive formation "throughout time."[68] In this sense Foucault refers to its role as a "historical a priori" in as much as it "defines a field in which formal identities, thematic continuities, translations of concepts, and polemical interchanges may be deployed."[69] The "a priori" is thus "a condition of reality for statements", "the group of rules that characterize a discursive practice". This "historical a priori" is in stark contrast to the "formal a prioris" of the structuralists; the "historical a priori" is transformable, whereas the "formal a priori" is static. Thus discursive practices are systems which establish statements as events and things; Foucault calls this system of statements the "archive". The archive defines the statements in terms of "the system of its enunciability" and "the system of its functioning", i.e. it is "the general sys-

tem of the formation and transformation of statements."[70] Hence Foucault justifies his use of the word "archaeology" to describe the search for the description of discursive formations: "archaeology describes discourses as practices specified in the element of the archive."[71]

2.3.2 Discursive Formations

Within the archive, statements constitute discursive formations. There are four archaeological parameters to an analysis of discursive formations: objects, subjects, concepts and strategies.

Foucault examines three ways in which objects are formed within discourse. First, specific forms of knowledge and social practices in a particular period interrelate to create the "surfaces of emergence" which enable the discursive production of objects within a particular field. Secondly, individuals within a particular interest group or profession (doctors, priests, teachers) obtain the publicly recognized authority to designate the objects within a discursive formation. Thirdly, different kinds of object (e.g. madness) are classified in relation to each other within a particular discursive formation (e.g. psychiatry). Thus a discursive formation "is characterized not by privileged objects, but by the way in which it forms objects that are in fact highly dispersed. This formation is made possible by a group of relations established between authorities of emergence, delimita-

tion and specification."[72]

In this way the object "exists under the positive conditions of a complex group of relations"[73] which are not present in the object itself but enable it to appear and "to be placed in a field of exteriority."[74] However, discursive relations operate at three levels in order for the object to emerge. The primary set are those which exist between background practices such as "institutions, and economic and social processes."[75] These do not actually characterize the object in question but serve an enabling, catalytic function in its emergence. A set of secondary, or reflexive, relations are also found in the ways that practicing subjects reflect upon and define their own behaviour. However, Foucault supersedes both objective and subjective sets of discursive relations with the tertiary set of *discursive* relations, the rules which are immanent in discursive practice.[76] These rules of discursive practice operate neither as internal grammatical or logical relations nor as external, limiting, social and economic relations. Rather they exist "at the limit of discourse....to determine the group of relations that discourse must establish in order to speak of this or that object."[77]

Similarly, Foucault rejects the notion of a founding, transcendental subject of discourse. Rather, the subject takes up an impersonal position in relation to "the formation of enunciative modalities"[78] within discourse. Medicine is therefore described as "the establishment of a relation...between a number of distinct elements, some of which

concerned the status of doctors, others the institutional and technical site from which they speak, others their position as subjects perceiving, observing, describing, teaching etc."[79] Thus the "status" of the subject (the doctor) emerges in relation to three factors: his practice and knowledgeability of his area (medicine); the "institutional sites" from which the subject makes and applies his discourse; and the "positions of the subject...in relation to the various discourses or groups of objects", i.e. whether the doctor is the questioning listening, seeing, or observing subject.

The third element of a discursive formation are its concepts. Foucault rejects the liberal notions of the history of ideas which attempts to see theories such as organic medicine, modern psychiatry or transformational grammar arising fully formed in order to supersede some earlier, and less valid form of knowledge. Foucault prefers to takes the concepts of discursive practice as rule-governed and relatively autonomous, examining them at "a kind of preconceptual level, the field in which concepts can coexist and the rules to which this field is subjected."[80] Again there are three sets of rules for this conceptual field: "forms of succession" - the set of rules for arranging statements in series; "forms of coexistence" - the principles of inclusion or exclusion operating within a particular grouping of statements; and "procedures of intervention" - the actual linguistic reformulation of statements to create a discursive homogeneity. These are the group of relations that "constitutes a system of conceptual

formation."[81]

Now, Foucault is not saying that these rules for the formation of concepts are ways in which speakers ensure that they are understood, but rather that they operate "according to a sort of uniform anonymity, on all individuals who undertake to speak in this discursive field."[82] However, he still holds back from a structuralist claim for a rule-governed totalization for: "one does not suppose them (rules) to be universally valid for every domain."[83] Instead, compared to any attempt to "totalize" discourse, Foucault adheres to a principle of "rarefication" which looks at areas of discourse specific to one particular time and place as being essentially discontinuous. Behind this rarefication there is no residual ideality of discourse; each particular historical instance of a discursive formation can be examined in its own right. Implicit in Foucault's position is always the relativistic notion that concepts which might have had validity at one particular historical moment no longer have meaning for a discursive formation operating at a different period according to a different set of rules. Foucault's rules for the formation of concepts therefore establish them as being discontinuous, rather than being dependent on a scheme of progress according to some grand process of rationalization.

Finally, Foucault considers taking the notion of "theme" as a possible focal point for discourse. However, this notion will not do, for a single theme such as economics can be taken as two different "strategies" to explain the formula-

tion of value, one based on exchange and the other on remuneration. Thus the concept of "theme" is too crude for Foucault's purpose and is redefined by the more precise (and non-humanistic) term "strategy". The problem Foucault poses is "to discover how they (strategies) are distributed in history....find a regularity between them and define the common system of their formation."[84] Again, he isolates three ways in which this can be done. One can determine the possible "points of diffraction of discourse" - where two apparently incompatible elements enter one cohesive area of discourse; one can locate the discourse in question within an "economy of discursive constellations" to which it belongs - specific relations with certain other discourses; and finally one can describe the function that the discourse in question performs in a field of non-discursive practices - define the sites of authority regarding a discourse and the relationship of discourse to desire. Thus "a discursive formation will be individualized if one can define the system of formation of the different strategies that are displayed in it; in other words, if one can show how they all derive....from the same set of relations."[85] Thus, Foucault finds a fourth level of description of the relationship between statements, at a somewhat greater level of generality than that of objects, subjects and concepts; yet no less removed from the attempt to uncover the fundamental "project" of a discourse. The archaeological method hereby attempts to define the surfaces of discourse in their specificity.

Foucault is seeking the unity of discourse in the "dispersion of elements" according to a systematic set of rules that governs its formation.[86] These rules can be found in the complex web of relations formed by discursive practice between the levels we have been examining in terms of the practice of discourse itself. "To define a system of formation in its specific individuality is therefore to characterize a discourse or a group of statements by the regularity of its practice."[87] Furthermore, a discursive formation exists in time. It is a dynamic, process which establishes a "principle of articulation"[88] in the transformations that take place between the different levels, either in the sphere of their interrelations or in terms of modifications that take place within the different domains themselves.

2.3.3 The Archaeological Method

At the level of analysis of discursive formations, the main target of the The Archaeology of Knowledge is the humanistic history of ideas, which tends to assume an underlying coherence within the historical process. Foucault rejects the commonplace assumptions that would impose a coherence upon historical configurations with recourse to unifying concepts of linear succession such as "periods" and "centuries".[89] In their place he posits the phenomena of "rupture" and "discontinuity" - attempting to escape the definition of history as a weft of ideas developing seamlessly within a his-

torical totality.

The archaeological method is distinct from the analysis of language on the one hand and from the analysis of thought on the other. Unities that are normally presupposed in any investigation of discourse: the concepts of tradition, influence, development, evolution, and "spirit"; the notion of genre, and even the notion of the book as an entity defined by its two covers are put to one side along with the two residual anthropological notions of the "question of origin" and the "never said". Discourse is to be regarded as a collection of statements, and the archaeologist's search will be for the rules of formation (conditions of existence) of a discursive formation in order to define its "systems of dispersion".[90] In this way the archaeological method seeks "the project of a pure description of discursive events as the horizon for the search for the unities that form within it."[91]

The archaeological method is opposed to the methodology conventionally employed by the history of ideas in four main areas. First, archaeology is not an "interpretative discipline".[92] It does not seek the meaning underlying a discourse, but rather sets out to analyse a discourse according to the rules governing its practice. Second, archaeology does not try to relate a discourse to some more ideal totality - "it is not a doxology; but a differential analysis of the modalities of discourse."[93] Thirdly, the rules of discursive practice themselves supersede the unifying concept of the oeuvre as the authority of the creative subject. Finally, ar-

chaeology does not attempt to reclaim what a writer thought when he wrote, but describes what has been written extant. Archaeology also supersedes history's attempt to evaluate the succession of ideas in terms of their originality, a relationship determined by either the extent to which a discursive function resembles another in the series or the extent to which one can be defined as preceding another in the series. By contrast, the archaeologist systematizes the succession of discursive practices by establishing the "regularity of statements", not in opposition to the irregularities of other, deviant statements, but in the context of the "regularities that characterize other statements".[94] This regularity is defined in terms of the enunciative homogeneity within discursive practices and "the interior hierarchy within enunciative regularities", i.e. enunciative derivation.[95]

Archaeology involves a comparison of discursive formations and their relation to their concomitant non-discursive practices. This is carried out strictly in an attempt to establish a specific network of discursive relations,[96] and not in any way to describe the characteristics of a culture in its totality. In order to do this, the archaeologist must demonstrate five aspects of "the play of analogies and differences as they appear at the level of rules of formation"[97]: the rules for the formation of different discursive elements (archaeological isomorphism); the conditions for the application of these rules (the archaeological model); the method of incorporation of diverse concepts within a single discursive

field (archaeological isotopia); the way in which one idea or word can cover two archaeologically distinct elements (the archaeological shift); the establishment of relations of subordination or complementarity between one discursive function and another (archaeological correlation). However, importantly, in establishing the comparative relations between discursive formations and non-discursive domains, archaeology rejects both a symbolic analysis based on an expressive equivalence of form between the discursive and the non-discursive, and the causal, in which one is an effect of the other (c.p. conventional marxist approaches). Foucault states crucially: "the field of relations that characterizes a discursive formation is the locus in which symbolization and effect may be perceived, situated and determined."[98] Thus Foucault maintains, for example, that the archaeological study of medical discourse reveals how it "is articulated on practices that are external to it and which are not themselves of a discursive order."[99]

Is this archaeological historicity atemporal? Foucault concedes, first, that archaeology can provide the principle of articulation of a discourse over a sequence of successive events and, secondly, that some of the rules of formation assigned to a positivity are more specific and derive from another. In this respect, "archaeology maps the temporal vectors of derivation". However, Foucault contrasts the archaeological model of succession with the strict linearity of language, bound to the consciousness of the subject.

"Discourse .....is a practice that has its own forms of sequence and succession"[100]. And this involves taking *differences* seriously - not perversely uncovering them, but on the other hand not papering them over - in terms of: first, the various "levels of emergence" with which we are by now familiar (object, type of enunciation, concept, strategy); second, the transformation of the elements and intrinsic and extrinsic relations of the system(s) of discursive formation; third, the analysis of what features are carried over from one discursive system to another successive one; and, fourth, the precise description of the multiple and complex transformations that constitute a particular historical rupture.

The archaeological description, then, covers a distinct discursive realm of its own. It is neither equivalent to a "discipline", (the study of madness examined many areas outside the exact confines of psychiatry); nor is it the precursor of an emergent science, (the study of Natural History actually excluded the forerunners of many of the future constituents of biology). Moreover, archaeology does not attempt to lay out all that is known in a given period; positivities are the precondition of knowledge. "There is no knowledge without a discursive practice; and any discursive practice may be defined by the knowledge that it forms."[101] Foucault describes four key stages, or thresholds, in the development of a mode of knowledge to which the analysis of discourse can be applied (Table 2.1 over).

Table. 2.1

Thresholds of Discursive Practice

1. Positivity	Single system is recognizable as a formation of statements.
2. Epistemologization	Group of statements claims norms of truth.
3. Scientificity	Statements comply to certain formal criteria.
4. Formalization	Mode of discourse is able to define a totally formalizable edifice: axioms, elements, permissible propositions, acceptable transformations etc.

Archaeology's focus of attention is principally on the boundary between level two and level three, "discursive practices in so far as they give rise to a corpus of knowledge, in so far as they assume the status and role of a science."[102] This is indissociable from an analysis of what Foucault calls the "episteme", again not a body of knowledge or a world view, but a set of relations, "the total set of relations that

unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalized systems."[103]

2.3.4 Beyond Archaeology

The Archaeology of Knowledge, therefore, builds on the key ideas that Foucault laid out in his inaugural lecture for the College de France, and in so doing rarefies Foucault's theory of discursive practices towards the polarity of discourse *rather* than *practices*. The strength of the archaeological method lies in its liberation of the word from the tyrannous dualism of the signifier and the signified, and its instatement of a new 'order' of discourse to supersede 'language' and 'parole', as a historically grounded theory of the text.

However, its methodological weakness lies in its claim to supercede all other forms of hermeneutic and sociological analysis. Any account of the discourse of a particular area of epistemology has to consider the intertextual and linguistic relations within the constitution of that epistemological field. It also has to consider the role of the agent within those intertextual relations and the relations between the production and circulation of texts and the material structure of society. The archaeological method does not provide an adequate theory for any of these.

Paradoxically, the two applied studies which gave rise to

the theoretical pronouncements of the archaeological method, did not entirely support Foucault's avowed project of identifying an autonomous level of discourse. Ironically, in their more heterogeneous and - relative to the The Archaeology of Knowledge - hermeneutic approach, Madness and Civilization and Birth of the Clinic actually provided a more convincing account of the construction of the emergence of the psychiatrized and medicalized subject of the nineteenth century than might otherwise have been the case.

As we shall go on to demonstrate in the second half of this thesis, it is necessary to examine on the one hand, the rhetorical and linguistic features of the text, and on the other certain aspects of its institutional context in order to arrive at a more balanced understanding of the practice of modern medical discourse. Foucault was to provide us with some stronger leads towards the analysis of institutional *practices*, along with their implications for the constitution of the subject, in his examination of the 'discontinuities' of penal practices between the seventeenth and nineteenth centuries. These will be the subject of our next chapter.

Notes and References

1. Foucault, M. (1984). The Order of Discourse. In R. Young (Ed.), Untying the Text (pp. 48-78). London: Methuen.

2. Saussure, F. de. (1974). Course in General Linguistics. London: Fontana.

3. Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge, Mass.: MIT Press.

4. Foucault (1981), p.52.

5. Foucault (1981), p.52.

6. Foucault (1981), p.52.

7. Foucault (1981), p.54.

8. Foucault (1981), p.54.

9. Foucault (1981), p.56.

10. Foucault (1981), p.54.

11. Foucault (1981), p.55.

12. In Chapter 4.

13. Bernstein, B. (1990). The social constitution of pedagogic discourse. In Class, Codes and Control, vol. IV (pp.165-219). London: Routledge & Keegan Paul.

14. Foucault (1981), p.56.

15. Foucault (1981), p.67.

16. Foucault, M. (1967). Madness and Civilization. London: Tavistock.

17. Foucault, M. (1973). The Birth of the Clinic. London: Tavistock.

18. Foucault, M. (1972). The Archaeology of Knowledge. London: Tavistock.

19. Foucault, M. (1977). Discipline and Punish. Harmondsworth: Penguin.

20. Foucault, M. (1984). The History of Sexuality: an introduction; (1987). Use of Pleasure; (1988). Care of the Self. Harmondsworth: Penguin.

21. Foucault (1967).

22. Foucault, M. (1972). The Archaeology of Knowledge. London: Tavistock.

23. Foucault (1967), p.40.

24. Foucault (1967), p.55.

25. Foucault (1967), p.57.

26. Foucault (1967), p.68.

27. Foucault (1967), p.75.

28. Foucault (1967), p.83.

29. Foucault (1967), p.84.

30. Foucault (1967), p.236.

31. Foucault (1967), p.245.

32. Foucault (1967), p.250.

33. Foucault (1967), p.257.

34. Foucault (1967), p.260.

35. Foucault (1967), p.265.

36. Foucault (1967), p.269.

37. Foucault (1967), p.270.

38. Foucault (1973).

39. Foucault (1973), p.7.

40. Foucault (1973), p.111.

41. Foucault (1973), p.96.

42. Histoire des phlegmasies chronique, in Foucault (1973), p.136.

43. Foucault (1973), p.186.

44. Foucault (1973), p.16.

45. Foucault (1973), p.22.

46. Foucault (1973), p.29.

47. Foucault (1973), p.80.

48. Foucault (1973), p.77.

49. Foucault (1973), p xix.

50. Foucault (1973), p.xvii.

51. Though not necessarily structuralist.

52. Foucault (1972).

53. Foucault (1972), p.27.

54. Foucault (1972), p.80.

55. Foucault (1972), p.81: Foucault compares "No-one heard" with "It is true that no-one heard" - first could be part of a novel; second a fragment of a dialogue etc.

56. Foucault (1972), p.85.

57. Foucault (1972), p.82-3.

58. Foucault's letter to Searle, 15 May 1979. In Dreyfus, H.L., & Rabinow, P. (1982). Michael Foucault. Beyond Structuralism and Hermeneutics. Brighton: Harvester, p.46.

59. Dreyfus and Rabinow (1982), p.47.

60. Foucault (1972), p.91.

61. Foucault (1972), p.93.

62. Foucault (1972), p.97.

63. Foucault (1972), p.103.

64. Foucault (1972), p.107.

65. Foucault (1972), p.117.

66. Foucault (1972), p.120.

67. Foucault (1972), p.125.

68. Foucault (1972), p.126.

69. Foucault (1972), p.127.

70. Foucault (1972), p.129-30.

71. Foucault (1972), p.131.

72. Foucault (1972), p.44.

73. Foucault (1972), p.45.

74. Foucault (1972), p.45.

75. Foucault (1972), p.45.

76. Foucault (1972), p.46.

77. Foucault (1972), p.46.

78. Foucault (1972), p.50-53.

79. Foucault (1972), p.53.

80. Foucault (1972), p.60.

81. Foucault (1972), p.60.

82. Foucault (1972), p.6

83. Foucault (1972), p.63.

84. Foucault (1972), p.64.

85. Foucault (1972), p.68.

86. Foucault (1972), p.72.

87. Foucault (1972), p.74.

88. Foucault (1972), p.75.

89. Foucault (1972), p.4.

90. Foucault (1972), p.37-8.

91. Foucault (1972), p.27.

92. Foucault (1972), p. 13.

93. Foucault (1972), p.139.

94. Foucault (1972), p.144.

95. Foucault (1972), pp.146-7.

96. Foucault (1972), p.158.

97. Foucault (1972), p.160.

98. Foucault (1972), p.163.

99. Foucault (1972), p.164.

100. Foucault (1972), p.169.

101. Foucault (1972), p.183.

102. Foucault (1972), p.190.

103. Foucault (1972), p.191.

CHAPTER 3

DISCOURSE AND PRACTICES

In Discipline and Punish[1] and The Will to Truth,[2] Foucault examines the emergence of the figure of the delinquent as a criminal subject and the development of sexuality into the psychological 'essence' of the modern subject from the nineteenth century on. In both these analyses, institutional and domestic *practices* are accorded the principle role in the constitution of the criminal and the sexualized subject, over the penological and psychological *text*. We shall examine in particular the way in which the identities of the delinquent and the sexualized subject are constituted by the *practices* of the dominant institutions of the prison, the school, the clinic, the church and the family. From this, we shall be able to posit how similar relations are created and maintained by the institutions of modern medicine, in their production of modes of identity for the medicalized subject.

3.1 Three Modalities of Punishment

Foucault establishes the practices of the modern prison against the background of two forms of punishment that had preceded it. By so doing, he relativizes the punitive mechanisms of power which appear so self-evident in the current phase of capitalist society.

In the feudal period, punishment took the form of a spec-

tacle comprising the torture and dismemberment of the prisoner, preceded by a public confession. However, by the beginning of the eighteenth century, a body of reformers emerged who opposed the excessive violence of monarchial punishment. This was as much out of a concern for its inefficiencies as for humanitarian principles, since a plethora of new crimes against property had grown up in nascent capitalist society which the old modalities of punishment appeared unable to control.

The reformers proposed a shift in the arena of the criminal offence and subsequent punishment so that, instead of being a contest between the sovereign and criminal, it was positioned as part of the new social contract in which the criminal was opposed to all of society. This new form of punishment acquired a measured economy which sought to control potentially excessive penalty by linking them, not to the crime, but to its possible repetition.[3] This system of punishment depended on a mechanics of representation in which the crime invoked a corresponding penalties. This was achieved through a system of unarbitrary punishment linked directly to the circumstances and severity of the crime. The punishment acted as a deterrent by exceeding the possible rewards of the crime, and operated as a set of socially visible signs through the enforcement of community works and prison visits.

In this way the early prison reformers put forward a multiplicity of different punishments, transparent to all the effects of crime and represented by "hundreds of tiny theatres

of punishment".[4] Among these imprisonment was just one of many symbolic forms.

However, between 1810-1830 the manifold "semio-techniques" of the prison reformers became reduced to one dominant disciplinary mechanism, along with deaths and fines: that of punitive imprisonment.[5] The early "reformatories" agreed with the aims of the early reformers in as much as they operated to prevent the repetition of crime and individualized the penalty in terms of its duration, nature and intensity.

But, there were differences. In the first instance, imprisonment did away with the "art of representation" in favour of manipulation through forms of coercion and constraint. But, more importantly, the institution of detention extended the scope of its power to exercise total domination over the inmate at the same time as the sentence was carried out in total secrecy. Autonomy of power to punish, and secrecy, then, became the key characteristics of the system of incarceration which superseded both the excessive violence of the monarchical superpower and the transparent semio-techniques of the "punitive city" envisaged by the reforming jurists at the close of the eighteenth century.

3.2 The Production of the Delinqent

The development of the prison as a singular and universalized form of punishment brought into play a penitential subject, the delinquent, created in the interstices between the prison and the legal code created to service a burgeoning capitalist economy. In this context, the delinquent is not constituted so much out of a constellation of discursive events, but more as an "effect" of power itself.[6]

The "self-evident" character of the nineteenth century prison that prevails to this day was based on its form as a "deprivation of liberty" and its function as an apparatus for the transformation of individuals. If the maintenance of an individual's liberty became the cornerstone of the politico-economic philosophy of the modern age, it was only appropriate that its negation should become the basis of a social penalization that was measured out in units of time as a kind of inverted form of wages. The corrective mechanism of the prison augmented the disciplinary technologies already at work in the schools, factories, and hospitals. In this way, the penal mechanism at once reflected and was isomorphic with the emergent capitalist society of which it was part.

The nineteenth century prison was "an exhaustive disciplinary apparatus",[7] which invoked the same three essential principles that were proposed by the eighteenth century reformers, but executed them with far greater severity. This is to say that the exercise of the effects of power within the

prison was more all-encompassing than was envisaged by the advocates of the "punitive city". First, isolation was used to break up the potentially insurgent society of criminal detainees to give the opportunity for solitary condemnation and repentance of crime and to intensify the effect of disciplinary power on the prisoner. Secondly, work was provided for the prisoner, not for profit or for the learning of useful skills, but in order to constitute "a power relation" and to ensure the submission of the individual within the productive regime.[8] Finally, prison became an instrument for the modulation of the penalty in relation to the potential modification of the individual by the prison apparatus. Thus, the modern prison took up itself the transformation of the individuality of the delinquent. Also, a new autonomous level of passing judgement within the penitentiary was brought into play which was independent of the preceding legislative and juridical levels. A legal "excess" of the "carceral" appeared as opposed to the "juridical".[9]

Within the context of the prison, a new penal animal was, therefore, brought into being distinct from the offender: the "delinquent". This new technico-medical model of carceral apparatus demanded a minute system of "individualizing and permanent domination,"[10] which was effected invisibly, silently and anonymously in order to effect the reform and modification of the prisoner's behaviour. A new area of criminological knowledge was born which brought into focus, not just the relationship between the criminal and his crime, but his en-

tire life and relationship with society. The biographical concept of "delinquent" was fabricated within the autonomous legislative power of the penitentiary, which was then reflected once again at the juridical and legislative levels.[11]

It is the extension of this principle of normalization that brings Foucault to his most far-reaching claim in Discipline and Punish: not that the prisons impose the values of society upon the prisoner, but that society actually articulates the disciplinary and normalizing power of the prison in a never-ending network back upon its members in "the carceral archipelago". Foucault, therefore maintains that "this great carceral network" actually extends to "all the disciplinary mechanisms that function throughout society."[12] In this respect, the institutions of advanced societies (both capitalist and socialist) that are engaged in the production, transmission and reproduction of rational discourses of normalization - such as education, the social sciences and medicine - are essentially maintaining a disciplinary mechanism which pervades modern societies. In this way, the network of power which is effected by the disciplinary mechanism of the prison upon the delinquent is paradigmatic of networks of power which operate within the other disciplinary mechanisms of society.

3.3 Corporeal Discipline

The mechanism of the carceral network of the penal system comprised a whole panoply of disciplinary techniques whose target of disciplinary control was the body. This the Classical Age discovered "as object and target of power"[13] at the level of its very mechanics - "movements, gesture, attitudes, regularity: an infinitesimal power over the active body."[14] Crucial to Foucault's analysis is that power is examined not as a repressive apparatus, but as a force which is constitutive of the subject within the domain which he or she inhabits. This disciplinary power is articulated through the manipulation of four fields of force: space, time, direction of application, and composition of forces.

First, individuals must be enclosed within a disciplinary space. This can be reinforced by further placing the disciplinary subject in a particular spatial position, either by partitioning the space to create disciplinary subgroups or by creating an isolated space for each individual. Each disciplinary "micro-space" has a particular function or set of functions assigned to it. These functions are not assigned as an inherent characteristic of the disciplinary zone, but are defined by their relative place in a spatial classification.

Secondly, the timetable found its way from the monastery into the nineteenth century institutions of social control. With rigorous scheduling the temporal power of the body is broken down into smaller and smaller units in order to define

an "anatomo-chronological scheme of behaviour". Thus every system, be it marching, writing or gymnastics, is related to the overall position of the body to determine its efficiency and speed. Just so, the body is coded in precise relation to the object it manipulates - the rifle, the tool, the machine - in a "coercive link with the apparatus of production."[15] In this way discipline imposes an exhaustive use of time, a positive temporal economy of the body.

Thirdly, the direction of the power/time axis in a disciplinary regime is articulated not just on the body (the 'subject' of discipline) but also on that to which the body is applied (the 'object' of discipline). In this way a model was transferred from military training to pedagogical practice, which broke down the process of training into serial elements to facilitate mastery of a technique or area of knowledge. First, the duration of training was broken down into successive segments. These were then organized according to their progressive gradation of difficulty. Each temporal segment was assigned a specific duration and a form of assessment. Finally, each training programme was assigned individually to participants according to their rank or grade.

Then, finally, disciplinary strategy lies not in its articulation upon the individual body, but upon the composition of its collective forces, be they military or productive. Discipline must "construct a machine whose effect will be maximized by the concerted articulation of the elementary parts of which it is composed."[16] First, the individual body is seen as

an element to be articulated on others. Secondly, the chronological ordering of each disciplinary series must be integrated so as to form an entity. And thirdly, each combination of forces must be able to recognize and respond immediately to a "precise system of command."[17]

Thus, discipline constitutes "an individuality that is endowed with four characteristics":

> it is cellular (by the play of spacial distribution), it is organic (by the coding of activities), it is genetic (by the accumulation of time), it is combinatory (by the composition of forces). And, in doing so it operates four great techniques: it draws up tables, it prescribes movements; it imposes exercises; lastly, in order to obtain the combination of forces, it arranges tactics.[18]

These "tactics" went on to traverse the civil arena. The "four great techniques" initiated three forms of human activity in which individuals acted "both as objects and as instruments of its exercise."[19] These three modalities of coercion were: surveillance, normalization and the examination.

3.4 Tactics of Power

The first tactic of power, disciplinary surveillance, is necessary both to observe the effects of power and to exercise power on others; and is constituted both by an arrangement of architecture and a hierarchization of personnel. The archetypal model of surveillance within the penal system was the infamous model of the Panopticon. Here power is disembodied. Anyone can take over the role of supervisor, but the dispersal of power remains homogeneous and invisible. The dividing up of the prisoners also enables their analyzation and classification within the panoptic system so that experiments could be carried out in order to train and correct individuals or to change their behaviour.

Disciplinary institutions were to spread throughout society in the Classical Age; yet, this extension was only one visible aspect out of various underlying factors. First, the disciplines change from playing a neutralizing, negative role to performing a positive and constitutive one; they increase the effectiveness of the soldier, the productivity of the factory worker, and the socialization of the indigent. Secondly, the process of surveillance spreads outwards from the institutions in a process of social permeation via religious schools and charities, which in addition to their primary functions keep an eye on the moral and sanitary condition of their clients. Thirdly, a centralized police force is created as a state apparatus which oversees the most minute aspects of

everyday life.

The second tactic of disciplinary power is normalization. This is the process of systematic differentiation of hierarchy and rank out of an apparent homogeneity of personnel. Each military unit, school and orphanage operated "a small penal mechanism" in which each member was subject to punishment as a result of any deviation from the network of rules which constitutes the disciplinary regime of the institution. Disciplinary punishment here takes the form of a corrective in the form of further training and exercise. This process of individuation is also made visible by the ostentatious dispensation of badges, privileges etc. to rank the subject according to his abilities. In this respect subjects are distributed according to their aptitudes, but at the same time they are under continual pressure to conform to the same model of behaviour. Within the duality of conformity and identity, the norm is effected.

The third tactic of disciplinary power is the examination, which "combines the techniques of an observing hierarchy and those of a normalizing judgement."[20] First, the examination objectifies the subjects of power by enabling them to be compared, ranked and put in order - a form of visibility. The examination also individuates the subject within a system of documentation, such as hospital records, which provides a framework of describable features for analysis. Thus, each individual is constituted as a "case" - "an object for a branch of knowledge and a hold for a branch of power."[21] This

can either situate the pupil within the field of education, the criminal within the field of criminality or the patient within the field of medicine. Thus, in the same way that the discourse of rationality constitutes the delinquent within the prison, hospital records, case histories and research papers constitute and individuate the medical subject as the object of medical knowledge.[22]

3.5 The Production of the Sexualized Subject.

In the first volume of the History of Sexuality, Foucault focuses his critical trajectory on the emergence of a scientific rationality regarding the realm of sexuality. The institutional base whereby the sexualized subject was formed in the nineteenth century was more pervasive that of the prison. As the discourse of science attempts to rationalize the practice of sex within the family, the "carceral archipelago" extends into the home and into the bedroom.

By the beginning of the nineteenth century sex was incorporated into two discrete epistemological areas: a biology of reproduction and a medicine of sex. The first conformed to the accepted rules of an empirical science, and thereby acted as a spurious guarantee for the second, which operated as a pseudo-science while disguising the very existence of the sex which it pursued. Thus, up to Freud, the learned medical discourse about sex focused on the sexual deviant in order to conceal the underlying normality of sex itself: "the one would partake

of that immense will to knowledge which has sustained the establishment of scientific discourse in the West, whereas the other would derive from a stubborn will to non-knowledge."[23] However, Foucault is unconcerned with whether nineteenth century medical discourse either revealed or evaded the truth about sex; but rather with the ways in which "sex was constituted as a problem of truth". He is interested in "the progressive formation (and also the transformation) of that 'interplay between truth and sex' which is still with us today."[24]

Two aspects of Foucault's study are of immediate interest to our line of inquiry. First, an emergent medico-psychiatry characterized various types of sexual behaviour, and hence the subjects who displayed them, as deviant with regard to a hypostatized norm of sexual behaviour. This anticipates the way in which medical practice designates the patient in relation to certain norms of sickness and health. And, secondly, the discursive characterization of the sexualized subject was transmitted and reproduced by adapting the dialogical discursive form of the confession from an ecclesiastical to a scientific context. This dialogical encounter between the patient and the doctor has maintained as the dominant form of the reproduction and transmission of modern medical discourse.

Just as in the nineteenth century the discourses of criminology produced the figure of the delinquent within the site of the prison in relation to the juridical/penitential norm, so the medicalized discourse of psychiatry produced a

number of sexualized types oriented around a hypostatized norm of sexual behaviour and identity. This medicalization of sex did not take take the form of a set of prohibitions, but was an operation in redefining certain areas of sexuality carried out according to four principles. First, the sexual identity of children became a theme which was relentlessly pursued throughout the Victorian era. Ostensibly oriented around the elimination of onanism, the search ultimately became dependent on it as a support, thereby enabling it to lay down lines of penetration to the very core of pediatric sexuality. Secondly, like the delinquent, the patient and the madman, individuals with abnormal sexual proclivities took on separate identities. Their total life history and physiological makeup became circumscribed by the identity that their sexuality bestowed upon them. Thirdly, the investigation of sexual perversion through empirical procedures, "the medical examination, the psychiatric investigation, the pedagogical report, and family controls"[25] took on a certain perverse gratification of its own. The investigator enjoyed a sense of power reinforced by the pleasure arising from the sexual proclivities that he uncovered. Thus, finally, the social space of the nineteenth century became filled with sexuality. Far from limiting sex to conjugality and monogamy, the framing of the home, the school, the psychiatric institution actually produced an architecture of sexual saturation. Thus four different modalities of power (lines of penetration, specification of individuals, reinforcement of pleasure and power, spacial saturation) articu-

late themselves on four different types of sexuality (child, pervert, investigator, home). In this way nineteenth century bourgeois society brought a particular type of power to bear on the body and on sex which acted by the multiplication of singular sexualities and the intensification of the desire for sexual knowledge.

The principal form of discourse that was adopted within nineteenth century medico-psychiatric practice for producing the truth about sex was the confession. The confession, which had its origins in the medieval Christian penance broadened its sphere of practice to education, justice, psychiatry, the family and the home. Crucially, this dialogical framework has become extended to the encounter between doctor and patient in modern medical practice. "Western man has become a confessing animal."[26] Ostensibly, the confession frees a preexistent truth. Within Foucault's analysis, this truth is often about sex; while in modern medical practice there has been a recent increase in the scope of the psychological aetiologies that are attributed to physiological conditions. Foucault maintains that, in fact, this autochthonous truth of sex does not pre-exist the discursive form of the confession, but is produced at the same time and within the same conditions that trans-forms sex into discourse. These conditions always involve an "other", an authority (doctor, teacher, judge, shrink, father, lover) who requires the confession, intervenes in it and main-tains an asymmetrical relationship of power with the inter-locutor. This relationship is not the product of an essential

psychological need, but arises out of the constitutive discursive form of the confession itself.

Gradually throughout the 19th century, this ritual of confession began to be constituted in scientific terms and takes on a more and more comprehensive role. First, the subject was encouraged to talk about sexuality in the context of different forms of formal clinical examinations. The attribution of a sexual etiology to every ill became justification for an exhaustive exploration of the subject's sexual behaviour. In this, the "other" in the confessional relationship performed the hermeneutic function of deciphering the hidden meaning of sex. Then, finally, the effects of the confession became regarded as therapeutic and were employed within the context of medical interventions. In this way the adaptation of the confession to the rules of scientific discourse functioned as a means of "producing true discourses concerning sex."[27] This sexuality is not the expression of the distortion of an ideology, a system of taboos, or repression; it corresponds to "the functional requirements of a discourse that must produce its truth."[28] Thus the history of sexuality should be studied not as a system of representations which determines the essential features of a "sexuality", but as a history of discourses, a "political economy" of a will to knowledge with its tactics and relations of power which create, maintain and transmit the forms of discourse within which sex, and the sexualized subject, are constituted.

We shall go on in Chapter 6 to explore in more detail

how the confessional form has also become adopted as one of the integral modes for the reproduction and transmission of contemporary medical discourse. As Dreyfus and Rabinow[29] have pointed out, this operates along with the medical examination as corresponding 'subjective' and 'objective' modes in which the identity of the patient is constituted within the medical encounter. We will go on to investigate in more detail how the asymmetry of power between the confessor and the Other, in our case the doctor, is maintained by rhetorical and linguistic features of this form of medical exchange.

3.6 Practices of the Self

The second and third volumes of Michel Foucault's History of Sexuality,[30] see him going well beyond the scope of the introduction to this series of studies. In volume one, he questioned the validity of the notion of sexuality as a historical constant and revealed the role it played in the process of the dissemination of power and disciplinary technology. In The Use of Pleasure,[31] Foucault switches his approach, both in terms of methodology and periodicity.

Although the concept of sexuality only emerged at the beginning of the nineteenth century, it can be linked back to the idea of "desiring man"[32] in the traditional Christian experience of the "flesh". Thus, Foucault undertakes a further reaching historical investigation into the *practices* by which individuals recognize themselves as subjects of desire and ac-

knowledge it as being constitutive of the truth of their being. This is an important change from Foucault's earlier studies of the interplay of "games of truth" and their interaction with power relations. Also, in terms of history, it leads back to the Hellenistic culture of the fourth century B.C. and the Roman civilization at the beginning of our own era, in order to discover the gradual formation of a "hermeneutics of the self".[33]

Foucault sets out to explain why sexual conduct became an ethical concern. In so doing, he asserts that historically sexuality could not be separated off from the other practices whereby men seek "to make their life into a concern that carries certain aesthetic values and meets certain stylistic criteria."[34] Foucault, therefore, does not offer us a conventional account of a system of morality based on interdiction, but instead describes the way in which ethical behaviour is based upon the constitution of the self in the context of certain *practices* in everyday life. These practices arise from the way in which one relates to others, such as one's wife, one's paramour (male or female), and one's servant; as well as the way in which one runs one's household.

There are four aspects of the formation of the relationship of the self to the self (*rapport a soi*) in the construction of oneself as an ethical subject. First, the "ethical substance" is the part of the individual which is the focus for moral conduct, the "material that's going to be worked over by ethics".[35] Secondly, the "mode of subjection" has to

do with the way in which the individual is "invited or incited to recognize their moral obligations".[36] This could be, for instance, revealed through a holy text by divine law; or it could be perceived as a cosmological order or natural law, or a set of rules in keeping with a universal (Kantian) rule of reason; or again it could be an attempt to give one's existence a coherent aesthetic form. The mode of subjection is the point at which the moral code is articulated on the self, and decides the way in which the code will affect it. The third facet of Foucault's ethics concerns the many different ways in which one can work on oneself in order to become an ethical subject. Through this self-forming activity, one attempts to bring oneself into accord with a particular moral code, or to "transform oneself into the ethical subject of one's behaviour". Finally, what Foucault calls the *telos* of the ethical subject represents the kind of person that one wants to become through one moral behaviour; it might be a pure person, an immortal being, a free man, or the master of one's self. It is "a certain mode of being, a mode of being characteristic of the ethical subject".[37]

3.6.1 The Greeks

The ethical substance of sexual experience in the classical era was the *aphrodisia*, or 'pleasures'. This term had far wider connotations for the ancient Greeks than the modern notion of 'sexuality'. The Greeks viewed sexual activity in much

the same way as they viewed eating or drinking, as unremarkable acts of nature that must be carried out to ensure one's personal survival and that of the species. Thus the *aphrodisia* brought together an integrated dynamics of acts, pleasures and desires which were analysed according to the way in which an individual related to their forces. However, these aphrodisiac forces had a tendency towards excess which had to be regulated in the three key areas of ancient Greek life: dietetics, economics and erotics.

Dietetic practices moderated sexual activity because of its associations in antiquity not only with procreation, but also with violence and death. Economic practices focused upon the moderation of sexual relations within the household and fidelity towards the wife in accordance with the civic role of the husband. And Greek erotic practices focused upon the relationship between men and boys, which while broadly accepted in antiquity, presented one central contradiction: the "antinomy of the boy". In their youth, boys had to adopt a passive and hence dishonorable role in their sexual relationships with their older paramours. Yet when they reached maturity, they were expected to perform their full civic duties with the necessary virility and self-mastery. Yet, while the use of the pleasures presented a moral problem for the Greeks, it was not because they possessed an intrinsic evil which must be shunned, but because, being attributed with an extreme acuteness allied to an inferior nature,[38] they must be harnessed and put to appropriate use in the individual

stylization of one's existence.

The way in which the Greeks moderated, regulated and delimited their pleasures constituted the mode of subjection of their sexual conduct. The purpose of this moral reflection was to "work out these conditions and modalities....to define a style" for the use of the pleasures - *chresis aphrodisia.*[39] This was not so much a way of following a code or a set of prescriptions, but rather a method of adjusting one's sexual behaviour according to the three variables of need, time and status, thereby constituting the self within the concrete realization of social practices. First, the aphrodisia should be experienced according to due need in both alimentary and sexual pursuits, not as a form of their negation but as a basis for their enhancement. Thus, immoderation had to be avoided in two forms: satiation which saps the appetite along with the artifice which tends to arise from it. Secondly good timing (*kairos*) had to be adhered to in the use of the pleasures, both inside and outside the household. For example, copulation had to be carried out at the right time of one's life, at the time of the year and at the right time of day in order to obtain a proper distribution of pleasures. Thirdly, the effective use of the pleasures was related to the rank and status of the participant in the city. Moderation in sexual mores was expected particularly from those of high rank, status, and responsibility. In this way the individual of antiquity made himself into an ethical subject "by means of an attitude and a quest that individualized his action, modulated

it, and perhaps even gave him a special brilliance by virtue of the rational and deliberate structure his action manifested."[40]

The ethical work which the Greeks performed upon themselves in order to transform themselves into ethical subjects took the form of self-mastery (*enkrateia*). This mode of asceticism was "the dynamics of domination of oneself by oneself and the effort that this demands".[41] First of all, the citizen had to take up a combative stance against the natural and animalistic forces of the pleasures in case they were overwhelming. These natural pleasures did not constitute an ontologically distinct power; they were still seen as a part of oneself with which one carried out an agonistic battle. This victory over oneself, then, took the form of domination or mastery in order to create a form of stability in the relationship of the self with the self. This agnostic relationship required training and exercise, an askesis, which was regarded as an "integral part....of the practice of a virtuous life".[42]

Finally, the *telos* or mode of being to which the ancient Greeks aspired was a form of freedom (*sophrosyne*). Freedom was characterized for the Greeks both in terms of the relationship between the citizen and the city state, and in terms of the "form of the relationship of the individual with himself".[43] The form this freedom took was "a power that one brought to bear on oneself in the power that one exercised over others".[44] This exercise of moderation signified virility

and masculinity; being a man in relation to oneself involved being in a position of dominance over desire.

The exercise of moderation in the use of pleasures in antiquity was derived from knowledge (*logos*) and a relation with truth. This relationship to the *logos* had three forms: structural - the superiority of reason over desire, instrumental - the practice of restraint in the use of pleasures, and ontological. The ontological relationship was first explored by Plato in Phaedrus,[45] who first describes what will later become known as "spiritual combat" - a movement towards virtue based on knowledge of the self. Yet, while in antiquity "the relation to truth constituted an essential element of moderation";[46] this was not yet established in terms of a hermeneutics of desire, but as an aesthetic of existence derived from certain formal principles in the use of pleasures. In this way, for the Greeks, one's existence was able to maintain a certain order which was a source of beauty and rendered one's life visible and memorable. This order was created and maintained through the social practices which the individual upheld within his public and private life, as husband and citizen in the household and in the city state.

3.6.2 The Romans

The first two centuries of our era saw a marked increase in the concern and attention afforded the role of the sexual pleasures. For the Romans the ethical substance of their moral

concern remained that of the aphrodisiac forces. However, there was a shift in the rationale for their mode of subjection to the expected forms of behaviour in respect of the aphrodisia, accompanied by a corresponding shift in the ethical work required to constitute oneself as an ethical subject. According to Foucault, the intensified problematization of the *aphrodisia* by the Romans arose from "an intensification of the relation to oneself by which one constitutes oneself as the subject of one's acts".[47] The governing principle of *this* practice was that one should "take care of oneself", a theme which went back to the Greeks, but whose scope was broadened in imperial times to attain its culmination amongst the restricted social group able to exercise it.

In The Care of the Self,[48] Foucault describes how this cultivation of the self was intensified within the same three areas of everyday life as the Greeks; but the focus of ethical problematization changed in each one. Dietetic practices included an increased anxiety over the pathologization of the body and a medicalization of the concern with the immoderate use of the pleasures and their potentially dangerous nature. In economic practices the idea of a reciprocity of obligations between the husband and wife was introduced within the household. And in erotic practices the characteristics of love which had hitherto been restricted to the relationship between the young man and his older paramour now became taken up within the marriage relationship. While these changes in focus do not yet constitute a break with the ethics of antiquity,

one can perceive in the different ethical domains certain changes in emphasis and hints of themes that were to be taken up in a later Christian epoch.

The cultivation of the self was not simply a "general attitude",[49] but required a personal commitment of time to a range of different activities. These were discovered by Foucault in the contemporary literary representation of what "constituted, not an exercise in solitude, but a true social practice".[50] This social practice depended, first, on an intensified network of communities, lectures, and spiritual mentors as well as interpersonal friendships and counselling. Already in the development of a social and quasi-pedagogical context for ethical work, it is possible to detect a hint of the practices of the Christian pastoral.

Secondly, the cultivation of the self was tied in very closely to medical thought and practice. The cure of bodily ills was interwoven with a "therapeutics of the soul"; and a whole set of medical metaphors was deployed to describe procedures for the care of the soul. The increased role of medicine brought about an increased attention to the body, not so much in terms of physical exercise, but upon the fragility of the link between the body and the soul, which led to the acknowledgement of an apparently perpetual threat from illness. Thus "the accent is placed more and more readily on the weakness of the individual, on his frailty, on his need to flee, to escape, to protect and shelter himself."[51]

Thirdly, although the mode of subjection for the citizens

of Rome is still defined in relation to an aesthetic of existence, this refers increasingly to "universal principles of nature or reasons, which everyone must observe in the same way".[52] The question of truth becomes more important in the formation of the ethical subject and there emerged a whole topography of routes to self-knowledge - exercises in abstention, reviews of personal behaviour, and screening of mental representations - in order to carry out the requisite *askesis*.

Finally, the aim of this ethical activity changed from antiquity. The objective for the Greeks was to attain a form of pleasure, *voluptas*, constituted by the forces of desire external to oneself which one sought to control. For the Romans the pleasure arising from ethical activity stemmed from *gaudium* or *laetitia*, a reflective pleasure which arises from a source embodied within one's self rather than from overcoming an external force. Here one can already see the beginnings of a move towards the relocation of the 'truth' of the pleasures from the acts themselves to a reflection upon them.

There was also a corresponding shift in the metaphoric representation of the form of self-control from Greek to Roman times. The concept of self-mastery that characterized the form of the ethical work for the Greeks was superseded by the juridical model of possession: "one 'belongs to himself', one is 'his own master'...,one is answerable only to oneself, one is *sui juris;* one exercises over oneself and authority that nothing limits or threatens; one holds the *potestas sui*".[53]

For the Romans the juridical concept of self-possession superseded the virile concept of self-mastery. Thus, in this shift from Hellenic to Roman society: ".....one can already see how the question of evil begins to work upon the ancient theme of force, how the question of law begins to modify the theme of art and techne, and how the question of truth and the principle of self-knowledge evolve within ascetic practices."[54]

3.7 Discursive Practices and Ideology

Therefore, by the end of his life, Foucault had reinstated the centrality of the role of *practices* within his theory of *discourse* to make it indeed a unitary theory of *discursive practice*, in which the text is seen as having a role to play which is dialectically related either to *institutional practices* as exemplified by those of the nineteenth century penitentiary or confessional; or by *personal practices* as exemplified by the dietetic, economic and erotic practices of the hellenistic and imperial eras.

Yet, this theory of discursive practice is not antithetical to a theory of ideology laid out in Chapter 1; although it does entail a radical re-orientation. For Foucault's theory, in particular that of the genealogical description of institutions, is still a theory of domination. It is a theory in which the subject, in our case the medicalized subject, is constituted in the matrix of relations of power generated by

the institutions of medicine and the texts which they produce.

In the next chapter we will examine how Basil Bernstein takes up some of the themes laid down by Michel Foucault, but offers us a more structured account of the way in which the texts of an epistemological field are produced, transmitted and reproduced. It is still maintained, however, that these are texts which have, to use Giddens' phrase once more, an "ideological effect", an ideological effect upon the subject.

Notes and References

1. Foucault, M. (1977). Discipline and Punish. London: Penguin.

2. Foucault, M. (1984). The History of Sexuality: an introduction. London: Penguin.

3. Foucault (1977), p.102.

4. Foucault (1977), p.114.

5. Foucault (1977), p.115.

6. Gordon, C. (Ed.). (1980). Power/Knowledge. Brighton: Harvester Press.

7. Foucault (1977), p.235.

8. Foucault (1977), p.243.

9. Foucault (1977), p.243.

10. Foucault (1977), p.250.

11. Foucault (1977), p.253.

12. Foucault (1977), p.277.

13. Foucault (1977), p.136.

14. Foucault (1977), p.137.

15. Foucault (1977), p.153.

16. Foucault (1977), p.164.

17. Foucault (1977), p.166.

18. Foucault (1977), p.167.

19. Foucault (1977), p.170.

20. Foucault (1977), p.184.

21. Foucault (1977), p.191.

22. The way in which the patient is individualized discursively as a case is taken up later in Chapter 8.

23. Foucault (1984), p.55.

24. Foucault (1984), p.56-7.

25. Foucault (1984), p.45.

26. Foucault (1984), p.59.

27. Foucault (1984), p.67.

28. Foucault (1984), p.68.

29. Dreyfus, H.L., & Rabinow, P. (1982). Michael Foucault. Beyond Structuralism and Hermeneutics. Brighton: Harvester.

30. Foucault, M. (1987). Use of Pleasure; (1988). Care of the Self. Harmondsworth: Penguin.

31. Foucault, M. (1987). The Use of Pleasure. Harmondsworth: Penguin.

32. Foucault (1985), p.5.

33. Foucault (1985), p.6.

34. Foucault (1985), p.11.

35. Paul Rabinow, *The Foucault Reader* (London: Penguin, 1984), p. 353.

36. Paul Rabinow (1984), p.353.

37. Michel Foucault. (1984), p.28.

38. Michel Foucault (1987), p.48-49.

39. Michel Foucault (1987), p.53.

40. Michel Foucault (1987), p.62.

41. Michel Foucault (1987), p.65.

42. Michel Foucault (1987), p.64.

43. Michel Foucault (1987), p.79.

44. Michel Foucault (1987), p.80.

45. Michel Foucault (1987), p.88.

46. Michel Foucault (1987), p.89.

47. Michel Foucault, (1988), p.41.

48. Foucault, M. (1988). The Care of the Self. Harmondsworth: Penguin.

49. Michel Foucault, (1988), p.50.

50. Michel Foucault, (1988), p.51.

51. Michel Foucault, (1988), p.67.

52. Michel Foucault, (1988), p.67.

53. Michel Foucault, (1988), p.65.

54. Michel Foucault, (1988), p.68.

CHAPTER 4

THE ENCODING OF MEDICAL KNOWLEDGE

In the last chapter we examined Michel Foucault's assertion that the discourses of the human sciences, far from being a source of freedom and enlightenment, are in fact a means of inscribing the mechanisms of power upon the subject, and in particular upon the subject's body. However, Foucault's concept of discourse still operates at a very broad level, and his analyses tend to deal with each of the institutions of the human sciences as essentially homogeneous, epitomized by unitary concepts such as the "clinic" and the "prison". In order to ground Foucault's theory of *discursive practices* more securely, we will go on in this chapter to analyse with greater precision the social structure of the institutional basis for the production of discourse of the medical sciences: Foucault's "tertiary spatialization" of discourse.[1] In so doing we will take a model initially devised in the context of the construction of discourse in the field of education, and explore the possibility of a fit between it and the institutional conditions for the construction of discourse in the field of medicine. This will also prepare a model for the institutional contexts which will underlie the analysis of the specifically linguistic formation of medical discourse in the next chapter.

Basil Bernstein's paper, The Social Construction of Pedagogic Discourse,[2] originally published in 1986, offers two

criticisms of current theories of the reproduction of culture, and in particular those concerned with the field of education. Bernstein's first criticism is that theories of the production, reproduction and transformation of culture only analyse specialized discourses as the "voice" for relations external to the discourses themselves, such as class, gender and race. What is absent from such analyses is a description of the actual operational relations of the forms of discourse themselves. This makes such theories weak in the specific description of the agencies of the forms of discourse and the very process of communication and transmission with which they are concerned.

Secondly, few theories of the production and reproduction of culture attempt to trace a relationship between 'macro' aspects of social order and 'micro' aspects of individual consciousness. That is to say, in the field of education few analyses have successfully described the inter-relatedness of the State, the education system, the school and the classroom, and the consciousness of the pupil in order to dissolve the classical distinction between individual and society.

However, added to this, one can also say that theories of the reproduction of culture tend to be limited to one domain - be it education, medicine or religion - where the analyses take on different specialized forms according to the unique conditions of different disciplines and the specific interests of the inquirer. Thus, critical theory becomes subject to the constraints of the diversification of fields of knowledge

within the field of symbolic control. This diversification itself reflects the formal aspects of the division of labour in the field of production.

Thus, very few theories of the production and reproduction of culture have emerged with the potential for mapping the relations of power, knowledge and subjectivity across disciplines, while effectively linking the 'macro' operation of society to the 'micro' aspects of individual consciousness and offering an effective description of the discursive "relay" for these relations.

Basil Bernstein's structural model of 'pedagogic discourse' appears to provide a generalizable description of the relationship between power, knowledge and the consciousness of the subject in modern capitalist society, and identifies and addresses the two areas of problematization above. His theory offers a finely wrought description of relationship between 'macro' and 'micro' levels of discourse; i.e. between descriptions at the levels of society and of individual consciousness. It also explicitly focuses upon *the vehicle of the production, reproduction and transformation of culture rather than upon the content of its message*. Although the application of this model has as of yet been confined to the field of education, Bernstein does invite its extension to other areas:

> A theory of cultural resistance/reproduction, ideally, should handle more than the school; it should be able to handle hospitals, the relationship between doctor and patient, be-

> tween social worker and client, probation officer and probationer.[3]

In this chapter we are going to look at whether Bernstein's model of pedagogic discourse can be used to provide a description of the production, reproduction and transformation of discourse within the field of medicine.

It should be possible, using this model, to analyse with a high degree of specificity the relationships between the specialization of different agencies within the field of medicine and the specialization of different modes of medical discourse, as well as some of the implications for the construction of the individual consciousness of the subject. This relationship is played out in the bureaucratized social structures where the sites for the control of the production, reproduction and transmission of culture in the field of medicine and the human sciences are located. If we discover that the structural contours of a bureaucratized socialization into medical knowledge are essentially homologous with those in the field of education, we can posit that equivalent structural forms operate within other fields of specialized discourse in modern capitalist society. The analysis may then be taken one stage further to say that the defining feature of the diverse forms of the 'division of discourse' generated in late twentieth century capitalism is not the ostensibly scientific and rational nature of knowledge but rather the bureaucratized forms of its production, transmission, and ac-

quisition. It is within the forms taken by the bureaucratization of this knowledge, or 'knowledges,' that lie crucial sites of 'power' as these discourses are articulated upon the subject. However, therein lies also the potential site for resistance, transformation, and the eventual supercession of these forms.

The condition for the production, reproduction, and transformation of culture is posited as being the "pedagogic device".[4] The "intrinsic grammar" of the pedagogic device is provided by the hierarchical ordering of its distributive rules, recontextualizing rules and rules of evaluation. These rules are arranged hierarchically:

> ....in the sense that the nature of the distributive rules regulates the recontextualizing rules, which in turn regulate the rules of evaluation. These distributive rules regulate the fundamental relation between power, social groups, forms of consciousness and practice, and their reproduction and production. The recontextualization rules regulate the construction of specific pedagogic discourse. The rules of evaluation are constituted in pedagogic practice.[5]

In this way the pedagogic device generates a "symbolic ruler of consciousness". Yet, this pedagogic device with its intrinsic orderings is not unique to the field of education, nor is the field of education necessarily the principal arena for the articulation of the pedagogic device upon the production,

reproduction and transmission of culture. In fact, the very power of the pedagogic device lies in its ability to reproduce within the context of multiple fields of knowledge and in so doing to provide a potentially universal "ruler of consciousness". In fact there is no way of thinking in a field that exists outside, beyond or around the pedagogic device; it is only possible for the contradictions within the device itself to yield a potential for the "yet to be thought".[6]

4.1 Distributive Rules

Distributive rules govern the relationship between "power, social groups, and forms of consciousness".[7] The distributive rules operate along two axes. First, they maintain a differentiation between the specialization of two fundamental orders of meanings. These two orders of meaning are variously interpreted, after Durkheim,[8] as the thinkable and the unthinkable, the material and the transcendent, the esoteric and the mundane. Secondly, these rules govern the distribution of these two different orders of meaning to different social groups. In this way the pedagogic device controls the specialization and distribution of forms of consciousness and practice within an epistemological field, and within society. Furthermore, the role of the pedagogic device in the distribution of knowledge and forms of consciousness is linked to the social distribution of power: "... between power and knowledge, and knowledge and forms of consciousness, is

always the *pedagogic device*".[9] This is because, both practically and symbolically, the unthinkable, transcendent or esoteric order of meaning is invested with power. Thus the social group which can think the unthinkable is able to wield power over the social group which cannot think the unthinkable.

There are a number of areas of social life over which the empowered social group within the pedagogic device has control. Today the ability to think the "unthinkable" within the field of medicine invests the agent, first and foremost, with the power over life and death. This has been a crucial site of power throughout human history. However, it is only in contemporary capitalist society that the control over life and death has been invested with a practical as well as symbolic power. In primitive and pre-industrial societies, this power was invested in a religious hierarchy who maintained a symbolic control over life and death by their imaginary power to perpetuate life after the physical death of the body. In certain instances psychosomatic cures carried out by an agent of the religious hierarchy could actualize this symbolic power; but generally it operated within the symbolic realm. This form of control became particularly strongly institutionalized within the Christian era. However, the advent of scientific rationality and the development of medical technology has moved this domain out of the hands of the priests into the hands of the doctors. Furthermore, it has moved the power over life and death from the realm of symbolic control to the realm

of both symbolic and practical control. While a Vatican committee can debate at what point a fertilized egg becomes a human being, it is a committee of doctors which decides the point in pregnancy after which it is no longer practicable for the gynecologist to evacuate the foetus from the womb.

Coterminous with the ability to think the "unthinkable" and the power over life and death is the distribution of wealth between different social groups and institutions. The social group that can think the unthinkable and, in particular, has control over the site of the unthinkable also accrues wealth within society. This does not necessarily mean the individual acquisition of wealth, although in the case, say, of a brain surgeon working in the U.S.A. this is certainly true. But there have also been some very poor priests and medical researchers. It is more true to say that the institutions that wield control over life and death accrue wealth. Hence the Church was able to accrue immense wealth even up until the end of the nineteenth century; and there has been a huge transfer of State resources to medical research and facilities in the twentieth, particularly in the West since 1945. Despite the current realignment of medical funding from the public to the private sector, it is still very possible that the proposed corporate site of medicine will have the potential to accrue far more capital than it ever could as an agency of the state.

A third area of the distribution of power within the field of medicine lies in the differential distribution of

which social groups control the means of access to the "unthinkable". That is to say, particular interest groups accumulate and exercise power within the medical field (as in any epistemological field) through their membership of editorial and examination boards and involvement in committees which control the allocation of resources such as research grants. This power is used to institute and maintain systems which elaborately screen future members of these groups who will eventually be recruited to perpetuate their interests. The most obvious manifestation of this screening mechanism is the gruelling panoply of exams and examination boards to which a candidate for the medical profession has to be subjected before he or she can assume the mantle of doctor, a seven year degree programme, one year of housework of killing proper-tions, as well as innumerable postgraduate qualifications which can extend throughout a professional life. In general, it can be said that the longer and more intensive the training programme for a particular profession, the more power accrues to that profession within a society.

However, there is a more potent control over the protection of the unthinkable than the explicit scrutinizing of candidates for the medical profession. This lies in a differentiation within the potentiality of the language of medicine itself, and its uneven distribution between different social groups.

Bernstein's distinction between elaborated and restricted codes[10] within the field of education holds good also within

the field of medicine - and is a crucial factor in the constitution of a differential distribution of power within every profession in contemporary capitalist society. Here,

> ...elaborated codes are the media for thinking the "unthinkable", the "impossible", because the meanings they give rise to go beyond local space, time, context and embed and relate the latter to transcendental space, time, context.[11]

The elaborated codes within the medical sciences are maintained and transmitted by the nexus of texts which operate in the construction of medical knowledge.

The codes themselves operate at different levels within medical texts. For now, we will identify three levels. At a 'macro' level, the construction of the identity of the medical text per se constitutes one formation of the elaborated code as medical texts take on different functions and become differentiated into different specialized forms or 'genres'. The medical textbook, the medical research report and the medical case history constitute key modalities of the code, as well as the highly structured oral text of the medical interview. Thus the medical professional is socialized into recognizing and manipulating different texts according to his or her position within the professional hierarchy. In this way, different subgroups are permitted access to different texts at different degrees of involvement according to their profes-

sional position. These degrees of involvement fall into three categories: writer, reader and zero involvement. The subject of medical knowledge, the patient, is not expected to be able to control the medical text; his or her position is one of zero involvement, or exclusion.

Secondly, in terms of the level of the representational function of the language within the text, the use of specialized medical vocabulary and grammar also constitutes a form of the elaborated code. Examples of this within medicine are the use of a latinate nomenclature for medical conditions and parts of the body; and the substitution of nominalized verb forms for the representation of scientific processes within formal medical writing.

A third level at which the elaborated code functions within the medical text is with regard to the differential positioning of the 'encoder' and 'decoder' of the text. The language of each text operates to differentially position both participants in an exchange of speech. This operates within both written and oral texts, but of particular significance is the differential positioning of the doctor and patient within the medical interview. Here the paradigmatic utterance of the doctor is one of dominance - question and command; while the paradigmatic utterance of the patient is one of subordination - answer and assent. In this way the distributive rules of the pedagogic device operate through the texts which constitute medical discourse to position different social groups with regard to what can be thought and what cannot be thought,

which social group is empowered and which social group is subjected to power.

Distributive rules within the pedagogic device control the distribution of elaborated codes which constitute the media to think the unthinkable to different social groups. In its crudest form (thinking/not thinking), these rules distinguish who is empowered as a member of a profession and who is not. However, within the medical profession access to the unthinkable is itself hierarchized. There are degrees of "thinking the unthinkable" which differentially position subgroups within the medical profession. One of the roles which is currently problematic within the profession is the role of the general practitioner, as it is with that of the teacher in the field of education. While the G.P. is still empowered in his social relations with the patient through his symbolic command of the elaborated code, his role is becoming increasingly downgraded by comparison with that of the consultant.[12] Thus, ultimately, it is the professional subgroup that actually produces the new knowledge within an epistemological field which is in a position of dominance. In medicine the position of the consultant/researcher remains unassailable, while that of any professional subgroup not directly involved in the production of medical knowledge is at risk in the current episode of capitalism. The role of the reproduction and transmission of medical knowledge which is traditionally carried out by the G.P. - the prescription of drugs and the issuance of the doctor's certificate - may now become

carried out through the division of less skilled labour, or gradually in many areas by computer.

4.2 Recontextualizing Rules

We have seen that within a discursive field there are two orders of meaning: the thinkable and the unthinkable. Distributive rules identify and assign which groups transmit certain orders of meanings and which groups receive certain orders of meanings. In this way pedagogic subjects are selected and created. Bernstein identifies two different discourses which operate within a discursive field. One is a "discourse of competence" which transmits and interrelates specialized competences. This Bernstein calls "instructional discourse". The other is a discourse which creates specialized order, relations and identity. This is called "regulative discourse".[13]

Pedagogic discourse is the rule which governs the embedding of an instructional discourse, a discourse of competence, into a regulative discourse. This regulative discourse operates so that the discourse of social order always dominates the discourse of competence.

Pedagogic discourse is a principle for appropriating other discourses and bringing them into a special relation with each other for the purposes of their selective transmission and acquisition.[14]

The concept of recontextualization, then, means very literally that a discourse is stripped of its original context and repositioned according to the principles of the pedagogic device. In medicine this may apply to the transformation of an original research paper into a medical textbook, or the pedagogization of a practical skill, such as the incorporation of a first aid procedure into a nursing course. As a discourse is removed from its original context, it is transformed and repositioned according to the principle of pedagogic discourse, which is linked to the dominant principles of society. Thus the process of recontextualization is an ideological process which "transforms...an actual practice to a virtual or imaginary practice".[15] Thus, while certain social principles are evident within medical discourse, e.g. the guardianship of who may or may not work (issuing the sick note) and the control of sexual relations (e.g. prescribing or withholding contraception from minors), these are essentially ideological constructs. The location and transformation of these concerns within medical discourse is simply one way in which the respective discourses of competence are regulated.

4.2.1 Production of Medical Discourse

The primary context for the "practice and organization" of discourse, be it in the field of education or the field of medicine, deals with the developing and positioning of a text. This process is referred to as "primary contextualization". Primary contextualization "refers to the process whereby 'new' ideas are selectively created, modified, or changed".[16] It creates the 'intellectual field' of a particular epistemological system, where new knowledge is produced rather than reproduced. In the fields of both medicine and education this is dependent upon the allocation of funding from both the private and the State sectors to research bodies. Over the past thirty years, the private sector has been more dominant within the field of medicine compared to that of education due to the burgeoning financial impact of the research, development and production of pharmacological products by privately owned companies. Primary contextualization within the medical field can be located in two paradigmatic sites: the research laboratory where experimental research is undertaken; and the computer terminal where epidemiological analysis takes place. These sites may be owned either by the state or by the private sector - although there is the probability of considerable crossover and joint investment in medical research.

However, in medicine as in education[17] the product remains the same, regardless of the orientation of the producing agency vis-a-vis the State or the private sector. This is

due to the fact that the ordering of the pedagogic device remains constant across ideological and political shifts in society, both historical and geographical. Furthermore, the nature of the product in medicine has as important a function as a means of symbolic control within society as it does as a physical resource. Various accounts have been offered of the process whereby the intellectual field of scientific and biomedical research is created in its primary context. In one paper a striking description is given of how the end product of laboratory life is regarded, not as the empirical findings of the research, but as the production of good copy. Using the analogy of a factory production line, Latour and Woolgar describe the generation of scientific research papers thus: "...far from being *reports* of what has been produced in a factory, members (of the laboratory) take these papers to be the *product* of their unusual factory".[18] Just so, the paradigmatic product of the primary contextualization of experimental research in medicine knowledge may be regarded as the text, the medical research paper, rather than the next miracle cure. Thus, the primary contextualization of medical knowledge is a vital field for the production of texts which operate in the field of symbolic control within contemporary societies regardless of changes and differences in their political structures.

4.2.2 Reproduction of Medical Discourse

The second context which Bernstein identifies in his model of pedagogic discourse is the context of the "selective reproduction" of discourse. "This context structures the *field of reproduction*"[19] Bernstein goes on within educational discourse to distinguish between the four levels of tertiary, secondary, primary and preschool, with the agencies within each level being specialized to varying degrees. Within the field of medical discourse, the issues at first sight appear to be more clearcut: there are two levels within its secondary context, each featuring a particular category of agent. The site of the first level is the clinic or health centre. This site contains a low degree of specialization, as indicated by the nomenclature of its agent, the general practitioner. The site of the second level is the hospital. This site contains a high degree of specialization, as also indicated by the nomenclature of its principal agent, the medical consultant.

Bernstein's model of the recontextualizing rules enables us for our purposes to situate different types of text within the operation of pedagogic discourse. The paradigmatic text of the secondary level of medical discourse is the medical interview. In its classic form, this is the text of the dialogic encounter between doctor and patient. However, the text of the interview is no longer a unitary text; and its site is no longer confined to the two levels of the secondary outlined above. A dominant alternative modality of interview has

emerged from the combination of epidemiological and computer driven research methodologies. This is the epidemiological survey whose text is the medical questionnaire. The advent of the questionnaire as a dominant mode of reproduction of medical discourse has led to a polarization of the medical interview into two modalities. Influenced by the impact of psychotherapy upon techniques of general practice, there has been a shift in the construction of the dialogic encounter between doctor and patient from a more closed, 'doctor-centred' type of interview to a more open, 'patient-centred' type of interview.

In contrast with this, the typical mode of interview within the epidemiological survey is the questionnaire. There is now a considerable technology devoted to refining the content of the survey questionnaire to elicit only the type of response from the interviewee required by the questioner. Thus, in this genre there is a preference for the 'closed' rather than the 'open' question to enable the researcher to control the data which is being collected. This is in marked contrast to the 'open' questions used in the 'patient-centred' interview. Of these two types, only the doctor-patient interview is truly dialogic.

4.2.3 Recontextualization of Medical Discourse

The third reordering within the field of medical discourse "is concerned with the movement of texts from the primary context of discursive production to the secondary context of discursive reproduction".[20] This context Bernstein calls the "recontextualizing context" and the fields created by this context are called the "recontextualizing fields". These fields are created within the recontextualizing rules: the official pedagogic recontextualizing field and the pedagogic recontextualizing field. Each of these have a number of "subsets", which operate as their agencies.

Official pedagogic recontextualizing field. The official pedagogic recontextualizing field includes "departments and subagencies of the State".[21]

> This field will usually have a core of officials drawn from official pedagogic agencies of the State and consultants, advisers, etc., drawn from the educational system and from the economic field and the field of symbolic control.[22]

In the case of medical discourse this ranges from the government ministry to the local health authorities. It is at this site that policy making decisions are made regarding the production and distribution of texts within the various levels of the medical field, which is influenced hugely by the selective allocation of State resources at a national and a local

level. This field, therefore, has a crucial role to play in deciding in the interests of which group a particular piece of research is going to be carried out.

Pedagogic recontextualizing field. Bernstein situates one area from the primary level of tertiary education within the pedagogic recontextualizing field of education. These are the departments of education within universities and polytechnics, along with the colleges of education. In this respect, within the field of medicine, we would situate the agencies which deal with the education of new agents of medical knowledge within its recontextualizing field. Thus, the medical school would be included within the pedagogic recontextualizing field rather than the primary field.

There are three paradigmatic texts which operate within the medical school, the first subset of the pedagogic recontextualizing field. These are the curriculum, the lecture and the medical textbook. The curriculum within the medical school is crucially related to the different areas of specialization within the secondary level of the primary context of the field of medical discourse. However, within the recontextualizing field these areas are linked to rules which relate the content to a distribution which is age-related. These rules, the evaluative rules, we will look at in greater depth in their operation within the primary context. The curriculum governs the selective distribution, the classification and framing,[23] of the content of the pedagogic materials (lecture and

textbook) used to educate the agents of the field.

The textbook is generally constructed as the end-product of a series of lecture notes and therefore we will not treat the two forms as separate texts in this analysis. The textbook represents the selection, reproduction and condensing of medical knowledge from the primary context of the production of knowledge. In particular, it is the selection and collation of research in a particular area about which there has been deemed to be a certain consensus. And in this process of selection the development of a certain consensus, a certain 'paradigm',[24] of knowledge is reinforced.

The second subset within the pedagogic recontextualizing field includes the 'specialized media'[25] within the field of medicine, and in particular the medical journals and publishing houses "together with their readers and advisors".[26] Let us, however, be more specific about how this subset of the pedagogic recontextualizing field might be distinguished from the product of the primary field in medicine. We have already ascertained that the primary field produces the research paper; however, the research paper is selected for publishing, is edited and bound within a volume along with other papers with which a conceptual relationship is established according to certain criteria. These criteria are the same criteria which are laid out within the text of the medical curriculum. This positions a certain grouping of disciplines and sets of knowledge into related clusters and assigns them on a spectrum from the general to the highly specialized, from the British

Medical Journal to the Journal of Nuclear Medicine. Moreover, the publishing houses, along with their army of editors and referees and advisors maintain an unformalized and apparently "freely accepted consensus"[27] as to what constitutes medical knowledge, and what does not. Thus, the system of refereeing papers for scientific journals constitutes an ad hoc way of monitoring that papers which get published adhere to the accepted paradigm of what constitutes medical knowledge and those which do not are rejected. In this way, the consensus as to what constitutes medical knowledge functions as a self-reinforcing, 'reflexive' system.

The third, and not totally unrelated, subset of the pedagogic recontextualizing field is the institutionalized indexing of medical knowledge. There are several indexes to the medical literature, which are used globally but which more or less exclusively originate from the U.S.A. Of these, the most widely used are the Index Medicus and the Science Citation Index. The state funded Index Medicus and its allied computer databases, MEDLARS and MEDLINE, are centred in the U.S. National Library of Medicine, which only evolved from the Armed Forces Medical Library as recently as 1956. It cites, by subject and author, articles from 2,600 purely biomedical periodicals. A committee of 'experts' from various biomedical fields selects citations to articles published in those periodicals that are "judged to be of greatest potential use to the international community".[28]

By way of contrast, the Science Citation Index (SCI) was

instituted privately by the Institute for Scientific Information. It covers a broader field: "every *significant* journal and every branch of science and medicine".[29] Each year it covers materials from almost 3,000 journals and over 35,000 chapters from nearly 1,200 multi-authored books. The selection process for the SCI is more objective than that of the Index Medicus, being based on an ongoing analysis of the citations of the journals in the database.

The process of recontextualization of periodicals and articles in the biomedical field effected by the Index Medicus and the SCI actually extends as far as the terminology and concepts used in the biomedical field. Index Medicus's Medical Subject Headings (MESH) and the SCI's Permuterm Subject Index (PSI) constitute powerful boundaries to the actual organization and maintenance of a hierarchy of concepts used in this epistemological field, which constitutes the threshold of the 'thinkable'. Thus both the Index Medicus and the SCI are global tools which maintain a selection and reproduction of medical knowledge which are related to the dominant principles of the hegemonic Anglo-American scientific culture.

These three modalities of text - curriculum, textbook and biomedical index - display different orders of relocation within the pedagogic recontextualizing field: the curriculum allocates different areas of knowledge to different temporal stages of the pedagogic process; the textbook translates the esoteric, "unthinkable" knowledge into the "thinkable" knowledge of common sense; and the biomedical index marks the

outer limits of what is to be counted as a medical text and what is not. As a text from the primary context is appropriated by the recontextualizing field, it undergoes a process of transformation. "The form of this transformation is regulated by a principle of *decontextualizing*. This process ensures that the text is no longer the same text".[30] In this respect, the curriculum and the medical index serve to reposition and refocus a text in relation to other texts; while the medical textbook, in accordance with Bernstein's schema,[31] modifies primary texts by "selection, simplification, condensation and elaboration". This regulation of texts by the decontextualizing principle is governed in turn by ideological principles which relate back to the dominant principles of society, largely under the aegis of the relevant departments of the State. However, this intertextual transformation and relocation is only the first of a two stage repositioning of texts within the pedagogic process. This first is an essentially intertextual process, while the second is a pedagogic process, as "the transformation of the transformed text...becomes active in the process of the reproduction of the acquirers".[32]

4.3 Evaluative Rules

The third feature of the grammar of the pedagogic device, its "rules of evaluation", transforms the categories of time, text and space into age, content and context to define the conditions for acquisition, evaluation and transmission within pedagogic discourse. This framework demonstrates a transformation of universal concepts into concepts of pedagogic practice. These constitute the three levels operational within the recontextualizing rules, which selectively embed an instructional discourse within a regulative discourse, thereby producing "a specialization of time, text (or its metaphoric equivalent), and space and the conditions of the interrelation".[33] *This gives us our first, universal, set of relations*:

Time <-------> Text <-------> Space

We must now view the extension of this set of relations within the field of medicine in the light of Bernstein's development of the model within the field of education. Bernstein highlights the factor of time in his transformation of these universals into the second stage of his model: "...specialization of, and differentiation within, time are integral to pedagogic discourse".[34]

Time is rendered immanent in pedagogic discourse through its translation into age:

Age <-------> Content <-------> Context

Now, medicine is concerned with the normalization of life in its totality; and has thus defined a set of temporal criteria to which the body is expected to conform over clearly demarcated periods of its physiological development.[35] In this respect a biomedical periodicity can be seen as defined for the body, just as the punctuation of age-related acquisition is defined within the school. However, time is not necessarily the only category that we would wish to highlight in the medical field. For medicine also displays a specialization of space, as does education, to the sites of its transmission - the clinic, the hospital and the medical school.[36] In this way space is transformed into context.

It is, however, at the third level that the most interesting comparison can be made between the pedagogic practices of education and medicine. Thus Bernstein posits for education:

Acquisition <-------> Evaluation <-------> Transmission

However, the 'text' of medicine is represented by the totality of medical knowledge as embodied in medical discourse which translates into the actual 'content' of medical knowledge itself, that medical 'gaze' which is focused on the relationship between a disease and the body. In this way the medical professional can identify and name those abnormalities which

may be controlled and those which may not. Any set of pathogens and the human body are discrete entities; it is only at the point where the pathogens enter the body that there is the transformation: pathogens + body = illness. The definition of an illness, then, is the idealization of a relationship between the pathogens and the body based on an interpretation of the signs of the disease and of the symptoms of the patient.

Medicine is a hermeneutic art; and the act of diagnosis is an interpretative act based on the body of medical knowledge which synthesizes the perceptual powers and manual dexterity of the doctor with the consensual traditions of medical thought. Thus, while in educational discourse the outcome of the professional gaze is evaluation, in medicine it is the appraisal of the patient. Both fields utilize these respective outcomes to decide upon the allocation of state resources as a form of management in action. Thus, if "the key to pedagogic practice" in education is "continuous evaluation",[37] then the principle of a medicalized society has to be lifelong medical appraisal. "Lifelong medical supervision...turns life into a series of risks, each calling for tutelage of a special kind".[38]

Appraisal, then, is the hermeneutic relation between a disease and the body which designates the condition of the patient; and indeed constitutes the patient qua patient. This, constitutes the 'facts' of the case according to the empirical criteria of the medical sciences. The designation of the condition of the patient determines what treatment he or she will

be allocated. In this respect the patient becomes classified according to what medical resources will be allocated to him or to her. Thus, while evaluation relates transmission to acquisition in education, in medicine appraisal relates the designation of the patient's condition (generally as the manifestation of time within the biological lifespan of the patient) to allocation (which determines a correspondence of medical resources such as either the offering of goods and services in the form of medication, technical intervention in the form of surgery, or medical discharge). We would therefore posit the third level of the medical pedagogic practice as being:

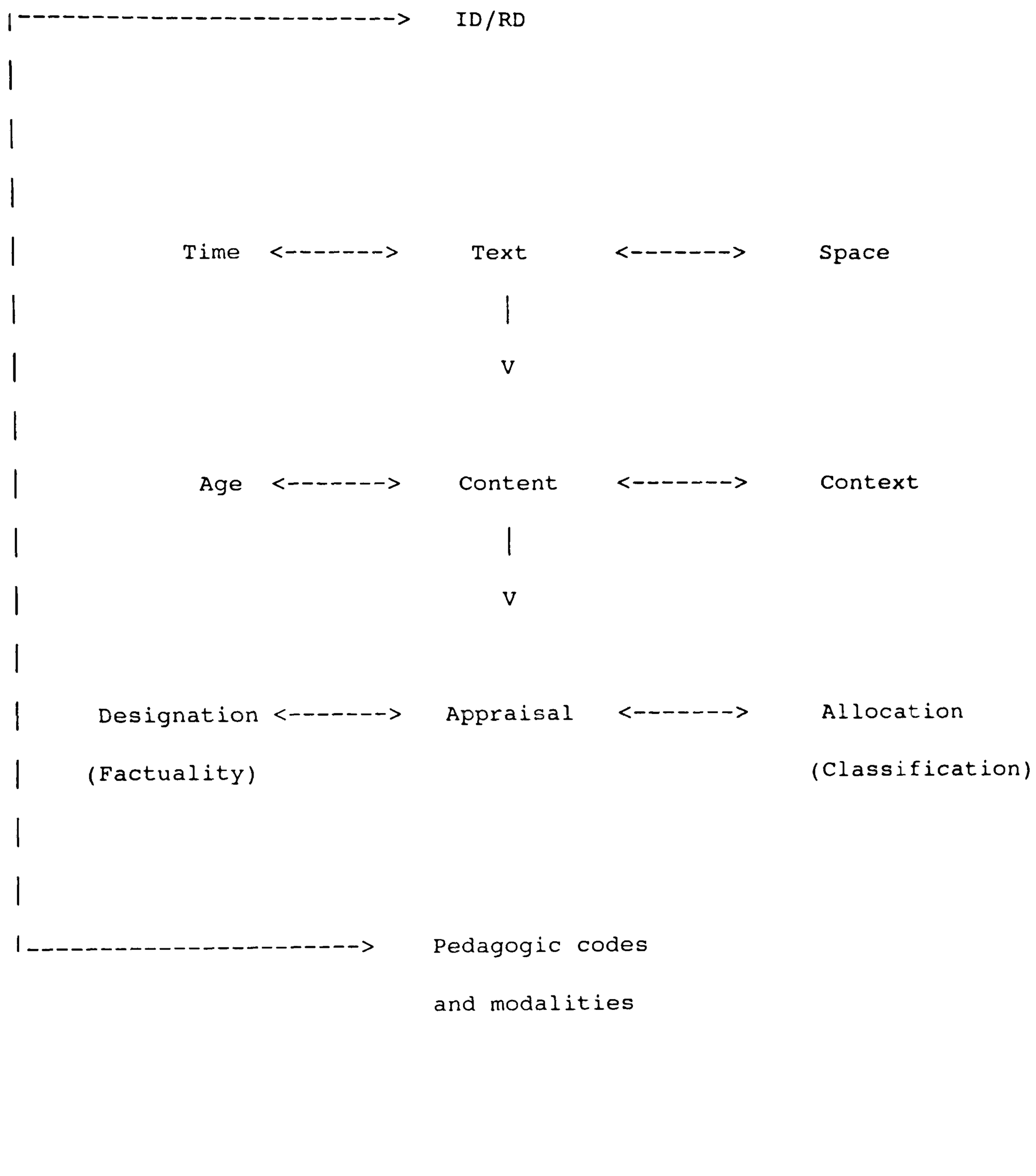
Designation <-------> Appraisal <-------> Allocation
(Factuality) (Classification)

Thus, the three fundamental categories of the pedagogic device - time, text, and space - give way to specific transformations within the context of medical discourse. However, the central transformation of text into content and diagnosis is still retained as the distinctive feature. Furthermore, if the transformation of the three universal categories of pedagogic practice into a relation between transmission and acquisition within educational pedagogic practice constitute "evaluative rules", their transformation into a relation between allocation and designation within medical pedagogic practice must constitute 'rules of appraisal'. In medical dis-

course age is transformed into designation; content is trars-formed into appraisal; context is transformed into allocation. Therefore in Figure 4.1 (over) we can represent the medical equivalent of the evaluative rules, as generated by the embed-ding of biomedical instructional discourses in their regula-tive discourse (ID/RD). Here, we must also note a subsidiary transformation of time and space within medicine as applied to the periodicization of illness and the spatialization of the body. In terms of time, an illness or injury itself is per-mitted a certain time-span defined by a set incubation period, the succession and duration of its signs and symptoms, and a prognosis for treatment. And the body itself is also possessed of a corporeal space, the object of a medical gaze which defines and observes it.

Figure 4.1[39]

Transformations of Pedagogic Discourse



4.4 Dominant Principles

A relationship exists between the both the official and the pedagogic recontextualizing fields and the field of production, the economy, and the field of symbolic control. This relationship exists in two areas.[40] First,

> the theories, practices, social relations within these fields will exert an influence upon the discourse to be transmitted and on how they are transmitted.[41]

This affects both the 'what' and the 'how' of discourse. In the general field of education, different recontextualized discourses - physics, English, history - whose practices are specialized to different sites (classrooms), times (periods) and agents (teachers). Just so within medicine, the body is classified into different systemic areas - anatomy, physiology, biochemistry - whose practices are variously specialized to different departments and agents within the hospital or medical school. The principle of classification itself is a reflection of the principle of the division of labour which is the dominant principle within the capitalist economic system. The separation of the different disciplines and the specialization of their agents within a medicalized bureaucracy then become an institutionalized metaphor for a divided body inscribed according to the dominant principles of a capitalist society, in marked contrast to the unitary codes

of different modalities of medicine practice constituted in pre-capitalist periods.

Secondly, just as in general education the training requirements of the place of work also influence the 'what' and the 'how' of pedagogic discourse,[42] in medicine there is also a strong link between the transmission of discourse and the requirements of the workplace. The maintenance of a productive workforce with the appropriate numbers is an essential function of capitalist medical practice. This is now a global phenomenon. A medical examination and 'evaluatory' note is required before a member of the workforce may take time cff and receive state benefits because of ill-health.[43]

Bernstein[44] contends that there are two possible outputs of the pedagogic device, and that these essentially oppose each other. "The outputs can be either shared competences or graded specialized performances.[45] Generally, the emphasis upon shared competences is to be found in societies, which are "nonliterate, segmented, with a simple division of labour". In these societies, the pedagogic agency is not specifically interested in maintaining individual difference in performance, its task is rather to ensure that everyone has the same range of competences or practices. In this respect the pedagogic agency is creating a set of social relations based on the principle of "similar to".

> Relations of 'similar to', where ranges of competences are shared, are relations of relatively low levels of specialization, creating a simple division of labour, celebrating and controlled by, mechanical solidarity.[46]

On the other hand, an emphasis upon specialized performances is to be found in societies where there is a complex division of labour, that is, within the 'various modalities' of organic solitary, such as capitalist and socialist societies.[47] In organic societies, the pedagogic agency is concerned to differentiate between the specialized performances of individuals, in terms of their gradings both 'within' and 'between' specialisms. In this respect, the pedagogic agency is creating a set of relations based on the principle, not of 'similar to' but of 'different from'. Thus, Bernstein posits that the two outputs of the pedagogic device may be associated with the dominant principles of a society:

> Shared competences, a simple division of labour, reduction in the strength of stratification based on work; specialized performances, complex division of labour, relatively strong stratification based on work. Thus, the potential outputs of the device seem to be relays for the weak or strong emphasis upon technological development, low or high levels of differentiated consumption.[48]

However, Bernstein goes on to say that the impact of the 'communications revolution' upon society may well result in a weakening of the social division of labour; and this could lead to: "an enlargement of the pedagogic space which could relay shared competences".[49]

Within the field of medicine the evaluative rules dispersed within the framework of "lifelong medical supervisicn" do not just assign competence, but actually grant an identity to the subject based on his or her relationship to a network of norms of physiological and psychological behaviour defired by medical discourse. Just as in education, this identity can be established in terms of positive relationships the subject shares with other members of a society (nomographic), or a negative relationship that sets him or her apart from other members of society (idiopathic). The evaluation of the subject along these two opposing principles is in fact represented concurrently in two of the modalities of medical discourse we have already positioned within the framework of the pedagogic device.

The medical research paper displays the operation of the principle of shared identity in the primary field, in particular the epidemiological study, which attempts to analyse trends over large samples of the population. The focus of a particular piece of research in the primary field is positioned by policy decisions made within the official recontextualizing field. This is affected by - amongst other factors - the allocation of funding to particular projects. The instru-

ment of the research paper which operates in the secondary field is the epidemiological survey which attempts to discover information about the subject in terms of what characteristics she or he shares with other medical subjects. We shall therefore refer to this as a nomographic text.

On the other hand, the other modality of medical discourse which operates in the primary field is the medical case history. The medical case history describes the patient, not in terms of what he or she has in common with other patients, but in terms of what sets a particular patient apart. This evaluation takes place at a site determined by the recontextualizing field within the domain of a particular field of specialization. Here the instrument is the dialogic medical interview and the medical examination. They attempt to discover information about the subject in terms of the characteristics which set the subject apart from other medical subjects. We shall call this an idiopathic text.

While the assignment of both shared and specialized identities within medical discourse coexists at present within the medical field, the relationships between them are subject to constant shifts in emphasis. The historical trajectory of this shift, particularly within the last ten years, lends further weight to Bernstein's assertion above that the emphasis placed by the pedagogic device within any one field, or across fields, is associated with the dominant principles of society.

The emergence of scientific rationality within the field of medicine was marked by a gradual displacement of the letter

as the chief mode of written discourse by the medical case history,[50] during the development of the early phases of capitalism. The medical research paper grew up alongside the case history and became more dominant as the analytical tools became available for the collation and analysis of large quantities of data regarding an increasingly medicalized population. However, until the last decade, the medical case history has at last enjoyed a fair degree of prominence along with the medical research paper, although the latter had already become more prominent in most journals. In 1983 case history reports were still being published in the British Medical Journal (B.M.J.); and the British Journal of Clinical Practice (B.J.C.P.), for example, was still committed to exclusively publishing case histories. However, in 1988 the B.M.J. announced that it was ceasing to publish case histories[51]; and in 1990, the B.J.C.P. announced that it was cutting back on case histories in order to give space for research reports.[52]

Thus, there would appear be a movement towards the gradual eclipsing of the idiopathic reporting of accounts of medical subjects with separate identities in favour of nomographic reporting of the identities which medical subjects share (or are supposed to share). This movement is being effected by agents working within the pedagogic recontextualizing field of medicine in the field of medicine. For it is in this field that texts are selected for publication and transmission within the different journals assigned according to the different areas of medical specialization. This shift from

the predominance of the idiopathic to the nomographic text in the specialized field of medical discourse is very much in line with Bernstein's contention that the relaying of shared competences is in the process of becoming a feature of a contemporary society with a weakened and weakening social division of labour.

4.5. Applications of the Model

Within medical discourse, distributive rules selectively allocate which social groups are able to think the unthinkable, in medical discourse, specifically in relation to the power over life and death associated with the institutional accrual of capital. The principal medium for this distribution of power is the potentiality of language itself, by the selective distribution of elaborated and restricted codes to different groups in society. Recontextualizing rules constitute the ideological relocation and transformation of medical texts, in particular in their transfer from the primary context of the production of knowledge to the secondary context of its transmission and reproduction. And finally, rules of appraisal transform the texts to an age-related content, linked in medicine to the physiological periodicity of the body. This constitutes the social principle of "lifelong medical supervision".

In this way, the intrinsic grammar of the pedagogic device is as applicable to the field of medical discourse as

to the field of educational discourse. The model describes the social construction of medical discourse in a way that emphasizes the internal working of the discourse itself, while tracing a relationship between the dominant principles of society at a 'macro' level, to the constitution of the individual's consciousness of the body at a 'micro' level. In this way the workings of the pedagogic device are crucially linked to the dominant principles of society.

However, one of the characteristics of the current episode of capitalism is the plethoric dispersion of multiple specialized discourses - the 'knowledge explosion'. Therefore, the pedagogic device may not only emerge as a defining feature of the discourse of education and medicine, but also of other specialized forms of discourse in modern society. As such, it may also provide an indispensible conceptual tool for analysing the links between the dominant principles of society and the construction of the consciousness of the individual.

One of the principal relays whereby the dominant principles of society are articulated upon the consciousness of the individual is the text. The texts which are produced, reproduced and transmitted within the different institutional sites of Bernstein's model realise symbolically the dominant principles of society. These can be written texts, such as the research paper or the textbook; they can also be oral texts such as the lesson, the confession or the interview. Bernstein's model provides us with a 'hook' on which to hang these texts in terms of their institutional contexts. There-

fore, we are now able to analyse the *external*, social relations of the texts of medical discourse with reference to the model of the 'pedagogic device'.

In the next chapter we shall go on to sketch in broad outline the theory of M.A.K. Halliday's systemic grammar. This will provide us with a final set of methodological tools with which to unpack the *internal*, linguistic relations of the texts of medical discourse. Here we will be looking not so much at the semantics of meaning or the stylistic tropes which Geertz mentions in Chapter 1.[53] Rather, we shall be looking at the grammatical and syntactic relations of the text, and the way in which they realize symbolically the social relations within and between the institutional contexts in which they are produced, transmitted and reproduced.

There are two ways in which the symbolic realization of institutional relations encoded within the text has an *ideological effect*. First, the written or oral text per se impinges upon individual consciousness. In particular, the way in which the subject is *situated* by the syntactic and grammatical relations of the text is a way in which the power of modern institutions is articulated upon the subject. Secondly, we shall also see that the syntactic and grammatical formation of the text affects its ostensible *truth value* as it moves through different institutional sites. Halliday's functional grammar will enable us to unpack the way in which institutional power is realized symbolically within the syntactic and grammatical relations of the text, and relate them to the in-

stitutional contexts of their production, reproduction and transmission.

Notes and References

1. See Chapter 2, p.44.

2. In Bernstein, B. (1990). Class, Codes and Control, vol. IV. London: Routledge & Keegan Paul, p.165-228.

3. Bernstein (1990), p.171.

4. Bernstein (1990), p.180.

5. Bernstein (1990), p.180.

6. Bernstein (1990), p.182.

7. Bernstein (1990), p.180.

8. Durkheim, E. (Trans. Swain, J.W.). (1982). Elementary Forms of the Religious Life. London: Allen and Unwin.

9. Bernstein (1990), p.181.

10. Bernstein (1971).

11. Bernstein (1990), p.182.

12. Turner, B.S. (1987). Medical Power and Social Knowledge. London: Sage.

13. Bernstein (1990), p.183.

14. Bernstein (1990), pp.183-4.

15. Bernstein (1990), p.184.

16. Bernstein (1990), p.191.

17. Bernstein (1990), p.169.

18. Latour, B., & Woolgar S. (1979). Laboratory Life. The social construction of scientific facts. Beverly Hills, Cal.: Sage Publications, p.47.

19. Bernstein (1990), p.191.

20. Bernstein (1990), p.192.

21. Bernstein (1990), p.192.

22. Bernstein (1990), p.196.

23. Bernstein, B. (1977). Class, Codes and Control, vol. III. London: Routledge & Keegan Paul.

24. Kuhn, T. (1970). Structure of Scientific Revolutions. Chicago: University of Chicago Press.

25. Bernstein (1990), p.192.

26. Bernstein (1990), p.192.

27. Ziman, J. (1968) Public Knowledge.Cambridge: Cambridge University Press, p.111-116.

28. Cummings, M.M. (1978). The National Library of Medicine. In K.S. Warren (Ed.), Coping with the biomedical literature explosion, a qualitative approach (pp.161-181). New York: Rockefeller Foundation.

29. Garfield, E. (1978). The Science Citation Index as a quality information filter. In K.S. Warren (Ed.), Coping with the biomedical literature explosion, a qualitative approach (pp.183-201). New York: Rockefeller Foundation.

30. Bernstein (1990), p.192.

31. Bernstein (1990), p.192.

32. Bernstein (1990), p.193.

33. Bernstein (1990), p.185.

34. Bernstein (1990), p.186.

35. Ivan Illich, in his polemical Medical Nemesis lights on a theme very similar to Bernstein's: "from the crib to the office and from the Club Mediterranee to the terminal ward, each age-cohort is conditioned by a milieu that defines health for those whom it segregates.... This life-span is brought into existence with the prenatal checkup, when the doctor decides if and how the foetus shall be born, and it will end with a mark on a chart ordering resuscitation suspended" (Illich, I. 1977. Medical Nemesis. New York: Random House, p.87).

36. Again, Illich makes this comparison explicit: "hygienic bureaucracy stops the parent in front of the school and the minor in front of the court, and takes the old out of the home. By becoming a specialized place, school, work or home is made unfit for most people. The hospital, the modern cathedral, lords it over this hieratic environment of devotees" (Illich, 1977, p.87).

37. Bernstein (1990), p.186.

38. Illich (1977), p.87.

39. Adapted from Bernstein (1990), p.157, Figure 5.4.

40. Bernstein (1990), p.198.

41. Bernstein (1990), p.198.

42. Bernstein (1990), p.198.

43. In certain countries, such as Singapore, the demographic survey is used to try to maintain a certain level of the numbers and perceived productivity (e.g. in terms of education level) of the workforce. Prime Minister Goh Chok Tong treads a fine line between demographics and eugenics while reflecting on a survey of marriage and birth trends. "These figures masked a deeper and more fundamental problem: women with little or no education have more children than better educated women". (Goh, C.T. 1993, June 21. Concern for Population Trends. Straits Times, p.1.).

44. Bernstein (1990) pp.206-7.

45. Bernstein (1990), p.206.

46. Bernstein (1990), p.207.

47. Bernstein (1990), p.208.

48. Bernstein (1990), p.208.

49. Bernstein (1990), p.208.

50. Swales, J. (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press, p.110.

51. Locke.S. (1988). Editor's Note. British Medical Journal, 297, 12.

52. Publisher's Note. 1990. British Journal of Clinical Practice, 44(12).

53. Geertz, C. (1964). Ideology as a Cultural System. In D.E. Apter, Ideology and Discontent (pp.47-75). New York. The Free Press of Glencoe.

CHAPTER 5

CODE, CONTEXT and MEANING.

In the last chapter it was observed that, within Basil Bernstein's model of the pedagogic device, there were three different institutional sites for the production, reproduction and transmission of knowledge. These were described respectively as the field of production, the field of reproduction and the recontextualizing field. Within each field the institutionally produced text assumes a different 'discursive formation' or 'genre'. Within the field of medicine this is the medical research paper within the field of production, the medical interview within the field of reproduction and the medical textbook within the recontextualizing field.

While Basil Bernstein's theory provides us with a model for the institutional and bureaucratic organization of the production, transmission and reproduction of medical discourse, it is necessary now to examine how the institutional construction of medical discourse arrives at particular context-specific forms of text. To do this will require a linguistic theory that relates social context to meaning, and meaning to grammar. Such a theory can be found in Halliday's functional grammar[1].

5.1 Meaning Potential and Social Situation

Halliday links the concepts of "behaviour potential" and "meaning potential" as an interface between sociology and linguistics. Much of the interaction of human beings with their social environment is in fact linguistic behaviour.

> Language...is a range of possibilities, an open-ended set of options in behaviour that are available to the individual in his existence as social man. The context of culture is the environment for the total set of these options, while the context of situation is the environment of any particular situation that is made from within them.[2]

Thus "behaviour potential" refers to the whole range of actions that an individual can perform in a given situation, and "meaning potential" renders the theory linguistic. While still being actions, statements are silhouetted by the potential of language itself for the "linguistic realization of the behaviour potential"[3] within the lexical and grammatical system of the language: what the speaker "can say" where meaning is still a category of action. Linguistic behaviour can therefore be represented as a set of options which determine the alternative meanings derived from the total meaning potential of language. Halliday's project is to establish the criteria which determine the selection of a particular option from the total meaning potential of the language in a given situation:

"if a, then either x or y (or...)."[4] The sum of conditions would constitute an overall linguistic system, an abstraction of the number of choices that could be made within the total potential of the language for meaning.

These options operate linguistically at three successive levels, three different ranges of structural strategies. First, in terms of the meaning potential, the semantic options can be "interpreted as the coding of options in behaviour."[5] Secondly, the semantic options are articulated upon the options at the level of grammar, although there is not necessarily an exact equivalence between individual components at the grammatical and semantic levels. And, thirdly, the semantic options demand that choices also be made at the phonological level. Halliday's particular interest is in establishing how the meaning potential of speakers, derived from a social theory of behaviour, is articulated upon the grammatical system of English. Thus a functional grammar is imbued with meaning and social significance; whereas conventionally it is regarded as a "pure", value-free system, essentially nonsemantic, asocial and devoid of meaning.

The association between the socio-semantic and the grammatical forms of English can be seen in the deployment of social roles which reflect the "inherent social structure of the speech situation."[6] For example, the selection of the interrogative out of the total number of options available in the English mood system assigns the role of questioner to the speaker, and that of answerer to the listener. Although these

roles are special in as much as they are implicit in the linguistic situation itself; they are not totally distinct from other less specifically linguistic socio-semantic categories and their grammatical realizations. For example, within the socio-semantic category of a threat there are a number of possible grammatical options implemented: declarative clauses either with first person future tense of the set of "threatening verbs", or accompanied by an attached "if" clause; also negative imperatives with "or", conditional future attributive clauses, etc. However, these options are not necessarily of equivalent value. The first alternative, for example, may emerge as the most common form of threat, dependent on context, while the others are subordinate variants. Thus the criteria for the selection of options within the meaning potential may be pursued within a range of levels of "delicacy"; and further explanation must be given for the selection of more refined modulations.[7]

The structure of any speech act such as a threat can be interpreted semiotically as "a complex of three dimensions: the ongoing social activity, the role relationships involved, and the symbolic or rhetorical channel."[8] These are referred to respectively as "field", "tenor" and "mode". These three semiotic dimensions are neither purely linguistic entities, nor are they aspects of the speech situation. They are "a conceptual framework for representing the social context as the semiotic environment in which people exchange meanings."[9] The field is the expression of the text as "social action"; and it

includes the realization of its conceptual content. The tenor is the nature of the relationships between the participants in an exchange; it includes, for example, the differences in degree of formality and/or authority between the respective speakers. And, finally, the mode is the "channel" which is chosen, the most generalized way in which language operates within the speech situation. The mode represents the difference between a dialogue, a book and research paper; which can then each be systemically traced to their linguistic realizations at a textual and grammatical level.

While the concepts of field, tenor and mode are systematically related to the linguistic system through the functional components of semantics, they are also related to the text owing to their integrated designation of the "register". Although the concept of register was originally defined in lexico-grammatical terms, Halliday proposes a more semantic definition: "the configuration of semantic resources that the member of a culture typically associates with a situation type."[10] In this way register signifies the meaning potential that may be utilized within a particular "social context". However, although the realization of specific alternatives in lexicon and grammar enables the register to be recognized as a unique choice of words and structure, it is not to be seen merely as the overlayering of a stratum of content with a predetermined pattern of signifiers, "it is the selection of meanings that constitutes the variety to which a text belongs."[11]

Just as the register is operated upon by the social context, so the social context is operated upon by the "code" (in the Bernsteinian sense). The code "is the principle of semiotic organization governing the choice of meanings by a speaker and their interpretation by the hearer."[12] In this way codes are not, like register, part of the linguistic system; rather, they operate as part of a 'higher' order as "types of social semiotic, or symbolic orders of meaning generated by the social system."[13] Thus, the code is realized in the language through register as mediated by socializing agencies such as the family, peer group, school or even medical practice. In this way the codes enable the reproduction of the forms of a particular culture or subculture.

Thus Halliday rejects the dichotomy between an idealized, essential structure of language, and its distortion when executed in speech: langue vs. parole, competence vs. perfcrmance. A sociolinguistic explanation of language does not distinguish between "knowing" and "doing". Any difference is more the difference between "can do" and "do"; and is necessary only to make sense of what the speaker does by referring to the social context of his actions. The capacity of the grammatical system has developed to link up discrete semantic utterances and form "integrated structures"[14] intermediate with expression. Halliday refers to:

> ...a range of behaviour potential determined by the social structure (the context of culture), which is made accessible to study through its association with significant social contexts (generalized contexts of situation), and is actualized by the participants in particular instances of these contexts or situation types.[15]

Thus functional linguistics might be said to have a dual aim, on the one hand to explain the nature of language from an "autonomous" perspective, on the other to outline features of social structure using a more "instrumental" approach. However, in the last instance, if language is to be fully understood, the former is subordinate to the latter.

> To understand language, we examine the way in which the social structure is realized through the language: how values are transmitted, roles defined, and behaviour patterns made manifest.[16]

In a socio-semantic approach to linguistics, structure is subordinate to function; and language is seen as inextricably intertwined with its context of situation.

5.2 Meaning Potential and Grammar

The semantic network is a necessary intermediate level of meaning. On the one hand, it refers "upwards" to social patterns of behaviour, on the other, it refers "downwards" to grammar. The moot point, of course, concerns the relations between these three levels, there being two sets: social ---> semantic; semantic ---> grammatical. Above, we looked at how social meaning translates into the semantic network, and here we will consider how the semantic meaning is realized in grammar. It is worth noting that the 'flow' of meaning in Halliday is generally described as unidirectional, from social context to linguistic expression, or from subject to discourse. This causal relationship is in marked contrast to Foucault, who at his most archaeological, afforded a great deal more recipricocity to the role of language, maintaining rather that linguistic expression (discourse) positioned the subject rather than the subject 'selected' from a range of meaning. We will go on to consider the causal relationship of the selectivity at the semantic and grammatical levels as we consider our sample medical texts. Halliday distinguishes between two types of extra-linguistic elements expressed in language: the social and the situational. The social aspects of language are composed of "generalized social contexts":

the establishment and maintenance of the individual's social roles, the establishment of familiarity and distance, various forms of boundary maintenance, types of personal interaction and so on.[17]

Situation types are the settings in which language is used to give the text its identifiable characteristics.

The text is "the basic unit of the semantic process";[18] it is the operational form of language. It is a series of choices from all the possible options that make up that which can be meant. In this way, text can be defined as "actualized meaning potential".[19] However, while a text is constituted out of a combination of sentences, it cannot be seen as being of the same consistency as its component parts. Halliday suggests that the text is viewed as being "encoded" in sentences rather than being "composed" of them.[20] In some cases texts may be particularly formalized and highly structured instances of 'everyday' linguistic exchanges: games, transactions, discussions, instructions, etc. This is the type of text favoured by linguists and discourse analysts of a linguistic persuasion. In our case we will be examining more 'remote' instances of institutionalized linguistic exchanges[21] as embodied in the medical interview, the medical textbook and the medical research paper. In both social and situational types, however, the identification of the social contexts and settings is dependent upon some kind of pre-selection by a social theory which gives them prominence as being of sociological

significance. The pre-selection in our case is more oriented to 'discourse theory' than to 'discourse analysis'.[22]

The semantic network is the "output" from the behaviour patterns and the "input" to the grammar. The semantic level is necessary since the direct relationships between the behavioural patterns and the grammar are too complex to represent. There is a need for an intermediate level of representation to express "the meaning potential that is associated with the particular behavioural content"[23] in order to take us into the recognizable grammatical structuring of linguistic patterns. In certain circumstances, "when there is a closed set of options in a clearly circumscribed social context", the semantic network can lead straight to the "actual words, phrases and clauses of the language."[24] These would include systems of greetings, musical directions (allegro etc.), instructions to telephone operators, buying tickets etc. However, Halliday concedes[25] that only a small proportion of everyday speech acts are open to this sort of consideration.

The aim of the functional approach is to link general social and linguistic phenomena so that they may illuminate each other. Thus, for example, a functional analysis can take other examples of the child-parent relationship which are operational at a social level to generate further semantic options, not just that of "threat", but also those of "disapprobation", "appeal" and "rule".[26] These semantic options can then be followed though to greater degrees of "delicacy" within the grammatical system so that the meaning

options are actually linked to linguistic aspects.[27] Thus, fairly generalizable categories of grammar and lexicon are able to be predicted with varying degrees of accuracy by the fully developed semantic network.[28] These include aspects of the grammar of the clause, participant functions as well as lexical items, e.g.:

- *grammar of the clause*: paratactic complex with "and" or "or", hypotactic complex with "if", or simple clause; transitivity; positive/negative; mood; modality; tense.

- *participant functions*: several, including "I" and "you".

- *lexical items*: defined according to the lexical sets within Roget's Thesaurus.

Thus, the use of the semantic network is able to generate a considerable amount of grammar in relation to "meaning" at a socio-behavioural level. What is more, much of the grammar that can be generated is of a general kind such as transitivity, mood and modality. In as much as all clauses in the English language select from these systems, therefore, "we are able to relate the choice to the social function of the culture."[29]

Grammar, then, is both "structure" and "network". It integrates a variety of semantic options into structures; and is expressed by networks such as transitivity, mood, modality

etc. Although there is emphatically no *exact* correspondence between the respective elements of the semantic and grammatical systems, nevertheless "the selection of a given option in the semantic network is realized by *some* selection in the network of the grammar."[30] However, it is important to note that neither do the two levels operate autonomously. Two possible criteria influence the immediate realization of a particular semantic option by a certain set of grammatical features. First, the selection can be influenced by the environment, either the "immediate paradigmatic environment"[31] or the social context, e.g. the difference between personal and formal expression of illness. Secondly, some choices may appear initially as "free variants" but with closer examination turn out to constitute a difference in meaning at a more developed point in delicacy. Interestingly, in the former choice, Halliday appears to be moving towards a more foucaultian position with regard to the determinacy of the semantic options open to the speaker in a given speech situation.

Therefore, on the one hand, out of a very general range of social contexts and settings, the speaker ends up with a potential for meaning highly specific to the situation type in question; while on the other hand, the grammatical options (transitivity, mood, modality etc.) through which the semantic options are realized are general to the language as a whole. However, "...the move from GENERAL social categories to GENERAL linguistic categories involves an intermediate level of SPECIFIC categorization where one is related to the

other."[32] It is this intermediate level of specific categorization that is the most fundamental criterion for the pre-selection of grammatical options. This intermediate level is defined by three linguistic "macro-functions" which constitute the essential interface between meaning and grammar, forming both "the most general categories of meaning potential, common to all uses of language"; and "the fundamental components of grammar" in as much as "it is grammar that turns meaning into text."[33] We will go on to consider the operation of these macro-functions as constituents of the linguistic system in the next section.

5.3 The Linguistic System

As we have seen, within a sociolinguistic context the role of the semantic system is emphasized.[34] There are three fundamental "modes of meaning" that exist in the use of language in a social context, which Halliday terms "metafunctions": the ideational, the interpersonal and the textual. These three semantic modes are systematically related to the respective socio-semiotic variables of field, tenor and mode that we looked at in a previous section. Thus, the ideational function derives from the activity of signification, the field; the interpersonal function derives from the negotiation and positioning of relationships of status and role, the tenor; and the textual function derives from the adoption of particular channels of signification, the mode.

The ideational function represents the experience of the speaker in his relations both with the material world and the world of consciousness. It expresses the content of language, what language 'is about'. It is the part of language which "encodes" an experience of a culture, and through which the speaker "encodes" the experience of being a member of that culture. The ideational function also expresses personal experience at two levels: the everyday phenomena of lived experience and also the "metaphenomena"[35] that are already encoded as facts and reports. While the former category tends to be the preoccupation of formal linguistics, and provided the starting point of this thesis, as the preoccupation of the speech act theories, it is the latter category that is our concern at this stage. Within the ideational function, there are also two subsets: the experiential and the logical. One describes the experiences of the speaker, while the other is reserved for the expression of logical relations. Yet the ideational function as a whole is present in almost everything the adult speaker says, hence the preoccupation with the informative aspect of the language.

This representation of the experience of the speaker is encoded in the clause as "processes".[36] One example of the ways in which grammar enables us to make sense of the world about us is the linguistic unit of the clause and the role of "process" and "agent" within it.

The clause is a structural unit, and it is the one by which we

express a particular range of ideational meanings, our experience of processes - the processes of the external world, both concrete and abstract, and the process of our own consciousness, seeing, liking, thinking, talking, and so on.[37]

"Agent", "process", "phenomenon" etc. all have the capacity to form grammatical structures which are "related to the general function of expressing process."[38] The relations within the formation of these structures are generated by the options within the system of transitivity in English.[39] Irrespective of how we describe these options, they exist in the syntax as part of the ideational function of the language.

The second linguistic macro-function is the "interpersonal". This function assigns communicative roles within the speech event and expresses the affective condition of the speaker. It functions as the participatory aspect of language, what the speaker 'does' with it. Through this function, the speaker expresses attitudes and judgments and attempts to affect other people's attitudes and behaviour. This element goes beyond a mere rhetorical function: "to express both the inner and outer surfaces of the individual"[40] in terms of both personal emotions and interactive relationships. In the clause, the speaker determines the relationship between himself and the addressee by his selection of mood; and expresses judgement and predictions by modality. The clause also discloses the role taken by the speaker within the context of interaction. Thus within institutionalized forms of discourse,

the speaker can be said to be acceding to the positions within conventionalized forms of discourse which are open to him.

The third, textual, function is the way in which the speaker relates language to the context of situation of the utterance, or text. It "expresses the relation of the language to its environment"; this environment can include both the verbal, intertextual environment of what has been said or written before, as well as the more immediate "nonverbal, situational environment".[41] In this respect the textual function performs a catalytic role with regard to the other two functions; it supports and enables the actualization of the ideational and interpersonal functions. In this way the speaker is able to convey the sense of a particular action in a recognizable form; and the listener to be able to interpret what he says.

The functional organization of meaning in language is the essential principle of organization of the linguistic system. The three metafunctions form "discrete networks of options"[42] within the lexicogrammatical system. In the clause the ideational function is represented by transitivity, the interpersonal function is represented by mood and modality, and the textual by "theme". As this network of options proceeds to greater levels of "delicacy", the choices made within one metafunction no longer affect the choices made within the other two areas. For example, a selection made within the transitivity system does not affect choices made within the mood or theme systems, although it does strongly affect other

choices made within the transitivity system itself.

These different levels of meaning are expressed synchronously, a process that Halliday compares to the use of polyphony in music. "A text...is a polyphonic composition in which different semantic melodies are interwoven, to be realized as integrated lexicogrammatical structures."[43] The precise semantic harmonies which emerge from the intertwining of these melodies can only be unpacked by examining the circumstances which govern their composition, or construction, within a social context. In this way, "....the concept of the social function of language is central to the interpretation of language as a system."[44]

5.4. Syntax and Power

Although the main body of his work focuses on the semantic implications of the syntax of authentic conversation, in last paper in Explorations in the Function of Language Halliday turns his hand to literature with a discussion of William Golding's novel, The Inheritors.[45] The observations that he makes will provide us with one useful conceptual tool with which to attempt to unpack the structure and meaning of medical discourse at the level of grammar.

The Inheritors tells the story of the supersession of Neanderthal man by homo sapiens. The style of the language used in the book is utilized to portray the limitations of the consciousness of Neanderthal man and to contrast it with the

vision that his successors had of the world which they were to accede to. Most of The Inheritors (pp.1-216) is written from the standpoint of a small Neanderthal tribe which is about to be overthrown by a group of more advanced primates. At the end of the book (pp.216-233), the perspective changes to that of the newcomers, which is recognizable as that of our own. Halliday explains the way in which language is used first to convey an impression of the consciousness of Neanderthal man, and then to create a change in perspective.

The key feature in the language of Neanderthal man is the preponderance of verbs in action clauses which describe simple movements but are intransitive. Description of movement often also involves location, featuring just one participant in a spatial relationship. Furthermore, while most of the subjects in these sentences are inanimate, being either parts of the body or objects, half of these clauses which feature human subjects are not in fact clauses of action. In view of the lack of complements, single participant spatial relationships are specified by adjuncts, over half of which are static; while the dynamic adjuncts all lack momentum, describing direction or perceptions, non-terminal action or nonphysical processes. Single participant mental process clauses, including perception, cognition, reaction and verbalization also either omit their "phenomena" or refer to them indirectly, so that the syntax actually reflects the manner in which the tribe is seeing their surroundings. Finally, such little modification of nouns as there is tends to be non-defining.

Halliday relates the syntax of the more primitive language of the tribe to three different levels of meaning within the novel in order to evoke the cognitive grip that Neanderthal man has on the reality of his world. The most obvious correlation is between the intransitivity of the verbs of action and the ineffectuality of Neanderthal man operating at a first level. However, it is not just ineffectuality, but a *sense* of ineffectuality that is mediated through the portrayal of the consciousness of one of the tribe, Lok, in the novel. Thus the lack of transitivity reflects the limitations of Lok's tribe both at a physical and an intellectual level, level 2, and sets the scene for their supersession by a superior race. "People do not act on the things around them; they act within the limitations imposed by the things."[46]

This is reinforced in three ways. First, there are hints of transitivity in the syntactical pattern which act as a touchstone to the intransitivity. Secondly, a tension is created between the use of finite verbs of movement in the simple past tense, along with an evacuation of animate subjects and transitive clauses. There is constant movement; but nothing ever happens. Thirdly, higher levels of understanding are also alluded to in the text, but go unrealized by our interpreter.

By contrast with the language of the Neanderthal tribe, the language used in the second half of the novel is different though less unique, since it reverts to what is recognizable as our own. With regard to transitivity, more than half the

clauses are clauses of action, most of which are transitive. Most of the clauses have a human subject; and there is a significant increase in the number of instances in which a human agent is acting on an external object. There are, inevitably, inanimate subjects, but none as agents. Parts of the body now feature as intransitive subjects, either attributively or with a verb of motion.

In the second half of the novel, Man has changed his relation to his world. It is the whole man who interacts with his environment and moulds it with a greater variety of actions. Moreover, his perception has evolved from the "twig, stick, bush, branch" of before to "the mountain ...full of golden light", "the sun was blazing", "the sand was swirling". Furthermore, he starts to make things, such as "the sail, the mast."[47]

Thus, in what is possibly a slightly over-schematic fashion, this syntactic imagery can be related to three semantic levels. The transitivity inherent in the second language realizes the effectiveness of homo sapiens upon his surroundings (level 1) integrating, for the first time, aspects of cause-and-effect. At level 2, the story of evolution moves into a new phase with the expansion of consciousness inherent in homo sapiens. And finally, at the deepest level, level 3, the realization of Man's "human condition"[48] shifts from a state of impotence to one of potency.

Here, Halliday's linguistic analysis establishes the way in which meaning is signified by two contrasting uses of lan-

guage. These uses are paradoxical in as much as it is the language of the tribe which is established as the norm in the first part of the novel; while the language of homo sapiens emerges within the terms of the novel as a departure. Yet the syntax is explored in relation to meaning in as much as syntax is *meaning*. This system derives from the ideational function of the language in as much as it constitutes a structuration of two divergent experiences of the world. The principal aspect of the ideational function here is that of transitivity, which enables the contrast to be made within the novel between the states of unrealized and realized actions. Yet the distinctions between the different strata at play within the novel are purely artificial for the purposes of analysis. In fact meaning (action/inaction), linguistic function (ideational) and syntax (transitivity/intransitivity) are interlocked, and any one utterance extracted from the novel would display "multiple values"[49] which reflect the essentially integrated nature of the language at work in the text.

5.5 Functional Language and Medical Discourse: a hypothesis

It follows on from Halliday's procedure that in as much as there is "a set of generalized functions of language which define the total meaning potential of the adult language system,"[50] a functional approach is able to provide the basis for the analysis of a formal text as well as a conversation. In this respect, a functional analysis is also applicable to

certain forms of scientific text. In a sociolinguistic analysis a functional approach is able to reveal something of the workings of the para-linguistic level of "code" upon the semantic and grammatical choices of the speaker in a certain speech situation; while in a litero-linguistic analysis it is able to reveal something of the workings of the paralinguistic level of literary style upon the selections of grammar at the textual level. Just so, the analysis of the grammatical formation of three modalities of medical text - research report, textbook and interview - might reveal something of the way in which the relationship between the internal structuring of the text and the medical subject is effected by the three discursive domains of medical institutions: the (primary) field of production, the (secondary) field of reproduction and the (tertiary) recontextualizing field.

In his analysis of <u>The Inheritors</u> Halliday invokes the notion of "power" as being an essential part of the human condition. Here the grammatical relations of transitivity are employed by Golding at the "deepest" level of his novel (level 3) to differentially position members of the "tribe" and the "people" with respect to their capacity for agency. The concept of agency has already been considered in the very different context of Michel Foucault's conceptualization of "power/knowledge". The syntactic characteristics of transitivity are some of the more self-evident grammatical features of the four different modalities of medical text that we will be examining in the second half of this paper: the

doctor-patient interview, the case history, the textbook and the research paper. Halliday's relation of the linguistic category of transitivity to a theory of power may enable us to identify certain syntactic features of medical writing and link them to the grand foucaultian theory, which views the development of post-Enlightenment rationality as the basis for the articulation of social power.

If Halliday's analysis of The Inheritors describes a historical progression from powerlessness to empowerment, from intransitivity to transitivity; it is proposed that our analysis of medical discourse reveals a regression, a regression in the empowerment of the patient as she moves from the secondary context of the reproduction of medical discourse (medical interview) to the primary context (research paper). The patient is both subject and object of medical knowledge. As the knowledge embedded in the discourse becomes more remote from the site of the participation of the patient, so her status modulates from one to the other. The subjectivity of the patient becomes the objectification of the doctor. This is reflected in the syntax which is embedded in our three modalities of medical discourse. The following is a highly provisional account of the way in which this transformation takes place; and its validity will be tested against samples of text in the second half of the paper.

When the patient sits down in the surgery or the examination room, she tells the doctor a story prompted by the doctor's questioning. The patient's contribution entails a

certain participation in the unfolding of events. It is postulated that the 'text' of the patient's story will have a high incidence of transitive verbs of action in the narrative form of the simple Past tense (c.p. Halliday's language of homo sapiens). When this story is written up as a medical case history (idiopathic text), it will lose practically all of its narrative form as the patient loses her role as actor. The patient's presence in the text becomes a mere cipher for the specification of the disease and its management. An account of the same condition in the medical textbook, as it moves into the recontextualizing field, will also see the complete evacuation of the persona of the patient, with an accompanying negation of verbal transitivity and modulation in tense from the narrative simple Past to the Present tense of "scientific fact". Although the features of the medical research paper (nomographic text) are not unitary, and its four parts (Introduction, Methods, Results and Discussion) themselves have very different points of focus, we will still not find any evidence of the patient as subject. However, a new persona intrudes, that of the researcher, mostly into the Discussion section. Thus we will find a limited restatement of transitivity, although this is still significant from the standpoint of our transitivity/power equation. The identity of the agent has changed.

There is an evacuation of the subject in contemporary medical discourse represented by a syntactic shift away from the structures of transitivity (power) as the patient becomes

"desubjectivized" at more abstract levels of medical knowledge. It is also significant that the greater the degree of epistemological abstraction, the greater is the status afforded the knowledge in question. Thus far greater "cultural capital"[51] is acquired by the research scientist in the medical laboratory than by the medical practitioner in the general surgery. Halliday's pronouncements on the functional basis of language would seem to provide us with a linguistic platform from which to elaborate Foucault's more philosophical critique of the embodiment of power within the constitution of post-Enlightenment scientific knowledge, by a more detailed investigation of the syntactic formations of medical discourse and their symbolic function.

Notes and References

1. Halliday, M.A.K. (1973). Explorations in the Function of Language. London: Edward Arnold; (1985). An Introduction to Functional Grammar. London: Edward Arnold.

2. Halliday (1973), p.49.

3. Halliday (1973), p.51.

4. Halliday (1973), p.55.

5. Halliday (1973), p.55.

6. Halliday (1973), p.56.

7. Examples of this approach can be found in Turner (1973) and a discussion of the semantic options available in one specific example of maternal disapprobation in Halliday (1973), p.61 ff.

8. Halliday, M.A.K. (1978). Language as a Social Semiotic. London: Edward Arnold, p.111.

9. Halliday (1978), p.111.

10. Halliday (1978), p.111.

11. Halliday (1978), p.111.

12. Halliday (1978), p.111.

13. Halliday (1978), p.111.

14. Halliday (1973), p.67.

15. Halliday (1973), p.67-8.

16. Halliday (1973), p.69.

17. Halliday (1973), p.79.

18. Halliday (1978), p.109.

19. Halliday (1978), p.109.

20. Halliday (1978), p.109.

21. What Dreyfus and Rabinow (1982) have already called "serious speech acts" in Chapter 2, p.55.

22. For an earlier discussion of this see Chapter 1, p.9.

23. Halliday (1973), p.83.

24. Halliday (1973), p.83.

25. Halliday (1973), p.92.

26. Halliday (1973), p.74.

27. Halliday (1973), pp.75, ff.

28. Halliday (1973), pp.90-91.

29. Halliday (1973), p.91.

30. Halliday (1973), p.93 (my emphasis).

31. Halliday (1973), p.93.

32. Halliday (1973), p.101 - sic.

33. Halliday (1973), p.100.

34. Halliday (1978), p.111.

35. Halliday (1978), p.112.

36. Halliday (1985), p.53.

37. Halliday (1973), p.39.

38. Halliday (1973), p.39.

39. Halliday (1973), p.40, Fig. 4.

40. Halliday (1973), p.107.

41. Halliday (1978), p.113.

42. Halliday (1978), p.113.

43. Halliday (1985), p.112.

44. Halliday (1973), p.42.

45. Golding, W. (1955). The Inheritors. London: Faber.

46. Halliday (1973), p.128.

47. Halliday (1973), p.132.

48. Halliday (1973), Table 2 [p.142].

49. Halliday (1973), p.135.

50. Halliday (1973), p.62.

51. To appropriate Pierre Bourdieu's term (1984, Distinction. London: Routledge & Kegan Paul; 1990, In Other Words. Cambridge: Polity Press; 1991, Language and Symbolic Power. Cambridge: Polity Press).

CHAPTER 6

IN THE INTERESTS OF THE DOCTOR

With our methodological schema in place, we can now proceed to analyse a sample of texts from each of the principal 'discursive formations', or 'genres', within medical discourse. This will be undertaken at two levels. First of all, in Chapters 6-9, we shall look at the formal structure of each genre which is effected by - in Halliday's terms - the **mode** of the text. Here, we shall be looking at the overall rhetorical contours of each type of text. Then, in Chapters 9-11, we shall be looking in greater detail at the grammatical and syntactic relations of the text and how they realise symbolically the social relations of their 'context of production'. We will examine the way in which this is effected by the **field** and the **tenor** of the medical texts.

We will make a start by looking at the generic characteristics of the medical interview, principally because the canonical model in British linguistics for the analysis of spoken discourse in institutional settings is firmly grounded in the work of other writers seminal to this paper - Halliday's theory of functional linguistics, as well as Bernstein's theory of linguistic codes. Our analysis will be derived from the approach established by John Sinclair and Malcolm Coulthard along with the Birmingham Language Research Unit (L.R.U.).[1] In Hallidayan terms, we will make a start by examining how the **mode** of the field of reproduction of medical

discourse is realized by the **textual** metafunction at its highest level, i.e. that of its rhetorical structure rather than grammatical relations, the structure of dialogue.

Sinclair and Coulthard's model was developed, as was Bernstein's, in the field of education; and arose out of a collective study of the English used by teachers and pupils in the classroom.[2] Their project was to carry out a formal description of conversational discourse; however, the awkwardness of describing "desultory conversation" led them to select certain formalized speech situations in order to yield more constrained forms of conversation for analysis. The Birmingham Group's initial studies of the discourse of the classroom led them to subsequent analyses of forms of discourse outside the educational field, such as committee meetings, radio broadcasts and, most germane to this study, doctor-patient interviews.[3]

In their collaborative study of medical interviews, Coulthard and Ashby broke with some of the more traditional behavioural and sociological approaches to the doctor-patient encounter;[4] their aims were sociolinguistic - to describe in the best traditions of a functional grammar "the way in which grammatical units such as sentences and clauses are used functionally by speakers to achieve social ends."[5] They maintain that rather than being analysed directly as providing evidence of the speaker's social role, utterances should first be examined "... to see how they contribute to the ongoing discourse, after which it is possible to see how speakers differ

in the characteristic contributions they make to the discourse."[6] Thus, they maintain that "...discourse structure is a relatively autonomous level of linguistic organization that can be studied in its own right"[7] and that this "mediates between sociological and grammatical categories."[8]

In order to define this level of "mediation" between sociological and grammatical categories, Sinclair and Coulthard propose "a new level, discourse, with its own rank scale, to cope with the structure of classroom interaction." This rank order of discursive categories was derived from Halliday's rank scale of grammatical constituents.[9] As with Halliday, there is also in the Birmingham model no presupposition of any relation between the formal categories of discourse and their substantive expression in grammar. Thus, for example, the discursive act *directive* can cut across all four grammatical clause types of imperative, interrogative, declarative and moodless.[10]

The constituency of the linguistic model which Sinclair and his colleagues applied to classroom discourse looks like this:[11]

lesson

transaction

exchange

move

act

The most all-encompassing unit of the rank scale of discourse, then, is 'lesson' in educational discourse, which corresponds to the 'interview' in medical discourse. However, to maintain continuity with our earlier discussion of the constituency of discourse, it is necessary here to meddle with Sinclair and Coulthard's terminology. For it appears that the term 'discourse' will not do for handling a typology of specific forms of discourse within the parameters of our sociolinguistic analysis. We earlier defined 'discourse' as a category which could be extended to an ensemble of texts that operates within any one epistemological field.[12] It is necessary to employ a different term to describe the discrete form of an individual text. The more recent[13] use of the word 'genre' will do better service here. In our analysis, then, 'genre' will be taken to describe a specific form of text at a subsidiary rank to 'discourse', which operates at a higher level of constituency. 'Lesson', 'broadcast', 'meeting', 'interview' are all types of spoken genre within different modes of discourse. A mode of discourse realizes the context of an epistemological field. It is the genre of the 'interview' which will concern us at this point in our analysis of medical discourse; and this can be placed in a sociological position vis-a-vis the production, transmission and reproduction of the pedagogic discourse within the medical field. Just as the 'lesson' mediates the reproduction of knowledge in education, so the genre of 'interview' mediates the reproduction of knowledge in medicine.

It is also necessary to identify a relationship between subsidiary types of medical interview, or 'sub-genres', which operate within the total environment of Bernstein's secondary context of the production of medical discourse. Most analyses of the medical interview and the patient deal either with just one type of interview, or make generalizations about the genre without discriminating between different generic types of interview in their analyses. Generally these focus on the interview which is carried out between the general practitioner (G.P.) and the patient.[14] However, it has to be acknowledged that the discursive choreographing of the interaction between the medical subject, the medical agent and the medical institution is a more complex affair than can be assumed from looking at just one type of interview constructed at one site. For example, epilepsy is a chronic illness, which requires specialized treatment and referral to a consultant. So, there is actually a sequence of interviews which takes place at different medical sites and with different medical agents as the medical subject is initiated into his or her role qua patient. In this way the identity of the 'medicalized subject' is constructed through a series of negotiations and interactions between the prospective patient and the agents of the medical institution, which take place at different sites.[15]

Therefore a three stage shift can be postulated for the sequential discursive structuring of doctor-patient interviews for the 'chronically ill' subject. These three stages are still essentially sociological rather than linguistic

categories. Although some linguistic indices can be traced in order to support their identification, this level of discourse is defined in terms of agency and site rather than features of language.

Stage A. General practice interview

Site: general practice/health clinic

Agent: general practitioner

Stage B. First outpatient's interview

Site: specialist department in hospital

Agent: consultant

Stage C. Follow-up outpatient's interview

Site: specialist department in hospital

Agent: doctor

Within West's account of the role of the physician in epilepsy, the general practitioner merely operates as a "referral agent" and transfers responsibility for chronic illnesses to the hospital. The first outpatient's interview is usually the only opportunity the patient gets to see a consultant pediatrician. In subsequent visits, the epileptic patient may see a "variety of different doctors".[16]

The discursive movement through these successive stages corresponds to the gradual characterization of the patient as being chronically ill. Within these stages there will be some repetition of forms, sequencing and exchanges of information,

which will reinforce the ritualistic nature of the process of medical initiation. However, there will also be a ongoing development of the discursive modes of interaction between doctor and patient as the medical subject moves through the successive stages. The totality of these different stages in the discursive socialization of the medical subject can be compared structurally to the framework of the curriculum, within which educational knowledge is selected, paced and transmitted to the pedagogic subject.

6.1 Structure of the Medical Interview

Four interview texts were drawn from the database of Patrick West's 1974 study.[17] Two texts (Texts A and B) represent first outpatient appointments at a Bristol clinic for childhood epilepsy (Stage B above) while another two (Texts C and D) are examples of follow-up appointments. In all four cases, the interviews take place between three parties: the child-patient, who is accompanied by his or her parent who acts as a kind of 'broker' and consequently does most of the talking on the child's behalf, and the doctor.

According to Coulthard and Ashby's model, medical discourse can be subdivided into a number of transactions between the doctor and the patient. The function of the transaction is to display linguistic indicators of the switch through different phases (or moves) of the consultation, e.g. from the

doctor's analysis of the patient's problem to his issuing of the prescription. Thus, the transaction "is a series of sequences or exchanges concerned with a single topic".[18] Each transaction within the medical interview was marked by what are termed boundary exchanges. A boundary exchange usually consists of two parts: a frame and a focus.

A frame is usually expressed by just one of five words: 'O.K.', 'well', 'right', 'now', 'good'[19] These words are uttered with a distinctive intonation:[20] "with strong stress, high falling intonation and followed by a short pause."[21] These markers are one of the linguistic features which help to indicate the different 'phases' of the interview; but they also have their most significant function at the end of the interview, when the doctor wants to indicate to the patient that he has nothing more to say. The researchers found that the G.P. would anticipate the close of the interview, generally by issuing a prescription, whereas the consultant would give no warning that the interview was about to end. In this way the consultant avoids the notorious phenomenon of the 'last question', where the patient only discloses on his way out that he has been avoiding the real issue right through the interview and is now ready to get it off his chest. The frame used almost invariably by our four doctors was 'right'.

A focus, in classroom discourse is usually a 'metastatement' - a statement concerning the discourse itself - about the transaction that is going to take place. This was the case in a minority of instances in our medical interviews.

frame: Now.

focus: Let's get on with the questions shall we?

(Text A)

One can, however, detect from the peremptory nature of this utterance, that it also has implications of a command, or 'directive', in Sinclair and Coulthard's terminology. It was found in our medical interviews that the focus often retained the form of a directive and abandoned the form of the 'metastatement' which is more typical of classroom interaction. More generally, the doctor would tend to issue some kind of practical command to the patient as an indication that he was either about to change the tack of his questioning, or that he was going to 'recycle' some of his old ground.

frame: Right.

focus: You wait outside will you E - we'll arrange the X-rays.

(Text B)

While there is a practical reason for the doctor issuing this directive at the beginning of the medical examination, just as there is a practical pedagogical reason for the teacher issuing periodic summaries of the material he or she has just covered in the classroom, it simultaneously serves a quite separate discursive function - to indicate the boundary between this and the ensuing interaction. A similar phenomenon

is also found at the end of the medical interview. While the teacher will often sum up at the end of a lesson, again the doctor issues a directive.

frame: Right.
starter: Well.
focus: We'll see you again after the tests have been done.

(Text B)

Coulthard and Ashby[22] found that the way in which transactions were structured in the medical interview differed between consultants and G.P.s. In the former, exchanges combined into sequences, which in turn combined to form transactions; in the latter, exchanges combined directly into transactions. This can be attributed to the relative lack of familiarity between the consultant and his patient when compared to the G.P. It was also found[23] that consultant interviews consisted of many more transactions than did G.P. interviews.

The next level of conversation is the 'exchange', which is also the basic unit of all verbal interaction.[24] This comprises a certain minimal interchange of two successive utterances: one speaker says something and another replies. Each utterance within an 'exchange' is called a 'move', of which there are three types. The first type is the 'initiating' move. This opens the exchange, "...links forward, and places constraints on what can happen next and sometimes on what person can speak."[25] Second comes the 'responding'

move which, "...links backwards but make no requirements on what the next move will be or who will make it."[26] In this way the respondent in one exchange can take over the initiative for a successive exchange. Then, additionally, there is the 'follow-up'. This can refer back to an earlier move, but is not a prerequisite of it. "Follow-up moves comment on, or indicate acceptance of, what has gone before in the exchange."[27] Thus, the 'follow-up' comes after other moves which do not require a response, as some kind of acknowledgement on the part of either speaker of what has come before.

By far and away the most common form of exchange in our outpatient interviews consisted of only two moves, with the doctor even withholding a follow-up comment. This form of exchange is especially terse at the opening of the first outpatient interviews (Texts A and B), e.g.:

D: (elicit) And was it a normal delivery?

P: (reply) Forceps. (Text B)

However, Coulthard and Ashby place more emphasis upon the three move exchange, where the doctor gives a minimal follow-up to the patient's reply. However, our consultants seemed to withhold their follow-ups for pieces of information that were in some way particularly striking:

D: (elicit) And how's she getting on at school?

P: (reply) Oh, she's had a marvellous report.

D: (feedback) Good. (Text B)

However, a fairly mundane exchange can run to four or even five discrete moves:

D: (elicit) Do you need any phenytoin?

C: (reply) I'm getting short.

D: (feedback) You're getting short of phenytoin, are you?

P: (reply) We can get that from our own chemist, actually.

D: (feedback) Right. (Text C)

Coulthard and Ashby identify three functions of the exchange which are common to all forms of discourse: eliciting, directing, and informing. However, these three types of exchange do not correspond to any grammatical phenomena, either structural units such as the sentence, clause, or the word; or with tenses or 'moods' such as the declarative, interrogative or the imperative.

> Moves and acts are functional, not grammatical, categories ..... defined on the basis of being meaningfully different selections at certain positions in the structure of the discourse.[28]

The two, three and five move exchanges above are clearly examples of the eliciting type of exchange, which is by far the most common form of exchange within the medical interview. As well as being characterized by a sequence of two to five moves, the eliciting exchange is most commonly initiated by a question. Both standard types of questions identified in linguistics are found to initiate the eliciting exchange. 'Wh' questions, beginning with words like *when*, *where*, *why*, *how* and *who* ask for information; while polar questions simply ask for the responses *yes* or *no*. These can alternate sequentially as in:

D: (elicit) And how many times has it happened since?

P: (reply) About three, I think.

D: (elicit) And all occurred at the same time did they?

P: (reply) Yes. (Text A)

After the eliciting exchange, the next most common form of exchange in the medical interview is the directive, which has three main purposes: to mark a boundary in the medical consultation, during the physical examination, and/or towards the end of the consultation when the consultant is issuing a directive regarding the drug regimen.

D: Well, I'd like her not to have any until she's had an electrical test. And I think we'll arrange some X-rays, and we'll see her again when we have the results. There's no urgency about it. (Text B)

However, a purely directive exchange is not that common, as the doctor's direction often occurs in one exchange along with another move, generally an elicitation. In a combination of moves, the directive can either take a dominant ('head')[29] or subsidiary ('pre-head' or 'post-head') position in any one exchange. Here the directive is in the 'pre-head' position, with the eliciting move dominating the exchange.

D: (direct) So, for the first week, can we take 4 tablets a day?

D: (elicit) Um, do you have capsules?

P: (feedback) No, she has tablets.

D: (reply) Right. (Text C)

This example shows how the speech functions of the exchange cut across the grammatical structure of the exchange. The opening ('pre-head') move has the grammatical form of a question, but performs the speech function of a directive; however, there is a following ('head') move by the doctor inquiring as to the form of the medication. It is the eliciting move to which the patient responds, and therefore it occupies the dominant position in the exchange.

The least commonly found form of exchange in the medical interview is the informative. And this has its significance in terms of the way in which the pedagogic discourse of reproduction works in medical discourse. In educational discourse the pupil is initiated both into the physical regime of the school through the institutionalization of uniform, timetables,

hierarchy etc.; as well as into the codes of explicit knowledge which it is the school's business to transmit. However, in medical discourse, the medical knowledge is rarely shared explicitly with the patient. In fact, it was a commonly held complaint on the part of the parents who were interviewed separately in West's study[30] that the doctor is perceived only to disclose information to the patient under duress. "Often they perceived that such information is either not being volunteered or that when challenged doctors appear evasive."[31] Thus, the patient acquires the role of a medicalized subject through consistent exposure to the different forms of medical encounter. But unless he or she takes a positive initiative, there is no provision within the framing of medical discourse for the patient to be initiated into a medical epistemology.

Thus, generally, the informative exchange offers information about medical procedures, rather than about the medical condition or the diagnosis of the patient.

D: (inform) Now, Dr. X has written to say that everything's alright for the tutorial - at Brunswick Square. O.K. - have you got an appointment?

P: *react*

D: (inform) It's in the speech therapy room, I don't know why, it just happens to be in a room which is available.

P: *react* (Text D)

Here the consultant is outlining a subsequent cycle in the initiation process for the patient. No patient response is transcribed, but one can postulate a minimal response from the patient in the places indicated in italics. As with the directive exchanges, the exchange of information between the doctor and the patient often takes place in fact as a subsidiary, 'pre-head' or 'post-head' move within an eliciting exchange.

D: (direct) Yes, well, what we usually try to do with this epilim is that you need less phenytoin - it's a potentiating effect - people tend to go to sleep.

(elicit) Um, has she been asleep?

P: (reply) No, to be quite honest with you, she's far better than she has been. She can work things out for herself. And for 2 weeks she was quite clear. (Text C)

Here the move which governs the exchange, and to which the patient responds, is the elicitation regarding the child's sleeping habits. However, embedded within the opening to this exchange is an informative move relating to the dosage of the drug, phenytoin.

However, the critical area where medical information is most absent in the medical interview is in the area of diagnosis. While the attendance of the epileptic patient at the outpatient clinic, and particularly at the follow-up appointments, is a sure-fire indication that he or she is an 'epileptic', there is a reluctance of the consultant actually

to offer an explicit diagnosis of the condition to the patient. This was again confirmed by West's parent cohort:

> Most parents claim that the diagnosis of epilepsy was given by the doctor only because they 'forced' it from him, or that it was released by one or other doctor when the child had already been attending for quite a long time.[32]

There also appears to be a tendency on the part of the doctor to comply with the patient's own interpretation of the child's condition.[33] Only in one text, Text D, is the word 'epileptic' actually uttered, and in this case it is by the mother of the patient. In Text A the father proffers that fact that his child is suffering from 'fits'; this word is later echoed by the doctor. In Text B the doctor does volunteer the information that the patient is suffering from 'convulsions'; however, in a following discussion with the interviewer he confides that he did <u>not</u> think that the child was suffering from convulsions. It is apparent from the context of the interview that the doctor is giving the patient the information that he thinks she wants to hear. In Text C, the first follow-up interview, the patient merely refers to her child's fits as 'them' which again is echoed without elaboration by the doctor. Finally, in Text D, where the mother is seen to be the most assertive of the four pairs of clients, the doctor initiates with the word 'blackouts', and the mother follows up with the only mention of 'epileptic fits' in our corpus:

D: Now, since last week, how many *blackouts* has Susan had?

P: Well, on Monday she had none, a clear day - on Sunday she had one, and as I said, a proper *epileptic fit* today. (Text D)

On occasion, the doctor may be genuinely unclear about the diagnosis of the patient; however, it is clear from the interviewer's conversations with the doctors after this encounter that they are reaching a firm conclusion about the condition of the patient.[34] Here, it is simply the case that the doctor does not disclose it during the course of the interview. This is therefore an example of the way in which the doctor prefers to take the line of least resistance from the patient's own preconceptions relating to the expression of the diagnosis. This resembles the way in a student-centred style of classroom procedure a teacher might put wrong answers from a pupil 'on hold' during class discussion. The difference between the medical and educational situation is, however, that ultimately the teacher elicits the correct answer from the group and reinforces it, while the doctor appears content for the patient to continue indefinitely with the diagnosis in parenthesis.

6.2 Role of the Doctor

In the bulk of the medical interviews the doctor initiates the elicitation of information from the patient. This comprised the large part of the interviews observed by Coulthard and Ashby[35] between the G.P. and his patient and all of the case-history taking carried out between the consultant and his patient, and was confirmed in our own sample. Indeed it would appear that the doctor generally has very firm preconceptions about the information he wants, which leads him or her to impose a rigid structure upon the interview. In a later publication[36] Coulthard goes so far as to speculate upon the relationship between the medical interview and genres in other contexts of medical discourse. In particular, the medical consultant's sequencing of the questions often appears to reflect that of the medical textbook sequence. This is indicative of the powerful relationship that exists between the recontextualizing field and the field of reproduction of medical discourse:

> ...the hospital consultation in particular has a stock list of questions on past medical history...which are clearly independent of a particular patient's illness - such questions are listed in clinical textbooks and are asked in all case histories.[37]

Thus the role of initiator of the exchange resides with the doctor, while the responding role resides with the patient, with the doctor actually controlling the pacing and sequencing of the input of the patient. This is due to the fact the doctor has privileged access to the authoritative text.

One assumption[38] that was brought to this paper was that the patient's contribution to the medical interview would be some form of narrative, or story telling, regarding his or her medical condition. The reality of this is far from the truth. In the structuring of both the initial outpatient interviews, there comes a point where the doctor appears to open out the interview for some kind of spontaneous participation on the part of the patient. However, it can be seen below that the doctor has his own preconceptions about the information he requires and will quickly cut the patient off in order to return the account to the right direction.

D: (elicit) Right, now, let's get round to I, shall we? Now I has had some fits has he? Tell me about them.

P: (reply) He's had two - the first one I didn't take too much notice, but then, when he had the second, I went to the doctor. His mother has left us, you see, and I is sleeping in the same room. This is how I noticed.

D: (elicit) What do you notice? (Text A)

A subtheme of Text B is the separation of the parent from his wife; however, the doctor is not interested in engaging in any apparently redundant information about the patient's marital situation, and encourages him in a renewed elicitation to get on with his description of the signs and symptoms. Here we can see that there is in fact little scope for unrestricted story-telling on the part of the patient; and that the whole edifice of the medical interview is locked into a dialogic framework firmly controlled by the doctor.

Occasionally, the patient does attempt to seize the initiative, but again the rules of the medical encounter are such that the doctor is under no obligation to respond and "in fact he usually avoids responding and attempts to regain the initiative":[39]

D: (elicit) Epilim's a new drug - it's not really on the market yet, nd it's still in the trial stages - available only inside hospitals, and we like you to keep a chart so that we can assess its effectiveness.

P: (elicit) We were wondering - can we have some more?

D: (reply) What I'd like you to do is up the dosage and cut down on the phenytoin. (Text C)

While the parent here does get what she wants, the language of the exchange indicates that the doctor is not responding directly to her query, but his follow-up is actually a continuation of his opening directive move.

Thus we see that the structure of the interview is not such that the patient describes in detail pains, sensations, happenings which he thinks constitute an illness, while the doctor listens and attempts to identify from the lay description the symptoms of one or more medical problems. Instead, the doctor actively seeks the relevant information in a structured way.[40]

6.3 Eliciting Exchanges

So far we have seen that by far the most common type of exchange in the medical interview is the eliciting exchange; and that, unsurprisingly, within the eliciting exchange the doctor almost invariably takes the initiative. Three different types of eliciting exchange can be identified within the medical interview according to their linguistic function: the 'transfer' exchange, the 'matching' exchange and the 'testing' exchange.[41] The most common of these is the 'transfer' exchange in which information is passed from patient to doctor. As with the universal eliciting pattern, a transfer exchange may also have a third, follow-up move which might consist of an monosyllabic acknowledgement of what the patient has said, or sometimes a repetition of the patient's words. Here, in an extended transfer comprising five moves the three participants finally reach some agreement about the drug dosage:

D: (elicit) You know the phenytoin one, that's taken 3 times a day, isn't it?

P: (reply) I can't remember.

C: (feedback) There's only one twice a day.

P: (reply) The other one is three times a day.

D: (feedback) The other one is three times a day. (Text D)

Here, 'convergence' of opinion between the patient and the doctor within the transfer exchange is marked by repetition of the vocabulary and grammatical structure. In its simplest form, the doctor can simply echo the patient's words as a form of acceptance in a follow-up move. The follow-up move generally shows that the doctor is attending to the patient's information and accepts it. Coulthard and Ashby found that the doctor's follow-up is characterized by a fall of intonation from mid-key. However, we were unable to comment on this from our written transcripts.

A 'matching' exchange often follows an opening sequence of 'transfer' exchanges. This represents a mutual confirmation by both speakers of particular piece(s) of information. It is used especially to check off the possible symptoms of a particular medical condition.

D: (elicit) Has he got plenty of energy?

P: (reply) Yes.

D: (elicit) No coughs and colds?

P: (reply) Well, a bit of catarrh, you know.

D: (elicit) No sickness ? No headaches?

P: (reply) Not many. (Text A)

Here, the doctor still retains firm control of the consultation in terms of the 'sequencing' of the information. Where the doctor agrees with the patient's responses in transfer exchanges, and the patient accepts the doctor's hypotheses in matching exchanges, it again indicates that there is 'convergence' between doctor and patient. However, these matching exchanges occurred fairly rarely in our four consultations; and it may be inferred, in comparison with the emphasis placed on them in Coulthard and Ashby (1975), that either matching exchanges are more a feature of G.P. interviews, or that they are not particularly applicable to consultations about epilepsy.

However, in both the educational and the medical situations, questions are not always asked because the person asking them does not know the answer. In a 'testing' exchange, the doctor attempts to check the validity of the patient's information in much the same way as a teacher throws questicns to his or her pupils in order to test their knowledge when he already knows the answer. In this case the information is actually transferred by the questioner in the third, follow-up move on the part of the doctor. Coulthard and Ashby identified this as consisting of a minimal 'good' or 'that's right', or by the paralinguistic feature of high pitch at the beginning of the utterance (in contrast with the fall from midkey which

was characteristic of the transfer exchange). However, the doctor does not always have to agree with or believe the patient's response. In our most interesting example from Text D, the doctor gives an extended follow-up to the reply to a 'testing' exchange which indicates that he does not believe the patient's reply.

D: (elicit) And she's taking all her tablets regularly?

P: (reply) Oh yes - I make sure of that.

D: (feedback) So that's the thing that we're not controlling and until we do so we're not going to see very much progress in other areas.

(Text D)

Since the doctor himself does not know what drugs the patient is on, he has to go on to check the dosages with the parent. Here, in contradiction to what the parent has said, it turns out that she is not in fact totally familiar with her child's drug regimen.

6.4 Divergence, Conflict and Resistance

From the outcome of this 'testing' exchange, it can be seen that both 'convergence' and 'divergence' can occur between the doctor and the patient. Coulthard and Ashby go on to point out[42] other areas in which divergent exchanges can occur. They note considerable tension arising from the disparity between the lay and professional terminology used in the doctor-patient encounter. Symptoms may be ignored leading to the wrong diagnosis, or the doctor may ask the patient to define a particular symptom more precisely, e.g. to distinguish between 'pain' and 'discomfort'.[43] Doctors also display resistance to patients bringing their own diagnoses to the surgery, including their own interpretation of a symptom into professional terminology, e.g. prejudging a headache as being due to tension.[44]

Since diagnosis had already been established prior to these consultations, the issue of interpreting the condition of the patient was not a principal source of concern in our sample. However, some contradiction was seen to occur between the lay and professional evaluation of a patient's medical history. In Text A the doctor is seen to reject the patient's lay evaluation of his son's development as being 'a bit backward':

D: (elicit) And he walked on time?

P: (reply) A bit backward - I should say at 12 or 13 months.

D: (feedback) Oh that's not backward at all.

P: (reply) Well. (Text A)

The concluding follow-up, the evaluative 'well' from the patient, indicates that he is still taking a divergent tack from the doctor. And, indeed it may be that the doctor is cutting the parent off in mid-sentence in order to forestall any further disagreement. However, the parent is not to be outdone:

D: (elicit) His development - when was he toilet trained?

P: (reply) He was a bit backward. (Text A)

The parent's oblique response in this exchange maintains his line of resistance to the professional interpretation. Coulthard and Ashby also maintain that doctors may also "appear to be inattentive or completely disbelieving"[45] of their patients. And, as this interview progresses, other lines of divergence appear. The ensuing chain of matching exchanges does not quite work out.

D: (elicit) Diseases?

P: (reply) Oh measles, chickenpox - um.

D: (elicit) Hepatitis?

P: (elicit) What's that - something to do with the blood?

D: (reply) Hepatitis -

D: (elicit) Now, what did he have in the way of immunization, did he have the triple?

P: (reply) Yes - I think so. (Text A)

And the outcome is that, since the parent does not understand the reference to 'hepatitis', the doctor does not elicit the desired response. However, the doctor is pursuing his prestructured line of questioning so rigidly that he does not break off to explain the term. Just so, the patient's response to the reference to 'the triple' is highly evasive, and the doctor does not follow it up to verify this hesitant response.

Therefore, here we have two areas of divergence between the lay and the professional interpretations of a medical history. One arises from the differing assumptions of the lay person and the professional with regard to the pace of a child's development. And, secondly, the patient just simply does not understand the terminology of the professional, and therefore cannot give an accurate response. These instances of divergence occur because the two participants in the medical encounter speak two essentially different languages. In Bernstein's terminology, the 'primary contextualizing context' of the family and community is providing a different set of concepts to those of the 'official pedagogic discourse' which informs the consultant. However, what is significant here is that for the most part the doctor does not yield to the patient's assumptions. Even where there is conflict, the doc-

tor maintains his stance or ignores any discrepancies. Thus, within the doctor's case notes, the identity of the patient is constructed according to his or her professional criteria. The implicit corollary of this is that the patient is gradually educated, through his or her situational 'cycling' through the different contexts of reproduction into accepting the doctor's version of his story.

However, the dialogic initiation of the patient and the patient's discourse into the medical situation is not without its twists and turns along the way. In the two follow-up interviews (Texts C and D), the increased familiarity of the patient with the professional terminology and their gradual disillusionment with the outcome of the medical encounter appear to prompt the patient to be more prepared to take issue with the doctor. Towards the end of the dysfunctional interview in Text D, the parent overtly challenges the doctor's authority:

P: (elicit) Will they ever go?

D: (reply) Yes - they will. We'll get them under control. There are so many different types and drugs[46] and it's a matter of finding the right one. We'll find the right one, don't worry.

P: (feedback) The one she had this morning was, well, terrible, frightening really. She was out and thrashing about. She didn't know what was happening.

(Text D)

Here, the doctor intervenes to reassert the efficacy of the drug regimens, but the patient remains unconvinced. However, the doctor is able to regain his situation of dominance in the medical encounter, by some fairly nifty 'footwork'[47] at the close as he issues the patients out of the door.

D: (direct) O.K. Susan, we will get them under control - we will. What is so important is to have confidence in us and in yourself, O.K.? And we'll see you in two weeks. There's no need to come here - it'll prevent you having to wait. Just go straight to the Casualty Dept. and ask for me. Alright - take it easy, won't you?

P: (reply) Goodbye - thank you. (Text D)

In the two concluding exchanges, the first reaffirms the efficacy of the drug regimen; but the second directive exchange covertly reasserts the doctor's authority by insisting that the patients can walk straight into the Casualty Department by mentioning his name. Here, by changing the ground, the doctor is able to reassert his authority again. Thus all participants are able to change the tone of the conversation at the end and depart from a fairly testy exchange on terms of cheery conviviality.[48] The parent finally defers to the doctor with a final 'thank you' as she departs with her child.

Also, in one important example, it is seen that the dialogic interaction between the different contexts of professional and lay discourse results in the former actually moving

towards the latter. In one of our interviews (Text B), the term 'electrical test' was used by the doctor instead of 'electroencephalogram' or 'EEG'. In this respect, the doctor can be seen to use a lay rather than professional terminology. Ostensibly this linguistic modulation would appear to be to set the patient at ease, but the ulterior, 'managerial', motive of the use of this euphemism would be to facilitate patient compliance with the text.

Within the interplay of languages from different contexts within the situation of the medical encounter, there can be either 'convergence' or 'divergence' between the doctor's account formed within the contexts of production and recontextualizing of medical discourse; and the patient's account formed within the 'primary contextualizing context' of the family or community. Convergence can be reflected linguistically in similarities and even repetitions of the language of the two parties; however, divergence can be resolved in the last instance by the doctor changing his or her 'footing' in order to regain the initiative.

Ultimately, however, in relation to the progression of the rhetorical structure of the medical interview, our four texts have displayed the tight control that is maintained by the doctor over the text of the medical interview. There is a real homology in terms of the criteria of exchange structure laid down by Coulthard and Ashby. Furthermore, it also appears that the hypothesis that was raised at the end of the last chapter is scarcely getting off the ground. Rather than the

patient being granted licence to inform the doctor on his own terms about his condition, it has been seen that the doctor tends to probe the patient for preconceived notions of the signs and symptoms of the disease, and thwarts the patient's initiative if he or she wishes to disclose details about the case that do not fit into the doctor's agenda. In his control of the 'text' of the medical interview, the doctor exercises established preconceptions of the parameters of the information that he or she wishes the patient to disclose. This also works the other way. For we have also seen that the doctor also has firm, if implicit, preconceptions about what he or she will disclose to the patient. Especially with a particularly stigmatizing and as yet ill-defined condition such as epilepsy, the doctor is seen to be particularly reluctant to make the an explicit diagnosis except under duress.

This is what finally gives the medical interview in its entirety its unique communicative character. In functional terms,[49] it starts with a series of demands for information uttered in the paradigmatic form of the 'question'; and typically ends with a series of gifts extended in the paradigmatic form of an 'offer' of goods and services. The ritualized framework of the medical interview enables the conversion of a denial (a statement of diagnosis) into a dispensation (of symbolic gifts). Rather than being regarded as being symbolically deficient for the withholding information, the doctor accrues symbolic power as the personage endowed with the power to dispense gifts.[50] Furthermore, when the patient does demand that

the doctor utter a statement relating to diagnosis before, or even instead of the dispensation of goods and services, it is clearly "scandalous"[51] in its breach of the expectations of the symbolic terms of the transaction that should take place within the conventions of the institutional discourse of medicine.

6.5 Symbolic Domination

The medical interview consists of a clearly defined **textual** structure made up of: transactions, clearly demarcated by their boundary exchanges comprising a frame and a focus; as well as eliciting, directing, and informing exchanges of varying length and complexity. This structure of the text enables the doctor to maintain an asymmetrical distribution of power within the **mode** of the medical encounter. The exchanges within the medical interview are initiated according to the doctor's prior knowledge of the textbook 'doxa' of the condition which is being examined; and the perceived 'relevance' of the patient's contributions to the exchange is rigorously controlled. The doctor also reinforces his or her privileged access to the authorized text by withholding the appraisal of the patient's condition in order not to disclose the basis of the disposal of goods and services at the close of the encounter - the medical note or the prescription. Thus, although paradoxically the progressive initiation of the patient into the discourse of medicine actually appears to be empowering,

the doctor's command of the institutional context of the interview still permits control to be recovered in a situation of conflict by some strategic 'footwork'.

In this way, the relations of domination of a particular social and professional interest group are imposed upon their clients not just by their symbolic, but by their *actual*, realization within the rhetorical formation of a pedagogic text in the context of reproduction of that modality of pedagogic discourse.

Notes and References

1. The Birmingham group's rank model of the patterns of discourse is derived from Halliday's Categories of the Theory of Grammar (1961). Coulthard's Ph.D. thesis (1970, An Empirical Investigation of Restricted and Elaborated Codes. University of Birmingham, UK) was an empirical study based on Bernstein's theories of elaborated and restricted codes (1971, Class,Codes and Control, vol. I. London: Routledge & Keegan Paul).

2. Sinclair, J. McH., & Coulthard, M.(1975). Towards an Analysis of Discourse. Oxford: Oxford University Press; Coulthard, M. (1985). An Introduction to Discourse Analysis. London: Longman, pp.120-145.

3. Coulthard, M., & Ashby, M.C. (1976). The analysis of medical interviews. In M. Wadsworth, & D. Robinson, D. (Eds.). Understanding Everyday Medical Life (pp.13-31). London: Martin Robertson.

4. E.g. Byrne and Long's 1976 study. In Byrne, P.S., & Long, B.E.L. (1984). Doctors Talking to Patients. London: Royal College of General Practitioners.

5. Coulthard and Ashby (1976), p.69.

6. Coulthard and Ashby (1976), p.72.

7. Coulthard and Ashby (1976), p.70.

8. Coulthard and Ashby (1976), p.72.

9. Halliday (1961, 1985).

10. Coulthard (1985), p.122; c.p. the discussion of Halliday's treatment of the speech act 'threat' above (Chapter 5. p, 147 ff.).

11. Coulthard (1985).

12. Chapter 1, p. 6.

13. E.g. In Swales, J. (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press.

14. E.g. Byrne and Long (1984); also Coulthard and Ashby analyse 19 interviews between the G.P. and the patient in the surgery, and 5 first interview between a consultant and patient in a hospital outpatient department (1975, Talking with the doctor. Journal of Communication, 25, 3, 240-7).

15. West, P. (1976). The Physician and the Management of Childhood Epilepsy. In M. Wadsworth, & D. Robinson, D (Eds.). Understanding Everyday Medical Life (pp.13-31). London: Martin Robertson.

16. West (1976), pp.16-17.

17. As documented in West, P. (1976).

18. Coulthard and Ashby (1976), p.86.

19. Coulthard (1985), p.123.

20. Due to the shortcomings of only having access to written transcripts of the medical interviews from West's ESCR study, it was not possible to comment upon the phonological patterns which marked any stage in the medical interview.

21. Coulthard (1985), p.12.

22. Coulthard and Ashby (1976).

23. Coulthard and Ashby (1976).

24. Coulthard and Ashby (1976).

25. Coulthard and Ashby (1976), p.74.

26. Coulthard and Ashby (1976), p.74.

27. Coulthard and Ashby (1976), p.76.

28. Coulthard and Ashby (1976), p.81.

29. Coulthard and Sinclair (1975), pp.25-27.

30. West (1976), pp.27 ff.

31. West (1976), p.28.

32. West (1976), p.27.

33. This conforms with West's interpretation (1976, pp.17-18).

34. Unpublished database to West's (1976) paper.

35. Coulthard and Ashby (1976).

36. Coulthard, M., & Montgomery M. (Eds.). (1981). Studies in Discourse Analysis. London: Routledge & Keegan Paul.

37. Coulthard and Montgomery (1981), p.22.

38. Chapter 5, p. 161 ff.

39. Coulthard and Ashby (1976), p.142.

40. Coulthard and Ashby (1975), p.143.

41. Coulthard and Ashby (1975).

42. Coulthard and Ashby (1975).

43. Coulthard and Ashby (1976), p.82.

44. Coulthard and Ashby (1976), p.82.

45. Coulthard and Ashby (1976), p.85.

46. Sic.

47. Goffman describes a change in "footing" as implying "a change in the alignment we take up to ourselves and others present as expressed in the way we manage the production or reception of an utterance. A change in footing is another way of talking about a changing our frame for events." This is to say that speakers will often switch "codes" at the openings and closings of a formal, ritualized exchange (such as a medical interview), often into a less formal style of speech. (1981, Forms of Talk. Pennsylvania: University of Pennsylvania Publications, p.128) .

48. Thus, the tone of the exchange changes as well as the code. (Goffman, 1981, p. 127-154).

49. Halliday (1985), p.69.

50. For a discussion of the symbolic relations of gift exchange, see Bourdieu (1977), pp.171 ff.

51. See also Bourdieu's discussion of the breach of the conventions of "symbolic capital", (1977, pp.171 ff.).

CHAPTER 7

EPISTEMOLOGICAL SPACE and SOCIAL SPACE

If a conflict over the distribution of power in the field of the reproduction of medical knowledge, arises *between* the professional interest group of doctors and their clients, then the conflict over the distribution of power in the field of the production of medical knowledge arises between different interest groups *within* the medical profession. Within the professional interest group which occupies the field of the production there are multifarious rival groups and subgroups who vie for a more dominant position in the ownership and control of the official discourse with the subsequent accumulation of cultural capital.

The medium of this struggle is again the medical text. We saw in the last chapter that in the field of reproduction of medical discourse, the asymmetrical distribution of power between the doctor and the patient was maintained by the rhetorical structure of the medical interview. Within the field of production of medical discourse, this struggle is realized within the rhetorical structure of the heterodox[1] text of the scientific research report. The dialogical framework of this modality of text enables different subgroups and groups within groups from the social and linguistic community of scientists to jostle with each other discursively for participation in the production of the official discourse, the "doxa". The reward for participation in the official dis-

course is the accrual of capital, both cultural (the ever-lengthening list of publications which lends one status both departmental - in the context of the workplace, and global - in the context of the international conference; and leads to further promotion) and material (in the form of copyright payments and the accrual of resources in the form of research grants). The criteria for participation in the production of the official discourse are created and maintained by the gatekeepers of the recontextualizing field, the referees, editors, indexers and publishing houses.[2] The symbolic token of the accumulation of cultural capital is the publication of one's text in a journal with as high a symbolic profile as possible or, even more distinctive, to have one's text incorporated into the "doxa", the unified text of orthodox knowledge compiled in the textbook.

At the end of Chapter 4, two modalities of medical discourse were identified as operating within the primary field of the production of medical knowledge: one was the epidemiological research report, based on the principle of shared identity, which was termed the nomographic text; and the other was the medical case history report, based on the specialized identity of the patient, which was called an idiopathic text. While both of these forms of text operate within the field of production, we will go on to see that there is sufficient difference in their "rationale"[3] to identify two distinct genres. One of the bases of this rationale will emerge as being precisely their respective capacity to

assimilate varying degrees of heterodoxy within their generic forms. In as much as it was noted that the nomographic text is currently superseding the idiopathic text as the dominant genre of medical research report,[4] it will also be ascertained in the next two chapters that the nomographic text also emerges as the more heterodox modality of research report.

Thus, the dominant discursive form, or genre, which is produced within the primary context of medical discourse is the nomographic text, of which the epidemiological research report is the paradigm. The principal model of medical research report follows the standard format of other forms of research report in the broader field of the empirical sciences, having four parts: Introduction, Methods, Results and Discussion. Various suggestions have been put forward with regard to the discursive structure of the scientific research report. The main emphasis of these analyses has been upon the organization of the research article (nomographic text) rather than upon the case history (idiopathic text). This is probably due to the fact that the nomographic text had already become the dominant genre within scientific discourse by the time of the emergence of linguistic discourse analysis; and also that it tends to be a more complex and more evolved text. In this chapter we shall continue to examine the **textual** resources of medical discourse by analysing the rhetorical **mode** which operates in the primary context, the field of production. We shall go on to trace one particularly compelling model for the discursive structure of the scientific re-

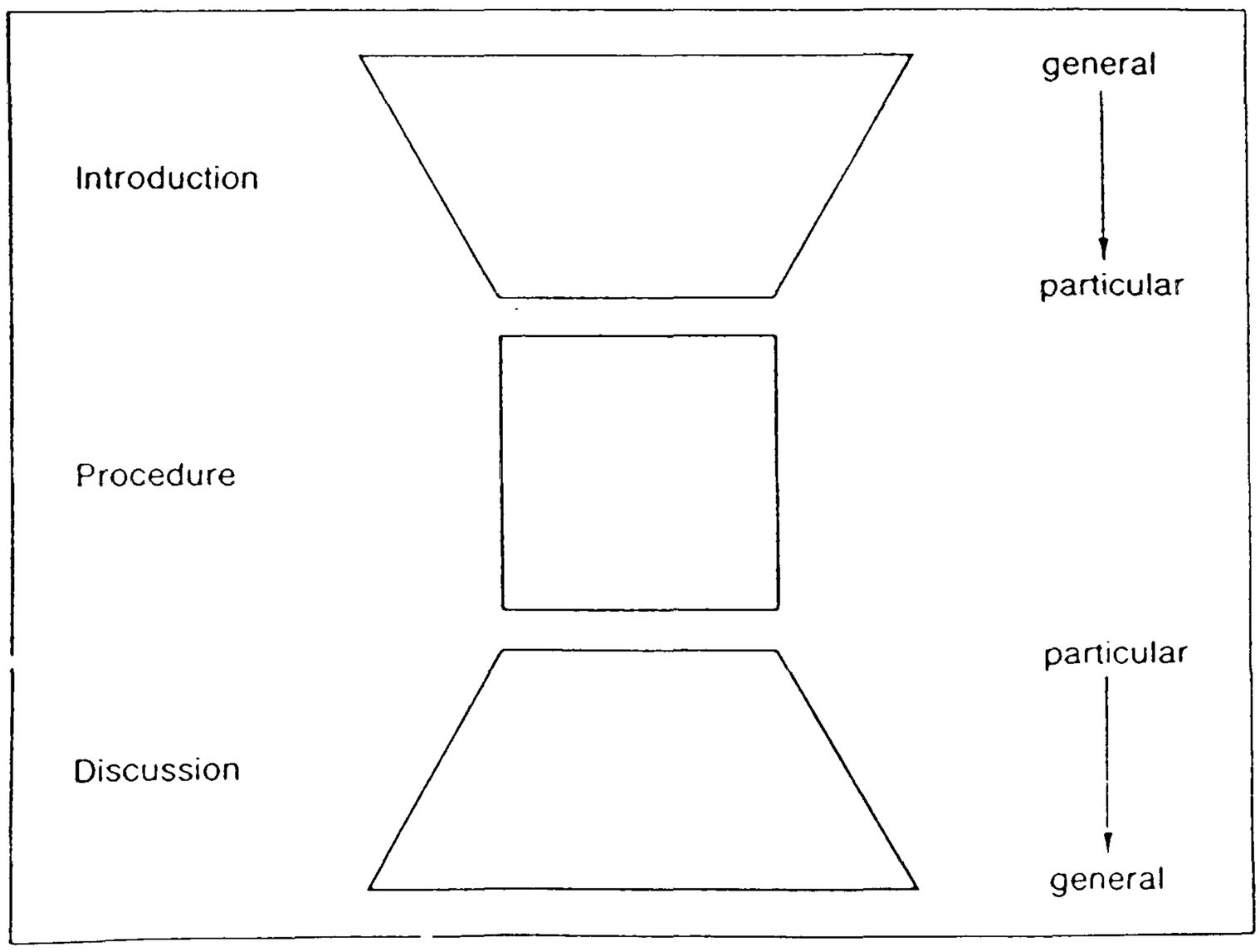
search article and see how it works when applied to four sample research papers in the field of medicine.

The most enduring account of the macrostructure of the scientific research paper is that put forward by Hill et al:

> Research papers make the transition from the general field or context of the experiment to the specific experiment by describing an inadequacy in previous research that motivates the present experiment.[5]

Thus, the figure of the hourglass below (Fig. 1), illustrates how the frame of reference in a research paper is classically described as moving from the general to the particular and then back to the general again.

Fig 7.1 Overall Organization of the Research Paper.[6]



Hill's account powerfully informs John Swales's two definitive offerings[7] on the subject of the research article, in which:

> The Method and Results sections then continue along a narrow, particularized path, whilst the Discussion section mirror-images the Introduction by moving from specific findings to wider implications.[8]

However, the general frame of reference at the ends of the hourglass which represent the more expansive Introduction and Discussion sections, also represents the textual zone wherein the competition for cultural capital is played out. By contrast, within the narrower framework of the Methods and Results section in the body of the paper, the modality of argumentation is much less explicit.

In a 1981 monograph, John Swales originally proposed a dynamic 'process' model for the Introductions to scientific research papers, in which he traced four discrete rhetorical 'moves' which writers took in order to negotiate their knowledge claims for that particular piece of research. Swales's 1990 book reduces the number of discrete moves which the author finds in the Introductions to three:

Move 1: Establishing a territory

Move 2: Establishing a niche

Move 3: Occupying the niche

Each of these three moves in the Introduction, is a spatial metaphor for the research writer's discursive struggle to establish a space within his or her epistemological field. The analogy of space can be applied to a number of features of the article Introduction:

> the need to reestablish in the eyes of the discourse community the significance of the research field itself, the need to situate the actual research in terms of that significance; and the need to show how this niche in the ecosystem will be occupied and defended.[9]

Swales's studies of the Introductions to research articles[10] have been by far the most detailed discussion of any part of the research paper to date, and the emphasis placed on this section in particular points to the importance of the intertextual functions of the research article. However, each of the four main sectors of the research report have distinctive textual features which can be defined. This chapter will look at the Introduction, where the research writer challenges competing interest groups within his or her particular field of specialization, while the next chapter will focus upon the relatively less argumentative Methods, Results and Discussion sections; and goes on to compare the research article with the medical case history.

Four medical research papers were selected mainly for their topicality to certain issues in the social sciences,

provided that they adhered broadly to acceptable conventions for research report writing.[11] Two main types of medical research article were identified:

> those based on clinical trials, where, for example, separate groups of patients are given different treatment for an ailment and the results are compared; and those based on epidemiological studies, where groups are reviewed with the help of medical records and interviews, but no actual clinical trial takes place.[12]

Out of our four nomographic texts (Texts E-H), Texts E[13] and G[14] were epidemiological surveys; while Texts F[15] and H[16] were clinical trials. In the following chapter we shall go on to compare briefly the overall discursive structure of the medical research article with that of the case history.

7.1 Staking a Claim

In keeping with his ecological metaphor, Swales calls the opening 'move' (Move 1) in the research article Introduction "establishing the territory". This is further subdivided into three possible 'steps' that the writer can take.

Move 1: Establishing a territory

Step 1: Claiming centrality

Step 2: Making topic generalizations

Step 3: Reviewing items of previous research

Selection of one or more of these three steps may be either combined in or omitted from the research article Introduction. However, the implication of the designation of these steps in numerical order does imply their sequential patterning when they do occur.

Centrality of subject matter (Step 1) can be shown either by indicating the extent of current interest in the topic at hand or by emphasizing its importance; by showing that the topic is prominent in the field; or by claiming that there are a number of other researchers working in the field. Where centrality is claimed, this generally (90% of the time) comes at the beginning of the article itself. The second potential step consists of 'making a topic generalization'. This type of statement tends to be a more 'neutral' kind of statement than the first step, and again it falls into two types. The first type attempts to maintain the reader's interest in the field by referring generally to the present "state of the art - of knowledge, of technique...or of current requirements for further progress".[17] The second type of topic generalization gives information about phenomena within the topic area in order to establish the field by building up the importance of the data.

Before we go on to define Move 1 Step 3, let us look at the extent to which the very opening sentences of our four papers from the BMJ adhere to this formula.

Text E: (S1) The child health and education study has prospectively followed a cohort of 16,004 neonatal survivors born in one week in April 1970. (S2) Detailed clinical information was obtained about children suspected of having seizures.

Text F: (S1) There is evidence that psychological ill health occurs in a substantial minority of cancer patients. (S2) Consequently, increasing attention is being paid to the emotional and physical well-being (that is the quality of life) of patients.

Text G: (S1) Several studies have examined the risk of sexual transmission of HIV from infected men to their female partners...

Text H: (S1) For about 40 years in most Western countries there has been a steady move away from treating patients with a serious mental illness in mental hospitals to caring for them in the community. (S2) In Britain this trend has been bolstered by official policy.

Here, three of our four papers would seem to deviate from the standard model of Move 1 suggested by Swales.

Text E does not attempt to establish the territory at all in any way that accords with of Swales's three steps. Instead of attempting to locate its research within the context of

previous research, it plunges straight into an assertion about its own methodology in the first two sentences of the Introduction. Furthermore, Texts F and H do not employ a Step 1 statement of centrality; but prefer instead to open with a more muted Step 2. These all turn out to be statements about knowledge or practice rather than the second type of Step 2, a statement about phenomena. Text F also would seem to start with a Step 2 with the muted "There is evidence...". This, again, is a statement about the current state of knowledge in the field. However, Text F does then revert in sentence 2 to more of a Step 1 theme, "Consequently, increasing attention is being paid", claiming centrality for the subject area in question. So in Text F we have both of Swales's steps for Move 1, but in an inverted order. Text H also opens with a Step 2 statement relating to the practice of treating patients with a serious mental illness. An oblique claim for centrality might be deduced from the second sentence, which goes on: "In Britain this trend has been bolstered by official policy", but this is certainly nonstandard. It is only Text G which starts with a clearly defined Step 1 statement, but still not using the key lexemes *interest* or *importance* so often associated with opening sentences. The opening sentence merely indicates centrality of subject matter by relating that several other studies have been being carried up to this point in the field of heterosexual transmission of AIDS. This is illustrated by the key phrase: "Several studies have examined..."

In contrast with Swales's general claim for the opening move of the research article Introduction, we find in this limited sample that lexemes, such as *importance*, *interest*, *classic*, *well-known*, do not appear to be generally used in the opening moves of 4 research articles taken at random from the BMJ. Moreover, Swales's Step 2, would actually seem to have some sort of prominence over the occurrence of Step 1 at the beginning of these papers. We have even found one instance (Text F), where a Step 1 comes after a Step 2 opening.

However, while the actual ordering of the two opening steps does not appear to be universally applicable, we have still gained some insights at this first stage of the model. An initial move can be defined. Also, different types of moves - those claiming centrality (Step 1), or those stating a knowledge or practice (Step 2) - can be identified. The most problematic feature which arises here relates to the actual order of occurrence. This could be avoided if the Swales's model was modified so that Step 1 did not always have to precede Step 2. We could view both Swales's Step 1 and Step 2 as alternate versions of a combined first step, which may occur once or several times, in different forms and variant orders.

Although it may still be hard to predict the exact ordering of the exponents that an author will use to establish the territory for his or her research, all four research papers open with a clear rhetorical attempt by the author to establish the significance of a particular area of research. In

the next section we go on to examine the less equivocal way in which the rhetorical device of the literature review is utilized by the discourse community of medical researchers in order to monitor and revise their epistemological field.

7.2 Weighing up the Competition

We will now move on to examine Swales's classification of the third step in Move 1 of the article Introduction - the literature review.[18] While the previous two steps in Move 1 are pretty much optional for the research writer, some sort of literature review is obligatory. In the literature review:

> ...the author needs to provide a specification (in varying degrees of detail) of previous findings, an attribution to the research workers who published those results, and a stance towards the findings themselves.[19]

Essentially these three aspects are displayed in the text by the way in which the author's name is positioned, the type of verb which is used for the reference, and the tense which is used to make the reference. Yet, the review of literature is performing an intertextual function which is somewhat larger in scope than merely re-examining the empirical support for the case in hand. Essentially, it is a discursive means of weighing up the competition for a particular epistemological space.

The way in which the author's name is placed in the text is represented by the different styles of author citation. And here Swales makes a distinction[20] between two types of citation: 'integral' and 'non-integral'. In an 'integral' citation, the secondary author's name actually appears in the main body of the sentence within the text; whereas in a 'non-integral' citation, the secondary author's name is only referred to in parenthesis or via a superscript number or some other means of referencing. With 'integral' citations, the name of the author can be shown[21] as subject, as passive agent, as part of a possessive noun phrase or after "an adjunct of reporting".[22] Examples of the 'non-integral' type display parenthetical as well as superscripted citations.

The second feature of Move 1 Step 3 is the authorial choice of verb. The research article author may or may not use a reporting verb (*show*, *establish*, *claim* etc.) to refer to the previous literature.[23] This distinction is reasonably clear apart from one or two verbs, e.g. *find* and *be associated with*, which can be used either as reporting or non-reporting depending on their context. Furthermore, where the research article writer does use a reporting verb, he or she can choose whether to select from a class which implies support of the proposition in question (e.g. *show*, *demonstrate*, *establish*, etc.);[24] or from a class which is altogether more tentative in its commitment (*suggest*, *propose*, *examine*, etc.). Thus the stance of the research article writer towards his or her sources can be indicated powerfully by the choice of verb at this stage.

Finally, in Move 1 Step 3, the use of tense is a more than incidental feature of reviewing previous research, and has proved a major preoccupation of many of the studies in discourse analysis in this area.[25] Generally, over 90% of all verbs used for citations can be classified into the use of the Past, the Present Perfect and the Present Simple tenses; and the reasons for the selection of these tenses can be rationalized as follows. Obviously in narrative texts the selection of the different tenses will refer simply to the temporal aspect of 'presentness'. However, in expository texts a shift from the Past through the Present Perfect to the Present, is not seen in temporal terms, but in terms of the increasing generality of the findings. Thus the allocation of tense and time within the literature review of the research article has important implications about the truth value of a particular statement; as well as implications about its assignation to a particular point in time.[26] Let us turn again to our 4 papers to see these processes at work in the literature review (Move 1, Step 2).

Text E has a very cursory one sentence review:

Text E: (S3) Only a few studies have been large enough to obtain similar data about children having seizures.

There is no evidence in this generalization of integral citation. However, the selection of the Present Perfect tense here does imply an element of truth in the link between the size of

previous studies and the validity of their data. Also within this third sentence of the Introduction, is a paradoxical statement of the centrality of the research, which we have been led to expect at the beginning of the paper. Although the authors state that only a few studies have been large enough to obtain data similar to their own, the implication is still that there is a considerable amount of work going on into the study of childhood epilepsy, if not on a large enough scale to yield significant results. Thus, this sentence performs a second function, which is to make an implicit claim for the centrality of the subject matter. It is possibly because of its implicit nature that stylistic considerations demanded that it be embedded well into the Introductory section.

Text F: (S3) Various psychotherapeutic procedures...have been tested.....

(S4) Most of these clinical trials were limited....(S5) Six of the studies reported...but two studies showed.....

As may well turn out to be the general rule in these short medical research articles, non-integral reporting is again the order of the day in Text F. Nevertheless, we can still observe some of Swales's specifications for Move 1, Step 3 at play. Swales's designation of the Present Perfect tense[27] is corroborated again (S3) in a general description of the field of knowledge. The Past tense is then used (S4) to home in on the fact that most of the trials "were limited to patients with breast cancer" - a limitation that happened in a

more specific period in the past. Thus we have the use of the Present Perfect to indicate a span of research leading up to the present; and the use of the Past tense to indicate a delimitation taking place at a particular time in the past. No reporting verbs are used in the first two sentences, but they are introduced in the longer S5. Of these, the weaker ('reported') is used to introduce a positive outcome from previous research into psychotherapy with cancer patients; while the stronger ('showed that') is used to introduce a negative outcome. Based on Swales's analysis, it could be said that the writing is stylistically weak here, since it would be better to use the strong reporting verb to support the positive results which support one's own research; while reserving the weaker verb to be slightly dismissive of the negative results. Thus, in the literature review (Move 1, Step 3) of Text F, it can be seen that, although the authors used Swales's model somewhat counter-intuitively, nevertheless the three main features that he described for the literature review emerge. These function not just as a formal aspect of this section of the paper, but as an integral part of its meaning.

The lengthy literature review of Text H employs a negative orientation (emphasized in the italicized phrases) similar to Text E but, if anything, even more strongly stated:

Text H: (S3) Initially, *little research evidence* was produced...but in the past two decades several controlled studies...have compared...(S4) The outcome measures used in the studies varied,

....(S5) *No study* found... (S6) At the end of the studies the patients...still had... (S7) The importance of continuity of care was illustrated by...

This emphasis on the negative aspects of previous research is unusual in the literature review and is normally kept more for Moves 3 & 4, when a transition is being made into the body of the paper proper. Here, again we find no evidence of integral author citations in this short paper. The allocation of tenses, however, follow one of Swales's dictums perfectly. The Present Perfect tense is used in just one instance (S3, "have compared") when the full extent of the research in the field is being described. Otherwise, the tense remains solidly in the Past. Out of 7 main verbs used in the literature review, 5 are reporting, and 2 are used descriptively. The reporting verbs vary in intensity from *varied* and *compared* through *produced* to *found* and *was illustrated*. Yet, paradoxically, both the supportive verbs *produced* and *found* are used in association with negative findings (S3, S5). Thus the only supportive reporting verb to be used with positive findings is *illustrated* (S7). One can say that this adds stylistic emphasis to the last citation in the literature review; but otherwise, it does not appear that the authors have used the options offered them in the choice of reporting verb particularly strategically.

In the shorter two sentence review of Text G, we find the by now customary absence of integral citations:

Text G: (S3) HIV prevalence...ranges... (S4)...anal sex etc.....in men have been shown to significantly increase the risk of transmission.

In terms of tense, while previous papers have yielded contrasts between the Past and the Present Perfect tenses, Text G gives us a 'classic' contrast between the Present tense (S3) and the Present Perfect (S4). Step 3 opens by making an implicitly factual, generalizable statement supported by the Present tense ("ranges") relating to the current reported prevalence of HIV among female partners of infected men. It goes on to invoke the Present Perfect to demonstrate ("have been shown") the author's general area of enquiry - into the role of infected men as a factor of increased risk in the transmission of the virus. The authors here employ their semantic choice of verb in perfect accordance with Swales's model to reinforce their message. The review starts with a 'neutral' descriptive verb ("ranges") when dealing with an area of study (female-male transmission) of lesser significance; but then switches to a positive reporting verb ("shown") as it swings round to its point of emphasis (the increased danger of male-female transmission). So the authors' orientation in tense and lexicon both supports and is endorsed by Swales's model.

We can draw some conclusions relating to the three defining parameters of the research article literature review (Move 1, Step 3): author citation, verb selection, tense. First, we have found no instances of integral citation

(mention of the author in the text) within this short series. This leads us to suspect that the incidence of actual integral reporting is fairly rare in shorter research articles in the field of the medical sciences. Indeed it has been the author's experience that integral reporting is more commonplace in longer reports and theses, where there is more space to create a varied style.[28] The use of author citation would appear to be a relatively invariant feature of medical research reporting at this stage, and therefore not that significant as a stylistic variable. Secondly, however, we have noted considerable variety in the author's semantic choice of verb, ranging from "neutral-descriptive", through "weak-reporting", to "strong-reporting". This can be used to greater (Text H) or lesser (Text G) degrees of efficiency by the authors. Finally, the use of tenses in our four papers has been seen to accord with Swales's prescriptions, being limited in declining order of frequency to the Past, the Present Perfect, with only one instance of the Present. The Past tense is used chiefly with reporting verbs or with tests carried out at specific periods in the past. Most predictably, the Present Perfect seems to occur at least once in each introduction, with great specificity, when it is time to give an account of the paper's general area of inquiry. Where the Present tense is used, it is used to make a statement about a generalizable fact. However, there is one certainty about Move 1, Step 3 in these four BMJ papers - it always comes after one or both of the previous steps. Therefore, the issue of the placing of the

literature review in the research article Introduction is not in question here.

7.3 Establishing a Niche

The second move (Move 2) of the Swales's 1990 model describes how the medical research writer establishes a niche for his or her research. Again, Swales defines a number of possible steps for the process of niche establishment:

Move 2: Establishing a niche
- Step 1A making a counterclaim
- Step 1B indicating a gap in the secondary source
- Step 1C raising a question about the source
- Step 1D indicating continuation of research trad.

In contrast with Move 1, this second move consists of just one step, which can be selected out of four alternatives outlined above. These Swales maintains are mutually exclusive. To what extent this is true will emerge from a further examination of our sample of research article Introductions.

The first three modalities of niche establishment are usually indicated by an adversative sentence connector (*however*, *nevertheless*, *yet*, *unfortunately*, *but*, etc.). It is rare that the research article author will produce an out and out declamatory statement about his or her source materials; rather there will be some modulated statement regarding the

relative limitations of their knowledge claims. There are a variety of linguistic exponents for establishing a niche, too numerous to examine at length here.[29]But it is worth noting that where the research niche is concerned with establishing the continuation of a particular research tradition, it is more likely that a non-contrastive sentence connector, such as *therefore*, will be found. Finally, Swales points out that the progression through the three moves of the article Introduction is by no means restricted to a linear model. In this respect, the second move may be repeated after successive reviews of separate items. In this case, we may find cyclical recurrences of Move 1/Step 3 and Move 2.

Our four papers varied greatly in their constitution of Move 2, and it has to be said that none of them actually conformed to the norms set out by Swales.[30] However, they all use at least some rhetorical device to create a niche for their research. The lack of conformity in our four examples seems to stem largely from a variation in length: Text F and G contain relatively long introductory sections; while Texts E and H have highly condensed introductory sections. Let us start with Texts F and G.

Text F has as its second paragraph a long digression which discusses the methodological problems confronting clinical trials in psychotherapy for patients with cancer. This paragraph is as long as the rest of the Introduction, and is situated where Move 2 would normally be found. However, the final sentence of the first paragraph in Text F can be class-

ified as a recognizable Move 2.

Text F:(S6) Differences in stage of disease, type of psychological treatment, and outcome measures preclude any general conclusions.

Here, the verb phrase ("preclude") carries the weight of the lexical negation; although this move does not, in fact, focus on a gap in the literature. Rather, it raises a question, or rather three questions, about the generalizability of previous research. These are questions which presumably the current authors propose to answer by giving strict attention to the rigour of their methodology as indicated by the long digression to follow.

Text G is also unusual not just in its absolute, but also in its proportionate length, constituting as large a part of the entire Introduction as the entire first move; and being half as long as the Move 3 to follow. Possibly because of its length, the authors do not feel compelled to begin with the traditional adversative connector. However the opening clause can be seen as a more developed 'adversative clause', actually giving the reasons for the hiatus in the literature:

Text G:(S4) Since many more men are infected with HIV than women in most developed countries...

This then leads up to the first statement indicating a gap in the literature:

...transmission from infected women to their male partners has been poorly studied.

This time the gap is signalled lexically in the adverbial phrase ("poorly") while the verb ("studied") is neutrally descriptive. The following two sentences that constitute this move open with quasi-negative quantifiers: the word, "Even"; and the phrase, "Only one large".

Text G: (S5) Even in regions...few data are available...

(S6) Only one large study...has been published.

These can be classified as adversative since they compound the gap statement. In S2 the gap is indicated by the adjectival phrase "few (data)"; while in S3 the adverb *only* is seen through into the only gap indication in the sentence "Only one large study...". The verbal phrases in both the last two sentences ("are available","has been published") again remain neutral in their tone.

By contrast, both Texts E and H conflate the Move 2 with the literature review. For Text E the adversative (S3) "Only a few.... large enough...." combines a Move 2 rhetorical device within the Move 1 Step 3 literature review. The same conflation takes place within Text H, which also does not appear to have a recognizably separate section for Move 3. The introduction would appear to end its first paragraph with the Move 1

Step 3 literature review; and then to start the next with its Move 3. However, we can now reassess the function of the indicators of negation that we noted as being embedded within the literature review of Text H: (S3) "...little research evidence..." and (S5) "No study found....". The negative slant of this section would indicate that the niche is being implicitly created for the present research within the rhetorical construction of the literature review, without a separate evaluative passage being tacked on the end. So that in Text H, we can hypostatize another instance of a conflated Move 1 Step 3 + Move 2.

Only two of our research papers (Texts F and G) appear to have discrete Move 2 sections which create a niche for the current research in at least one of the ways suggested by Swales. And these are somewhat obscured by other digressions going on in this section. In our other two papers (Texts E and H), the niche is created as part of the literature review itself. However, if the different sections do not appear as neatly as Swales has predicted, we do find that the rhetorical gestures that are made by the authors even within one sentence, e.g. the use of adversative connectors and a modulated assertion regarding the knowledge claims of other research in the field, are very much a part of this stage of writing the research article Introduction. Thus, while Swales's ordering of events may have to be taken with a pinch of salt, his observations about the exponents of functional micro-acts within the text still hold true within our sample of articles and

constitute an important way in which the medical research writer negotiates a position for his contribution towards what counts as current medical knowledge in competition with other researchers in the field.

7.4 Occupying the Niche

The third move (Move 3) found in research article Introductions is when the research article writer indicates that he or she is about to offer up his or her own approach in order to fill the gap defined in the previous move, thus occupying the research niche previously described. In this respect the creation of the second move almost always dictates that the challenge be taken up by a conventional Move 3. Again, there are three sequential steps that can be taken within the third move.

Move 3: Occupying the niche

Step 1A	Outlining purposes
Step 1B	Announcing present research
Step 2	Announcing principal findings
Step 3	Indicating research article structure

It is virtually obligatory to carry out Step 1, in which the research article writer either indicates the main purpose of his or her research; or describes what he or she takes to be the main features of their project. These have been described

respectively[31] as alternative "teleological" and "ontological" steps. Various deictic elements indicate this first step of Move 3: e.g. *this*, *the present*, *we*, *here*, *now*, etc.[32]. However, there are two further options that are found in Move 3. In some papers, the first step can be followed by a brief review of the principal findings of the writer's research. This example constitutes Step 2 of Move 3. However, a third step in Move 3 can also be provided when Step 1 is followed by an outline, not of the principal findings, but of the structure of the report.

Our four papers were much less problematic in their adherence to the hypostatized structure of Move 3 than they were to that of Move 2. So we can return to looking at them in their order of appearance.

Text E: (S4) This paper reports on the study of children who had one or more afebrile seizures by 10 years of age.

This Move 3 is a simple one sentence description of what the authors consider the main features of their research. That is to say, it is what Swales calls[33] an "ontological" rather than a "teleological" Move 3. Structurally, Text E exhibits a highly typical Move 3 and illustrates various characteristics outlined in Swales's model. First, it begins with the deictic "This paper...", which occurs early - in fact in the initial position in this Move 3. Secondly, it exhibits what Swales calls[34] a "collapsed structure", which is a feature of re-

search article Introductions not constrained by any style-sheet restrictions in this regard e.g.:

Standard: In this paper, we report...

Collapsed: This paper reports.....

Thirdly, in keeping with cases where the deictic refers to genre (*paper*, *report*, *note*, *review*, etc.), the tense is restricted to the Present ("reports"). And fourthly, but by no means least, this first sentence (S1), as prescribed by Swales, picks up the key idea which was laid out in the earlier move: " ...seizure disorder in childhood".

Coming after the long methodological digression described above, Text F's third move is short and to the point; so I will quote it in its entirety.

Text F: (S17) The aim of the present study is to determine the effect of adjuvant psychological therapy, a treatment programme we have developed, on the quality of life of patients with cancer.

Text F, Move 3 makes for a good contrast with Text E. Here we have a third move which does not describe the research in question, but states its purpose ("The aim of..."); i.e. this is a "teleological" rather than an "ontological" Move 3. A number of more detailed contrastive features can be described. First, the deictic element ("the present study") does not come in the initial position. This is to be expected from standard

statements of aim or purpose ("The aim of..."; "The purpose of..."; etc.). Secondly, the deictic does not refer to the genre of the report (*paper*, *report*, *note*, *review*, etc.) as in Text E; rather it refers to the type of inquiry (*investigation*, *study*, *experiment*, etc.). According to Swales,[35] deictic reference to genre is generally limited to the Present tense; whereas deictic reference to mode of inquiry may use either the Present or the Past tense. However, obviously the particular lexical choice of this deictic phrase ("the present study") will still limit the selection of tense in the verb (*is*). Thirdly, the deictic phrase here is a standard form, in contrast with the collapsed form of the previous paper. The final point of contrast with Text E, Move 3 is that there is no emphatic follow-on from its Move 2. There is a substitute of the synonymous phrase "(adjuvant) psychological therapy" (Move 3) for "psychological treatment" (Move 2); but this is no more than one would expect from a normally cohesive piece of writing.

Text H offers us a different style of longer Move 3, which again provides an informative contrast with the previous two papers.

Text H: (S8) We conducted a...study...to determine...(S9) The objective was to evaluate...(S10) We report here the outcome at three months, which includes the period...

Here is a three sentence Move 3, with the first two sentences in the Past tense, and the last in the Present. While this section seems at first sight to simply describe the "study", scanning forward in the text, we can see that the "to determine" does in fact link forward to "The objective" to indicate that the first step here is in fact an announcement of the aims of the research (teleological).

However, this does combine with a Step 3 (S10), which outlines at the end some of the anticipated structure of the report. The Move 3 opens with the deictic "We", a deictic still serving as a marker of the opening of the new move. The opening verb ("conducted") is in the Past tense for the first time, taking advantage of the possibilities that have been described, when the sentence refers to mode of inquiry rather than genre. The aims of these are more explicitly referred to in the second sentence (S9), with the verb ("was") still in the Past. Finally, we have a reprise of the deictic "We"(S), followed here by the verb ("report") in the Present tense. Here, of course, the verb itself refers to genre rather than the mode of inquiry, so the Present tense would seem to be more appropriate on the basis of our hypotheses so far. Moreover, stylistically the Present tense is an effective nuance as the research article Introduction comes to a close, to act as a bridge with the main body of the paper. However, we have to notice the contrast with the previous two papers, where the Present tense came in the initial position.

Text G is another three sentence Move 3:

Text G: (S7) We present the results of a European multicentre study, the aims of which are to..., to...; and to... (S8) The preliminary results...have been published. (S9) This paper focuses on the analysis.....

This offers a Move 3, Step 1 (S7), which is a detailed description of the aims of the study (teleological), of which three are outlined. The second sentence is a parenthetic 'irregularity', in which the authors give a necessary aside relating to the previous publication of some of their results. Then, the important S9 constitutes a Step 3, where the authors anticipate the structure of their report, albeit in the most general terms. S7 opens with the deictic "We", followed by the verb in the present tense. Far from representing a collapsed form here (e.g. "The aims of this study are to....") the authors here verge on verbosity. The relative prolixity of the opening phrase of S7 serves two purposes: first, to signal the opening of Move 3; and secondly, as a stylistic, slightly grandiloquent, flourish ("We present.."). It is, after all a "*European multicentre* study", something not to be taken lightly. The second sentence, mentioning the preliminary publication of results is nonstandard, and an interesting insertion into Move 3 at this point. Finally, in the last sentence, we have the initial deictic "This paper" + Present tense for the first time in the closing sentence of an research article

Introduction. This introduces a Step 3 anticipatory outline of the structure of the report - an analysis of the risk of female to male, and male to female transmission of the HIV virus. The choice of lexis and tense here, as in Text H Move 3, Step 3 above is an indicator of the end of the research article Introduction and, again, acts as a bridge to the Methods section to come.

Move 3 would seem to be the least problematic of the three moves of the revised model for research article introductions. The descriptions that Swales gives us can be readily applied to deictic signals (*we*, *this*, etc.), to the use of collapsed and standard sentence structures, and the allocation of tense with different deictic referents (genre vs. inquiry). The description of the three subsidiary steps would also seem to be appropriate, with Steps 1A and 1B being mutually exclusive, and followed (in Papers C and D) by a Step 3.

7.5 Epistemological Space and Social Space

It is possible to quibble at some length about the precise sequencing and definitions of the various categories of moves and steps that Swales proposes here; but a far larger corpus would be required to define this with any greater precision. There is, however, just one major proviso that has to be put forward with regard to Swales's model, and that is the reinstatement of the literature review as a discrete move as proposed in Swales's original 1981 Paper. The reasons for

Swales's incorporation of the literature review into Move 1 has been attributed to the difficulties of separating the literature review from the move before; and more specifically that his preoccupation with short Introductions overlooked the "increasing practice of spreading references throughout the Introduction".[36] However, we have seen that the main example of conflation of sections came not with an integration of the three steps of Move 1, but with a conflation of the literature review with the niche establishment of the 1990 Move 2. It has to be acknowledged that the author citation may overlap with the other moves, and in particular Move 2. However, I do not feel that this discounts its classification as a discrete functional category. The rules for the citational components are complex, and very different in kind to those which define the other components of the research article Introduction. Therefore I would plump for a reinstatement of the 1981 model, whose overall 4-move schema now looks like this[37]:

Move 1: Establishing a territory

Move 2: Reviewing items of previous research

Move 3: Establishing a niche

Move 4: Occupying the niche

From these four moves, it would appear from our corpus that the literature review and the occupancy of the niche are the most clearly defined discrete moves, while the first move, establishing a territory and the third, establishing a niche

get murkier and harder to define. Ultimately, it is not the actual sequencing of the respective moves and steps that is crucial for an interpretation of the text, but rather whether the rhetorical gestures are being made at all. Even if certain texts do conflate the objective restatement of the literature review (Move 2) with their evaluation of it (Move 3), both these rhetorical gestures may still coexist, if not in strict sequence, within the text. (Ultimately, it may emerge that it is much harder to create strictly sequential categories for the discrete moves in the introduction to the research article than is postulated in Swales's model).

In this way the research writer marshalls the resources of the symbolic system expressed by the rhetorical structures of article introductions in order to negotiate a space within a his field of research within the medical sciences. Also, the writer can accumulate cultural capital in the competition for a dominant position within social space.[38]

Notes and References

1. Bourdieu, P., & Passeron, J. (1977). Reproduction in Education, Society and Culture. Cambridge: Cambridge University Press, pp.159-171; (1991). Language and Symbolic Power. Cambridge: Polity Press, p.277, note 8.

2. See Chapter 4, Section 4.2.3, p.116 ff.

3. This is similar to the way in which Swales distinguishes between business correspondence that is oriented around the delivery of a positive message ('good news' letters) and that which is oriented around the delivery of a negative message ('bad news' letters). While both may seem to part of the more all-encompassing genre of "administrative correspondence", in fact this level of classification "does not constitute a genre as it does not represent a coherent set of shared principles." "Rationale" is that feature of the text which governs the overall structure of the discourse as well as characteristics of lexicon and syntax.

(Swales, J. 1990. Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press, p.53).

4. Chapter 4, p.131 ff.

5. Hill, S.S., Soppelsa, B.F., & West, G.K. (1982). Teaching E.L.S. students to read and write experimental research papers. TESOL Quarterly 16, 335.

6. Hill et al. (1982).

7. Swales, J. (1981a). Aspects of Article Introductions. Birmingham, UK: The University of Aston Language Studies Unit; (1990).

8. Swales (1990), p.133.

9. Swales (1990), p.141.

10. Swales (1981a; 1990).

11. A brief synopsis of each paper can be found in Appendix A.

12. Adams Smith, D.E. (1984). Medical discourse: aspects of author's comment. The ESP Journal, 3, p.28.

13. Verity, C.M., Ross, E.M., & Golding, J. (1992). Epilepsy in the first 10 years of life: findings of the child health and education study. British Medical Journal, 305, 857-861.

14. European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male transmission of HIV in 563 stable couples in 316 stable couples. British Medical Journal, 305, 809-813.

15. Greer, S., Moorey, S., Baruch, J.D.R., Watson, M., Robertson, B.M., Mason, A., Rowden, L., Law, M.G., Bliss, J.M. (1992) Adjuvant psychological therapy for patients with cancer: a prospective randomized trial. British Medical Journal, 304, 675-680.

16. Muijen, M., Marks, I., Connolly, J., & Audini, B. (1992). Home based care and standardized hospital care for patients with severe mental illness: a randomized controlled trial. British Medical Journal, 304, 749-54.

17. Swales (1990), p.146.

18. Previously Move 2 of the 1981 schema (Swales, 1981a, p.33 ff.).

19. Swales (1990), p.148.

20. Swales (1990), p.148.

21. Swales (1990), p.148.

22. Tadros, A. (1985). Prediction in text. Birmingham UK: The University

of Birmingham, English Language Research; in Swales (1990), p.148.

23. Swales (1990), p. 150.

24. Swales (1990), p.151.

25. E.g. Heslot, J. (1982). Tense and other indexical markers in the typology of scientific texts in English. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.83-103). Copenhagen. Copenhagen School of Economics; Lackstrom, J.E., Selinker, L. & Trimble, L.P. (1972). Grammar and technical English. English Teaching Forum, X(5), (September-October), 3-14; Malcolm, L. (1987). What rules govern tense usage in scientific articles? English for Specific Purposes, 6, 31-44; Oster, S. (1981). The use of tenses in reporting past literature in E.S.T. In Selinker, Tarone & Hazeli.(Eds.), English for Academic and Technical Purposes (pp.76-90). Rowley, Mass: Newburg House; Selinker, L. & Trimble, L.P. (1976). Scientific and technical writing: the choice of tense. English Teaching Forum, (October), 22-26; Trimble, M.T. & Trimble, L. (1982). Rhetorical features of scientific and technical texts as a major factor in E.S.P. communication. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.199-217). Copenhagen. Copenhagen School of Economics.

26. A more detailed discussion as to the relative extent that tenses refer to generality rather than to time, is taken up in Chapter 9.

27. After Oster, S. (1981).

28. Given the opportunity to compare M.Sc. theses with papers prepared for publication by postgraduate students in the medical sciences and doctors attending Research Communication courses at the University of Kuwait, 1988-1990.

29. Swales (1990), p.154 ff.

30. Swales (1990), p.154 ff.

31. Swales (1981a), p.64 ff.

32. Swales (1990), p.159.

33. Swales (1981a), p.64.

34. Swales (1981a), p.69.

35. Swales (1990), p.160

36. Swales (1990), p.140.

37. A complete diagram of a modified model for Article Introductions including the subsidiary steps can be found in Appendix B.

38. Bourdieu (1991), pp.229-231.

CHAPTER 8

THE HETERODOX AND THE IDIOPATHIC

After the Introduction, the tone and structure of the text of the medical research article changes dramatically. In fact, it is as if the research report which is produced within the primary context of medical discourse actually combines a variety of different genres within a single text. In the Methods section, the rhetorical assumptions of the text no longer imply a competitive differentiation of interests between the writer and reader; rather an identity of interests and shared knowledge is assumed in order to enable the interpretation of the text. Thus, the textual resources of the body of the research article, including both the Methods and Results sections, operate socially more as a bonding mechanism which enables the creation and maintenance of shared identity within a discourse community. However, at the very end of the paper a reprise of some of the structural and rhetorical themes of the Introduction appears in the Discussion section.

Also, while the medical case history report (idiopathic text) is methodologically distinct from the medical research article in as much as it deals with just one unique case while the research article attempts to establish the normative characteristic of an entire cohort of cases, generically its main distinction lies in the rhetorical underdevelopment of its introductory section. Since the Introduction is the rhetorical device which enables the research article writer

most incisively to contend for a position in the epistemological space of the primary context of medical discourse, the relative lack of a competitive introduction in the genre of the idiopathic text may be a factor which accounts for its current eclipse by the nomographic text.

8.1 Methods

The structure of the text of the Methods section in scientific research papers has been found[1] to contain a number of features that indicate that this particular sub-category of discourse is targeted at a discourse community exhibiting a fair degree of closure. That is to say the degree of explicitness of the construction of the verbal message becomes less as the reader works his or her way into the body of the text of the research article. By the time the reader reaches the Methods section, a certain amount of shared meaning has to be assumed between the research article writer and reader, and an increasing amount of the meaning of the text is left to the inference of the reader.

Both Tomlin and Bruce have indicated[2] that the Past Passive is usually the tense of choice in the Methods section. This is largely borne out by the sample paragraph which concludes the Patients and Methods Section of Text F, on psychological therapy for cancer.[3] Here five out of the eight verbs are in the Past Passive, two in the Past and only one in the Present tense. Thus, in terms of temporal reference this

section of the report is much more uniform than the Introduction or Discussion sections. Moreover, it is also significant that in the Methods section the agent is largely elided by the choice of mood. While agreeing that "the underlying agent is consistently that of the experimenters,"[4] It is more significant that the Methods section implies through the elision of the agent the unimpeded, depersonalized force of Science itself. To introduce a human agent would be to reveal the contingent nature of medical research, whereas the stark anonymity of the Passive voice maintains the unchallengeable lapidescence of scientific procedure.

The range of predicate verbs is also restricted in the Methods section of scientific report writing. Swales, for example,[5] takes a paragraph from the 'hard' end of the medical sciences, which describes the experimental preparation of beef heart mitochondria. Here, the writers depend almost exclusively on different forms of the verb "prepare": *prepare*, *prepared* and *used to prepare*. In the relatively 'softer' type of epidemiological report which we are looking at here, the verbs are taken from a broader but nonetheless restricted statistical lexicon: *analyse*, *compare*, *base*, *compute*, *make*, *use*, *affect* and *to be*. In our sample paragraph the grammatical elision of the medical subject combines with the cumulative effect of these verbs of rationalization to totally override all consideration of human agency. Any margin for human error is curtly swept aside at the close of the section: "Numbers of patients receiving antidepressants were very small and *could*

not affect the results".[6]

However, Swales also emphasizes the fact that research writers tend to elide detailed description of the method entailed in an experiment. This rather gives the lie to the Popperian assumption that the Methods section is written so that the experiment can be replicated and retested at some later date. This was confirmed in our four examples:

Text E[7] (a) Classification of afebrile seizures was based on the proposals of the International League Against Epilepsy, revised in 1981.

(b) Proportions were compared by the x^2 test with Yate's correction. Fisher's exact test was use for numbers less than five.

Text F[8] (c) Confidence intervals for the treatment effect were based on the t distribution. p Values were computed using the non-parametric Mann-Whitney test.

Text G[9] (d).....with the Fisher's exact test and the x^2 test and....with the Students' t test.

Text H[10] (e) Psychopathology was measured with the present state examination and the 24 item brief psychiatric rating scale.

(f) The social adjustment scale was used.....

(g) Satisfaction was assessed by the client satisfaction scale...

While examples a, e, f and g were at least referenced, the other supposedly 'standard' procedures were not, in particular the mysterious "Yate's correction" of Text E, example b. These references to particular statistical procedures would seem to mitigate against ease of cross-referencing and imply that this discourse community possesses its own prior knowledge regarding methodological procedures.

Another feature of the Methods section of scientific reports that indicates the existence of an underlying code of shared meanings in different scientific discourse communities is the lack of anaphoric reference in the text. This has been noted by previous researchers such as Bruce and Weissberg.[11] Out of 20 Methods paragraphs drawn from a variety of specialisms, Weissberg discovered only seven uses of pronouns and three instances of superordinate expression. However, he did observe 54 instances of what he calls "inferential bridging", whereby a background of knowledge and experience on the part of the reader was required to give the text coherence. Weissberg also contrasted the "linear progression" of 20 Introduction and 20 Discussion paragraphs with the indeterminate structure of the 20 Methods paragraphs. That is to say, the Introduction and Discussion paragraphs displayed the 'classic' Given-New principle of organization, while the Methods paragraphs showed little or no textual coherence, relying instead on the shared inferential meanings of their intended discourse community.

Our sample Methods text[12] largely bears out this lack of

textual coherence, displaying a singular lack of pronominal reference, restricted referential use of the definite article and little or no lexical repetition. Sentence 2 contains two instances of cataphoric reference in the text: "*the* analysis", and "*the* change", both followed by postmodifying phrases. And Sentences 3 and 4 use the definite article exophorically to refer to "*the* non-parametric Mann-Whitney test" and "*the* t-distribution". However, none of these uses of the definite article are strictly anaphoric in their function. This brings in another aspect of cohesion in the Methods section which has not been brought out in previous analyses. The exophoric reference associated with the references to specific types of tests again derives from the shared knowledge of the discourse community of medical researchers, what Halliday and Hasan have dubbed generically the "context of situation".[13]

However, if Methods sections in medical research report writing such as our sample text display a lack of conventional forms of coherence such as anaphoric reference and lexical reiteration, they still do not appear to be incoherent texts. These scientific texts hold together not so much out of conventional forms of cohesion, but out of structures of what Halliday calls "collocation". Collocation comprises: "...all the various lexical relations that do NOT depend on referential identity and are NOT of the form of reiteration accompanied by *the* or a demonstrative."[14] In this way collocation has been described as:

> ...a cover term for the cohesion that results from the co-occurrence of lexical items that are in some way or other typically associated with one another, because they tend to occur in similar environments.[15]

The concept of collocation, then, seems to be where a purely linguistic analysis of cohesion centred on the analysis of relations within the text overlaps with a sociolinguistic analysis which includes the shared knowledge of the reader and writer.

The shared experience of any group, professional or otherwise - be it the Royal College of Surgeons or the Hong Kong Study Circle[16] - constitutes the group as a discourse community and the shared experience of that community infuses its discourse. Such is a dialectic of experience and language. Shared experience gives a social cohesion to the group and infuses the meaning of the text with a linguistic coherence; the shared meaning of the text recognized through its linguistic conventions affirms the shared experience of the group. This continual renewal of group affirmation lends the group power, a power which is at once exomorphic and endomorphic. The endomorphic power lies in the sharing of a certain exclusivity in the uniqueness of the knowledge that admits access to the group's texts; the exomorphic power lies in the recognition of mutual shared interests through the text, and the ability the text lends to members of the group to act collaboratively rather than individually upon them.

Thus, with regard to the text of the Methods section, precisely that area of the research article which seems most arcane and esoteric to the nonspecialist reader may well seem wonderfully well constructed to the reader more familiar with the context of situation of the text. The vocabulary of the particular process of statistical analysis in our example would appear to cohere generically to the medical statistician. Halliday,[17] uses the term "chain" to describe lexical sequences that cohere collocationally. The "collocational chain" from our sample looks like this:

> *Subscale scores...baseline values...randomization...Confidence values...t-distribution...p Values...computed...non-parametric Mann-Whitney test...p values...confidence intervals...multiple comparisons...Analysis of covariance.*[18]

The Methods section indeed displays a form of coherence, if not one based on conventional forms of cohesion such as anaphoric reference and lexical repetition.

Related to the use of collocation and inferential meaning in the Methods section is Dubois' observation[19] that complex compound noun phrases are also a stylistic feature of this type of text. Examples such as *heavy beef heart mitochondria*; *well coupled mitochondrial particles*; and *inhibition-protein-depleted particles* emerge from her analysis of a passage from the 'hard' end of the medical sciences.[20] While the elliptical use of grammar in scientific writing again tends to obscure

the meaning of these phrases for all but the initiated, the use of the Passive voice also removes the concept of contingent human agency and process from the text. The use of compound noun phrases in the Methods sections of our epidemiological papers is not perhaps as dense or as highly technical as that found in the experimental research paper; however, it does emerge as a clearly marked stylistic characteristic, e.g.: *10 year follow up* (Text E), *telephone randomization, hospital anxiety and depression and mental adjustment to cancer scales, cognitive-behavioural treatment programme, intent to treat principle* (Text F); *Centers for Disease Control classification of clinical status, enzyme linked immuno-absorbent assay, adjusted odds ratios* (Text G); *daily living programme teams, brief crisis intervention* (Text H). Also, Dubois notes[21] that as the description of the procedure becomes more specialized in the course of the Methods section, so the syntax becomes more complex.

Finally, indications began to emerge in the course of our research that the four sub-genres incorporated within the research article have, like language itself, by no means reached a point of stasis. Huckin[22] has observed that the Methods section, in the field of biochemistry at least, is receiving less and less emphasis within research reports in the physical and life sciences. It is increasingly either being either pushed to the end of the paper or written in minuscule print.

> Methods sections in the physical and life sciences are enigmatic, swift, presumptive of background knowledge, not designed for easy replication, and with little statement of rationale or discussion of the choices made.[23]

The elliptical use of language in the description of research methods may be beginning to reach its logical conclusion in the evolution of the genre - the elision of the entire Methods section itself.

8.2 Results

The final stages of the research article see us sailing into murkier water. The extent of the examination of the closing two sections of the research article has, to date, been pretty slim[24] - certainly in comparison with the thoroughness of the output regarding the Introduction sections. So inconclusive has this output been to date that Swales[25] is even unwilling to commit himself to where the Results section of the research article will conventionally end, and the Discussion section begin.

> Even if a majority of research articles have closing Results and Discussion sections, others coalesce the two, while even others have additional or substituted sections labeled Conclusions, Implications or Applications and so on.[26]

It is the Results section which has been the most ignored by the applied linguists; and especially the features which distinguish it from the Methods section. If the Results section is regarded by Swales as being conflated with the Discussion section in terms of continuity; in terms of style it is most often regarded as being conflated with the Methods section. In view of this hiatus, Swales has to conduct an ad hoc examination of four articles from Research in the Teaching of English (R.T.E.)[27] in order to cover the ground. His observations are inconclusive. Generally, there appears to be a surprising lack of conformity in the presentation of results - within a single journal even the length of the Results sections varies by over 30% (between 20 and 30 pages). Swales also points out the variation in the amount of evaluation that authors permit themselves in their presentation of results. The descriptions of researchers using a computer package display an "astonishing regularity"[28] of lexis, without indulging in commentary at all; while, not surprisingly, the other three papers with non-computer-generated results deal with them with varying degrees of evaluation and comment.

However, implicit within Swales's review are two potentially defining features of the Results section of any scientific, and hence medical, research paper. First, the length of the Results section and its constitution (ratio and relation of text to tables and/or figures) is potentially describable, both in absolute terms - in relation to the overall length of the paper - or in relation to the size and content of the

other sections. In the relationship between the text of the research article in our four papers there was some variation in the ratio of tables to commentary, which were estimated in column inches. One paper had a more or less equivalent amount of illustrations and commentary; while two texts had a ratio of table to commentary of approximately 1:8. From this, it can be deduced that the qualitative relationship between tables and comment in medical research papers ranges from 1:1 to 1:2.

Secondly, the amount of evaluative as opposed to merely quantitative information contained within the Results section should also be definable. As is indicated in the research writing manuals,[29] the purpose of the textual comment within the Results section is not merely to reiterate the content of the tables, its purpose is to highlight, select and interpret the relationships within the tables. And it is, after all, the distribution of contrasting amounts of evaluative language throughout the paper that is one of the main features that distinguishes the different sections of a scientific research paper. Implicit in this is the idea, which is an underlying premise of all research report writing, that there can be an absolute distinction between the 'empirical' statement of the facts in the Results section and their 'subjective' assimilation into an existing corpus of knowledge in the Discussion section. Through maintaining this difference, the IMRD cycle reinforces the philosophical basis of scientific enquiry quite as much as the premises of the scientific method inform the goals of the writers.[30]

8.3 Discussion

Work on the Discussion section of the nomographic text has been a bit more extensive than that on the Results section. Belanger[31] found that there was a correlation between the research questions in the Introduction and the structure of the Discussion section. While the Discussion has a general opening and conclusion, the research article writer will tend to pick up on each of the research questions posed in the Introduction and then examine each one in turn, passing through a cycle which consists of: a summary of results, suggestions from the research (in terms of previous research), and further questions (with potential explanations and occasional references). This cycle can also be repeated for the same research question.

More recent work[32] has substantiated the cyclical nature of the Discussion section. In fact 'cycling' seems to be the dominant discursive pattern of this section of the research report in contrast with the Introduction which, while it may include cyclical elements, is predominantly linear in its mode of development. Later Discussion researchers have, however, been more preoccupied with isolating subsequent 'steps' of the Discussion section in a manner similar to the Introduction sections. Swales has culled the eight most common 'moves':

a. Background information. This a device used for strengthening the overall argument of the research paper. It may occur at the beginning of the Discussion; but may also recur at the start of subsequent cycles.

b. Statement of results. Of all the eight moves listed, this is the least likely to be omitted; and this second move, also, may be the subsequent starting point of the discussion of successive research questions.

c. (Un)expected outcome. Less universally found, it is still often the case that the research article writer will comment upon whether the results turned out as expected.

d. Reference to previous research. The third most essential move after Moves 1 & 2, this move resituates the current findings within the previous research tradition in a particular field.

e. Explanation. This is often linked - somewhat tentatively - to Move 3.

f. Exemplification. Again, following on from the fifth move as appropriate.

g. Deduction and Hypothesis. Here the research article writer comments upon how generalizable the results of the research are.

h. Recommendation(s). The research article writer suggests possible areas for future enquiry.

Over is the order of moves in our four Discussion sections, according to Swales's categories:

Text E

Moves: 2,4,2,4,2,5,4,5,7,2,5,4,3,5,4,5,4,2,4,2,5,4,2,4,2,5,2,4,2,4,7

Text F

Moves: 1,5,4,5,8,1,2,4,5,2,5,2,5,8,2,7

Text G

Moves: 2,5,2,4,2,4,5,7,4,7,4,2,5,8,2,5,4,2,7,2,7,2,8,5,8

Text H

Moves: 2,5,2,5,4,2,4,5,2,3,1,4,3,5,1,5,8,5,2,8,1,8,1,8,4,2,8

An analysis of four medical research article texts certainly provides evidence of 'cycling', in particular from results to reference to previous research (Text E=6 times, F=1, G=2, H=1); and from results to explanation (Text E=4 times, F=2, G=3, H=2). However, as anticipated by Belanger above,[33] there was some variety in the degree of 'cyclicity' in the different texts. Swales's eight categories fairly comprehensively covered all the moves that the research writers made; but we felt a need for two more discrete functions. First, what was categorized as an 'explanation' often involved a statement of the limitations of the study, such as a discounting of biases in the interviewing procedures or an explanation of other shortcomings in the methodology. There is a case for this being classified as a separate move in itself. Secondly, Move 4, reference to previous research, included the specific function of comparison with previous research in which both the present and previous studies receive mention. Again, there is a case here for a separate category of move where a specific statement of comparison is being made.

Our text confirms that there are certain discernible 'moves' apparent within the Discussion as well as within the

Introduction sections of research reports. However, it would appear that the Discussion section actually does move within a more cyclical, and hence less predictable, pattern than does the Introduction section. One reason for the less predictable patterns within the Discussion section is because:

> the complexity of the cycle can be related to the degree to which the results are 'compatible' with previous work and/or with the expected outcome to hypotheses or questions.[34]

Furthermore, while the Introduction, in keeping with Hill's hourglass model[35] (see Fig. 1, above), tends to move from a general mode of reference to the particular; in the Discussion, the patterns tend to 'cycle out' from the particular to the general. This 'cycling' incorporates a restatement of the results, situating them in the context of the relevant literature, developing and confirming their significance within this context, and concluding with an appropriate recommendation.

8.4 Case History Report

The epidemiological research paper, or nomographic text, is now the dominant textual mode of the production of medical knowledge, and the medical case history, the idiopathic text, tends to live more and more in its shadow. The medical case history has been described as "the briefest and simplest category of article"[36] and does not display the same degree or regularity of negotiation of medical knowledge as the epidemiological research article. As such, it is simply nowhere near as long. In our sample (Texts I-L),[37] there were about two and a half times the overall number of lines in the research articles overall as there were in the case history reports. The case history report may consist of three or four sections: a Summary which can on occasion (e.g. Text K) double as an Introduction, the Introduction proper, an outline of the details of the case (Case Report), and a Discussion section.

The rhetorical form of the medical case history report is not at all as stable as that of the medical research article. A large part of the reason for this is historical. Rhetorical forms never reach a state of homeostasis. The discursive form of the medical text has been in a state of mutation ever since medical science first found its authochthonous mode of expression in the scientific letters published in The Philosophical Transactions of the Royal Society in the seventeenth century.[38] The epidemiological research report (nomographic text) and the individual case history (idiopathic text) have

been competing for dominance since the supercession of the epistolatory form in the late eighteenth century. At first the case history emerged as the logical successor to the scientific letter, which was personally addressed but generally copied and circulated; but latterly, with the increasing dominance of computer processing of large amounts of statistical data and the development of techniques of social surveillance that can often enable cadres of some hundreds of respondents to be observed for a generation, the nomographic text appears to be eclipsing the idiopathic text.

Thus it was found that the British Medical Journal (B.M.J.) had ceased publishing clinical case notes in 1987,[39] and we had to turn to the 1990 volume of the British Journal of Clinical Practice (B.J.C.P.) to find our sample texts. However, 1990 was also to be the final year in which the BJCP would also continue to publish these short reports.[40] It appeared that we were in search of a genre which was in the process of becoming extinct. By the millennium, it is likely that the medical case history will be relegated to history along with the letters of the Royal Society.

The medical case history (idiopathic text) does not have nearly as rhetorically developed a first section as does the epidemiological research report (nomographic text). This may be a factor in the latter's eclipsing the former as the dominant genre within the primary field of the production of medical discourse. The idiopathic text opens with a Summary which contains an overview of the main features of the report,

including the main conclusions and recommendations. On occasion it doubles as an Introduction, in which case it can display some of the moves outlined by Swales as operative in the longer type of text. Swales's Move 1 of the research article genre, claiming centrality or making topic generalizations is clearly not appropriate for the introduction of a single case. Therefore, in four of our texts the bulk of the introductory sections is taken up by an unequivocal review of the relevant literature. However, as a bridge into the Case Report proper, we find evidence of both Swales's Move 3 and Move 4 from the research article. Three out of our four case histories (Texts J, K, L) made a rhetorical move towards the end of their Introduction/Summary sections where they attempted to 'establish a niche' for their case (research article Move 3). This was done exclusively by signalling a gap in previous research, e.g.

Text K:..but to our knowledge there are no reports of pneumatosis in patients with acquired immune deficiency syndrome (AIDS).

Even more significantly, all four texts concluded with a statement of how the case 'would occupy the niche'(Research Article, Move 4), one (Text I) being a statement of purpose (teleological), and the three others being descriptions of the research to follow (ontological). Here is the statement of purpose from Text I:

Text I: This patient is presented to illustrate the problems encountered in the management of intractable epilepsy.

In this way the greater part of the rhetorical patterning of the text of the Introduction sections of the research article is also reflected in the case history report. These rhetorical moves which one discourse community makes in negotiating an epistemological consensus may operate across texts which serve quite different purposes.

The main body of the idiopathic text, the Case Report proper, is the rhetorical equivalent of the Methods and Results sections of the research article. Here the tone of the language becomes less problematic and the details of the case are set out in a matter-of-fact, unequivocal way. The most significant rhetorical factor in this section is the very exact schema which is adhered to in the organization of the information about the cases. The sequencing that follows reflects some of the protocol carried out both in the medical interview and in the clinical practice of 'taking a case' ing' in the context of reproduction.

1. Identity. The identity of the patient is established within very precise parameters: age, sex - and occupation where relevant to the case.
2. Examination. The results of the medical examination are outlined and signs and symptoms of the condition are laid out as revealed to the "medical gaze".

3. Management. A detailed account of the management of the condition is given.
4. Outcome. The outcome of the management of the condition is usually sketched out, often in fairly stark terms, e.g.: "The patient received palliative care and died one month after hospital discharge. A post-mortem was not performed."[41]

The Discussion section of the medical case history, although it was much closer to that of the medical research article than that of the main body of the report, tends to display an even looser rhetorical organization. Its main characteristic contrasts with the linear development of the Case Report section by 'cycling', mainly between a restatement of salient features of the case and reference to previous research. The main function of this section seems to be similar to the research article, except that it serves to locate just one case within the context of previous research. As in other places within this genre, the Discussion section displays less fecundity of rhetorical features than the research article, and we found no instances of (un)expected outcome and exemplification, which constituted Moves 3 and 6 of the research article Discussion.

Two new rhetorical features that are unique to this genre emerged to replace these moves in our revised schema below. The first trope found only in the case history Discussion is expression of uncertainty or concession about the management

of the case itself, e.g.: "The role of the numerous medications the patient was receiving at the time is also unclear"(Text K, p.770). And the second is what we shall call, after Swales's model: 'niche maintenance'. Here the case history writer seeks to maintain the currency of the topic through asserting the uniqueness of this particular case and/or maintaining the 'gap' in the literature by expressing uncertainty about previous research. Here the excited Kuwaiti doctors use both rhetorical techniques at once (my italics):

> The simultaneous occurrence of factitious bleeding from various sites, self-induced subcutaneous and orbital emphysema, dermatitis autogenica and tongue ulcers *is unique* and has *never been reported before*.[42]

This appearance of a rhetorical trope in the Discussion section of the idiopathic text is one of the conventional steps within the Introduction of the nomographic text. It clearly illustrates the functional difference of the two different types of text that operate within the field of production.

The revised schema of 'moves' for the Discussion section of the medical case history report looks like this:

1. Background information.
2. Statement of case. This can involve a restatement of either signs and symptoms or aspects of the management of the case.

3. Uncertainty about the case.

4. Reference to previous research.

5. Explanation. This is often linked, somewhat tentatively, to Move 3.

6. Niche maintenance.

7. Deduction and Hypothesis.

8. Recommendation(s).

Here is the cyclical order of moves in our four Discussion sections from medical case histories, according our modifications of Swales's categories:[43]

Text I
Moves:2,4,2,3,5,4,1,4,8,4,7,4,7,8,1,2,1,2,4,2,8,4,6,2,8,4,2,4,2,8,4,2,4,2,7,8.

Text J
Moves: 2,4,2,4,7,2,6,2,7,4,7,4,8,4,6.

Text K
Moves: 1,4,2,4,7,2,6,2,3,1,8.

Text L
Moves: 4,6,2,4,2,6,4,6,2,6,8.

An analysis of the organization of the rhetorical moves taken in the Discussion sections would indicate that 'cycling' from a restatement of the case (Move 2) to reference to previous research (Move 4) is the standard way of negotiating a place for the account of the individual medical case within the annals of medical research. This shift is represented in all papers and comprises about a fifth of the total number of paired moves. Apart from this, the genre seems to be open to

individual writers to create their own styles of sequencing the moves available to them. Text I favoured a tripartite Move 2-Move 8-Move 4 shift (3 times); while the Kuwaiti doctors writing Text I were keen on 'maintaining their niche' with two instances of a Move 4-Move 6 shift complemented by two instances of a Move 2-Move 6 shift.

Nevertheless, three of the papers end, as one would also expect in a research article, with a recommendation; while Text J ends abnormally with a final stab at 'niche maintenance'(Move 6). The main thrust of the Discussion sections in the medical case history seems to be a 'cycling' out through a comparison of the current case with previous research to a recommendation at the close, with scope for a considerable degree of individual choice in the organization of rhetorical choices in between. It does not appear to be the ordering of these rhetorical moves itself that is the point here, but rather that the range of rhetorical choices is still restricted to eight quite definable discrete moves. These constitute the clearly recognizable modalities of rhetorical expression which have to be used to negotiate a place for the idiopathic case report within the accepted parameters of established medical knowledge.

8.5 Heterodoxy and Competition.

We have seen that the two modalities of research paper produced within the primary context of medical discourse incorporate a diversity of rhetorical styles; for both the nomographic and the idiopathic texts are rhetorically heterodox texts. *The production of heterodox texts is a characteristic feature of the primary context of medical discourse*. However, of our two modalities of medical research articles, the nomographic text incorporates a far greater diversity of rhetorical style than does the idiopathic text; and its rhetorical scope is most extensive comparatively in the introductory sections. The nomographic text is the most heterodox form of text in the field of medical discourse. However, it can also be seen that the cyclical structuring of the Discussion sections are where the two different types of medical research report are at their most rhetorically similar. At this point, the nomographic text reclaims, and the idiopathic text claims for the first time, that access to a space in the epistemological framework of knowledge to which the writer addresses himself or herself in the text. The laying-claim to a space in the epistemological cosmology of medicine also constitutes an advance towards a more dominant position within the social space which the medical researcher gains through the accumulation of cultural capital in one of the forms outlined in Chapter 7.

The way in which the medical research writer employs

rhetorical devices in the Discussion section of both modalities of research paper to establish his or her contribution to the shared knowledge of medical research can be said to be an almost ritualistic form of negotiation with other members of the hypostatized discourse community. In the same way as the moves of a tribal dance provide the members of a primitive society with mutual recognition and a feeling of belonging, while the dancers also vie with each other to excel in the grace and acrobaticism of their movements, so the elaborate discursive choreographing of the primary texts of medical research reaffirms the identity of the authors within their discourse community while simultaneously enabling the different members to compete with each other for the visibility of the status of their texts and their selves within the research community. The heterodox rhetorical modes of the medical research paper enable identity and competition, as well as similarity and dissimilarity, to coexist within the same text and genre.

Notes and References

1. Swales, J. (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press.

2. Tomlin, R.S. (1981). Clause-level syntax and information types in EST discourse (mimeo - in Swales, 1990, p.167); Bruce, N. (1984). Rhetorical Constraints and Information Structure of Medical Research Writing. E.M.P. Newsletter, 1(2), 5-52.

3. See Appendix C.

4. Swales (1990), p.167.

5. Gilbert, G.N. and Mulkay. (1984). Opening Pandora's Box: a sociological analysis of scientific discourse. Cambridge: Cambridge University Press, p.51.

6. Text F, p. 676 (my italics).

7. Verity, C.M., Ross, E.M., & Golding, J. (1992). Epilepsy in the first 10 years of life: findings of the child health and education study. British Medical Journal, 305, 857-861.

8. Greer, S., Moorey, S., Baruch, J.D.R., Watson, M., Robertson, B.M., Mason, A., Rowden, L., Law, M.G., Bliss, J.M. (1992). Adjuvant psychological therapy for patients with cancer: a prospective randomized trial. British Medical Journal, 304, 675-680.

9. European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male transmission of HIV in 563 stable couples in 316 stable couples. British Medical Journal, 305, 809-813.

10. Muijen, M., Marks, I., Connolly, J., & Audini, B. (1992). Home based care and standardized hospital care for patients with severe mental illness: a randomized controlled trial. British Medical Journal, 304, 749-54.

11. Bruce (1984); Weissberg, R. (1984). Given and new: paragraph development models for scientific English. TESOL Quarterly, 18, 485-500.

12. Appendix C: Methods section from Text F.

13. Halliday, M.A.K. & Hasan, R. (1976). Cohesion in English. London: Longman.

14. Halliday and Hasan (1976), p.287.

15. Halliday and Hasan (1976), p.287.

16. Of which John Swales is a self-confessed member (Swales, 1990, pp.127 ff.).

17. Halliday and Hasan (1976), p.287.

18. Text F: Methods section.

19. Dubois, B.L. (1982). The construction of noun phrases in biomedical journal articles. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.49-67). Copenhagen. Cophenhagen School of Economics.

20. Dubois (1982).

21. Dubois (1982).

22. Huckin (1987); in Swales (1990), p.169.

23. Swales (1990), p.170.

24. Belanger, M. (1982). A preliminary analysis of the structure of the discussion sections in ten neuroscience journal articles. Mimeo; McKinlay, K. (1984). An analysis of discussion sections in medical journal articles. Unpublished M.A. dissertation. University of Birmingham, UK; Hopkins, A. (1985). An investigation into the organizing and organizational features of published conference papers. Unpublished M.A. dissertation, University of Birmingham, UK; Peng, J. (1987). Organization features in chemical engineering research articles. ELR Journal, 1, 79-116; Hopkins, A. & Dudley-Evans, T. (1988). A genre-based investigation of the discussion sections in articles and dissertations. English for Specific Purposes, 7, 113-122.

25. Swales (1990), p.170 ff.

26. Swales (1990), p.170.

27. Research in the Teaching of English, (February), 1988.

28. Swales (1990), p.171.

29. Calnan J, & Barabas A. (1972). Writing Medical Papers. London: Heinemann; Locke, S. (1977). Better Medical Writing. London: Pitman.

30. A fuller discussion of the extent to which authorial comment intrudes into the text of the Results section compared with the other parts of the medical research paper will be taken up in Chapter 11.

31. Belanger (1982); in Swales (1990), p.171.

32. McKinlay, (1984); Hopkins, (1985); Peng, (1987); Hopkins and Dudley-Evans, (1988).

33. Belanger (1982); in Swales (1990).

34. Swales (1990), p.173.

35. Chapter 7, p.202.

36. Adams Smith, D.E. (1984). Medical discourse: aspects of author's comment. The ESP Journal, 3, 27.

37. **Text I**: Bwala, B.A., Gardner-Thorpe, C. (1990). Intractable epilepsy. British Journal of Clinical Practice, 44(3), 106-110; **Text J**: White, A., Harries, D., & Allen, S.C. (1990). Anorexia nervosa in the elderly: a case report and review of the literature. British Journal of Clinical Practice, 44(11), 630-631; **Text K**: Patel, A., & Creery, D. (1990). Pneumatosis intestinalis in AIDS: an unreported complication. British Journal of Clinical Practice, 44(11), 768-769; **Text L**: Karni, A.M., Farah, S., Khadadah, M., & Al-Duwaisan, H. (1990). A unique case of Munchausen's syndrome. British Journal of Clinical Practice, 44(11), 699-701. For a synopsis of the samples of idiopathic texts, see Appendix D.

38. Swales (1990), p.110.

39. Locke.S. (1988). Editor's Note. British Medical Journal, 297, 12.

40. Publisher's Note. (1990). British Journal of Clinical Practice, 44(12).

41. Text G, p.769.

42. Text H, p.701.

43. Swales (1990), p.172.

CHAPTER 9

TIME, SPACE, and MEANING in the MEDICAL TEXTBOOK

So far it has been possible to describe the rhetorical characteristics of the genres, or the 'discursive formation' of the interview and the research paper which operate respectively in the fields of the reproduction and production of medical discourse. The dialogical structure of the medical interview dramatizes the dialogical encounter between the professional and lay languages of medicine. The heterodox structure of the medical research paper, achieved through its generic capacity for the incorporation of other texts and subgenres, incorporates relations of both competition and solidarity between different interest groups within the medical profession.

The genre which operates in the field of recontextualization of medical discourse is the textbook. However, this genre is only marked by its *lack* of rhetorical features. The medical textbook is a unitary, "doxic",[1] text apparently stripped bare of explicit rhetorical features. The very elision of explicit rhetorical devices within the medical textbook implies that what it contains is self-evident and that it can be accepted unequivocally as true. In this respect, the knowledge which is presented by the genre of the medical textbook can be said to represent the 'common sense' knowledge of the field of medical discourse.

In an essay in Local Knowledge,[2] Clifford Geertz explores

the system of knowledge that every society characterizes as 'common sense'. It emerges that one of the most enduring characteristics of common sense is to deny that the knowledge it entails is systematized in any way at all. Geertz counters this:

> ...common sense is as much an interpretation of the immediacies of experience, a gloss on them, as are myth, painting, epistemology, or what ever,...it is like them, historically constructed and, like them, subjected to historically defined standards of judgement.... It is, in short a cultural system.[3]

However, the plain speaking version of common sense is not just confined to the wise saws of lay discourse but, according to Geertz,[4] it has become central to the philosophical thinking of this century. Furthermore, we can also say after Foucault[5] that the self-evident aspect of common sense have also become central to the methodology of empiricism which informs the medical sciences. Geertz goes on describe transcultural characteristics of common sense according to its "stylistic features, the marks of attitude that give it its peculiar stamp". These characteristics he accords the five substantive qualities of "naturalness", "practicalness", "thinness", "immethodicalness" and "accessibleness".[6]

Now, while it was Geertz's objective within his essay to identify a common modality of thought that exists across dif-

ferent forms of society, it has to be said that particularly within the current period of advanced capitalism, many diverse, stratified forms of common sense can be found within any one society. Just as the language 'codes' of capitalist society are stratified according to factors such as class and profession, so different discourse communities and interest groups operate in a variety of discursive fields. Each discourse community, speaking its own specialized form of language, creates, maintains and reproduces its own modality of common sense, which displays at least some of the characteristics that Geertz has identified.

It is the dialogical interplay between two different modalities of 'common sense' that have been seen at work within the discursive modality of the medical interview. There, the 'lay' discourse of illness encounters the professional discourse of illness. Conventionally, the lay version is perceived as a more 'common' form of common sense than the professional form; although the professional form of common sense is invested with more power in keeping with its institutional backing. Yet, what the doctor is saying is quite as "natural", "practical", "thin", "immethodical", and "accessible" within the professional discourse community which he or she inhabits as the 'lay' sayings are for the 'man-in-the-street'.

What is also required in order to disinter the ideological effects of institutionalized forms of knowledge in advanced capitalist societies is not just an excavation of sys-

tems of common sense across societies, but also an excavation of common sense systems across different specialized discourse communities within each society. In this chapter, we will define the effect of one particular set of linguistic relations which the discourse community of medical professionals implements in order to structure and create its own stratified version of common sense. We will move on from a consideration of the rhetorical features of the different modes of discourse to a more intensive perspective on the text, from which we will look at the way in which certain of the **ideational** resources of each genre operate within the systemic category of **field.** In this context we will see if we can find any further substantive qualities of common sense to add to the five that Geertz has provided for us, the only difference being that our qualities will be based on more specific linguistic criteria rather than Geertz's broader "stylistic features".[7] The linguistic characteristics of the common sense knowledge of medical discourse will then enable us to characterize the rhetorical and grammatical changes which are effected by the pedagogic device as an original text becomes a recontextualized text.

The heterodox texts of the medical research report and the medical interview are essentially zones of conflict and convergence between different forms of discourse. What is being fought over is the right for that discourse to have the performative efficacy of common sense within a particular discourse community. The medical research paper represents a con-

flict within one mode of specialized discourse for what will constitute the common sense system within the scientific discourse community.

The selection and inclusion from the universe of research papers and the differentiation of genres within the medical research paper is all part of a strategic competition for which texts will move into the recontextualizing field and be re-represented within the recontextualized code of the scientific textbook with the resultant accrual of cultural capital for the author(s).

On the other hand, the dialogical drama of the medical interview represents a conflict between different modes of discourse - between the 'lay' system of common sense with its display of a potential excess of "naturalness", "practicalness", "thinness", "immethodicalness", and "accessibleness"; and the professional system accompanied by the power of its institutional authority. The medical interview, is not, of course, the only discursive area in which the lay and professional discourses of medicine intertwine. The transformation of medical research papers into reports in popular scientific journals, such as Nature, and the popular press is one further area of hybridization[8] and the sedimentation of scientific lore through such pervasive discursive modes as popular advertising[9] is yet another.

Four samples of text (Texts M-P)[10] from medical textbooks were selected to provide a cross-section of the different subject areas which are defined within the medical curriculum:

Text M, pharmacology;[11] Text N, biochemistry;[12] Text O, physiology;[13] and Text P, anatomy.[14] The texts were chosen from different levels of difficulty in order to reflect the pedagogical scope of the medical curriculum. While the subjects of biochemistry and pharmacology are conventionally taught in Terms 2-5 and Terms 4-6 of the preclinical MBChB programme, physiology and anatomy are taught from the very beginning of the course.[15] Thus, the physiology and anatomy texts tended to be simpler and shorter than the biochemistry and physiology texts. The lengths of the sample texts were also chosen to be approximately the same as those of the more clearly defined research paper texts. Initially, it was thought that complete chapters would be appropriate for analysis; but even discrete chapters varied in length, were somewhat unwieldy for our comparisons and also did not necessarily define the minimal boundaries for specific topic areas we selected to trace across the different genres. (Texts ranged from 398-530 lines with a mean length of 472.25 lines).

9.1 Time and Meaning

Within the discipline of discourse analysis, there has been considerable debate over the significance of tense in scientific writing.[16] The issue of tense has been considered briefly within the context of the writing of the Methods section of the medical research paper;[17] it is now necessary to consider it in more detail with regard to the translation of

meaning from the field of production to the field of the recontextualization of medical discourse. The problematization of tense in medical discourse has focused in particular upon the medical research article, and especially upon the use of the three tense forms that predominate in that particular genre: the Past, the Present Perfect and the Present Simple. However, while the question of the distribution of tenses within the genre has received extensive consideration, there has been less attention given to the distribution of tenses between genres. Three issues have emerged in the debate over the use of tenses in scientific writing: whether choice of tense is governed by general grammatical rules relating to time, whether it is subject more to nontemporal constraints relating to the higher level rhetorical function of the text, or whether it is related more to the social context in which the text is constructed. The relation of tense choice to rhetorical function is most commonly associated with the research of Lackstrom et al.[18] However, Malcolm reinstated the general rule of tense after Comrie[19] and Lyons,[20] defining it as "...the grammatical category that establishes a relationship between two time locations: the time of utterance and the time of situation referred to".[21]

Lackstrom et al., working on pedagogical materials for scientific and technological writing, found that the choice of tense was governed by rhetorical factors in three areas: the description of previous research, reference to visual aids, and the description of scientific apparatus. Firstly, in the

description of previous research, they identified the nontemporal choice of the Present Perfect and the Past tense. This informed Swales's analysis,[22] which was reviewed above.[23] The selection of the Present Perfect tense would suggest that the author regards the research in question as relevant to the experiment at hand; while the Past tense is selected because the research described appears to be less directly related to current work. Trimble adds[24] that the Present tense is used when the initial citation is followed by discussion or an important generalization is being made. Secondly, Lackstrom et al.[25] distinguish between the use of the Past and Present tenses for reference to visual aids in the text.

Although the work involved in collecting the data for a table or a graph is located in past time, the research article writer generally refers to the data in the piece of discourse at hand in the Present tense. However, although a large part of this may be put down to rhetorical forces, there is obviously also a strong temporal factor which is operational here as well. The focus has changed from the gathering of data in past time to the active relationship which exists in the present between the reader and the writer. Thirdly, Lackstrom et al. also distinguish between the use of the Past and Present tenses to describe apparatus used in an experiment. If an experimental apparatus has been constructed exclusively for a particular experiment, it will be described in the Past tense; if, on the other hand, the apparatus is used for purposes other than the experiment in question, then it will be

described in the Present tense. Thus, with regard to reference to past literature, Lackstrom et al. relate choice of tense to the author's evaluation of the *relevance* of previous work to their own.

Oster's paper[26] focuses on the rhetorical choice of tense to express the author's point of view vis-a-vis past literature. While broadly supporting Lackstrom et al.'s position, she extends their approach in three principal ways:[27]

1. The Present Perfect tense is used to claim *generality* about past literature. The Past Tense is used to claim *nongenerality* about past literature.

2. The Present Perfect tense is used to indicate the continued discussion of some of the information in the sentence in which the Present Perfect tense occurs.

3. The Past tense is used when it refers to quantitative results of past literature that are *non-supportive* of some aspects of the work described in the technical article. The Present tense is used when it refers to the quantitative results of past literature that are *supportive* or *non-relevant*. The Present tense is also used to *refer* to past literature, rather than to *discuss* it.

Although her sample is restricted to only two chemical engineering papers, Oster's assertion that a choice of the Present Perfect or the Past tense can be used to indicate

generality or non-generality about past literature is much further reaching than the previous interpretations. That is to say that while Lackstrom et al.'s concept of *relevance* holds true for the relationship of the information cited by an author to their research alone, Oster's concept of *generality* would hold true for the universal truth of what is being stated in the literature reported.

Swales, himself, is more coy about assigning a "semantic/sentential" explanation to the use of tense in the research article, preferring a more "discoursal approach".[28] In particular, he integrates grammatical concepts of the discourse analyst with the typographical conventions of the citation analyst to give us a correlation between the citational parameters integral/non-integral and the discoursal parameters reporting/non-reporting (Fig. 9.1).

Figure 9.1

Reference and Tense[29]

	Integral	Non-Integral
Reporting	Past Brie (1988) showed that...	Present Perfect It has been shown that...(Brie, 1988)
Non-reporting		Present (or modal) The moon may be made of cheese (Brie, 1988)

There is a statistical probability that the corresponding tense will be used from the figure above according to whether the author's name is mentioned in the text ("integral") or, if mentioned parenthetically ("non-integral"), according to whether the statement is introduced by a reporting verb (e.g. "show") or not. Swales has had to concede, however, that a follow-up study[30] has not borne out his findings conclusively.

While Malcolm's approach[31] reinstates the 'general' rules of tense, she also posits a relationship between tense choice and the context of the construction of the text. She argues[32] that:

> ...the interpretations a tense may receive in a specific context are best accounted for linguistically...in terms of the interaction between context-independent meaning and context-dependent use.[33]

She goes on, with more than a nod in Halliday's direction, to posit:

> ...a hierarchical relationship between context-dependent rhetorical functions, context-independent temporal meanings, and, finally, actual tense choices.[34]

At the highest level she subdivides the "components of the situation"[35] into: (A) the primary content or social activity expressed in the communicative event; and (B) the physical

form, including both observable behaviour and the act of writing, that express the content. To each of these she ascribes a set of rhetorical functions based on the distinction between two axes of orientation: the referential axis and the deictic axis. The referential axis deals explicitly with the "field of the experiment"; while the deictic axis deals with the medium for realizing the "field".[36] Malcolm goes on to ascribe three to four rhetorical functions at clause level to each of these categories, and then to correlate "the tense of the finite verb in each clause with the rhetorical function expressed by that clause".[37] She finds that the corresponding choices of tense can be explained just as well in terms of the general rules of grammar as by reference to their rhetorical intent.

A. Deictic Axis - functions:	
1. Statement of rhetorical intent	Present
2. References to nonlinguistic information	Present
3. Relating information to the current discussion	Present
4. Summary of information in the report	Present Perfect
B. Referential Axis - functions:	
1. Generalizations	Present
2. References to specific experiments	Past
3. References to areas of inquiry	Present Perfect

Thus, for Malcolm, the assignation of the criteria for the choice of tense to either the rhetorical function of the verb or the general rules of grammar are not mutually exclusive conditions. They merely indicate a difference in perspective. Rhetorical choice relates to the hierarchical relationship between function and situation; while grammatical choice relates to the logical rules which express a relationship between the time of utterance and the time of the situation referred to. Both perspectives, and their interrelations, are necessary for a full understanding of the linguistic system - and a text.

A final approach which is of interest to us here is that of Heslot.[38] She studied a corpus of 19 articles on plant pathology to determine the criteria for distinguishing between two genres: the experimental research paper ("primary article") and the review article. She analyses tense as one of what she terms the "indexal markers" of a text (after linguistic philosophers like Peter Strawson). Taking a more global view of the research article than Malcolm, she produces an interesting profile of the distribution of tense over the IMRD structure of the research article. Her analysis of the function of choice of tense within the clause supports the notion that "tense choice would...mark the attitude of the speaker towards the events related".[39] Thus she ascribes different rhetorical functions to the tense choice in sociological terms - as the efforts by the scientific community to build consensus on existing knowledge. Members of the scientific community have taken stock of the relationship between

their findings and received knowledge, hence a distinction between:

> (a) largely received knowledge referred to with tenseless simple Present, (b) recent works which have contributed to current view on a subject referred to with Present Perfect, (c) still more recent work, provisionally supposed to fit in, referred to with simple Past (same for works mentioned for criticism).[40]

In this respect Heslot comes closer to Oster's interpretation of the use of the Present tense in terms of the *generality* (or 'generalizability') of the referent, i.e. its status as a universal truth; than to Lackstrom et al.'s interpretation of it with regard to the referent's *relevance*, i.e. its proximity - at least temporally and probably also conceptually - to the author's own research. However, whatever emphasis one wishes to place, we must regard the tense choice in the research article as being made with some regard to the continuing status of the referent in terms of its truth value to the scientific community; and, hence, in terms of the ongoing constitution of that community with regard to its collaborative construction of scientific knowledge.[41]

9.2 Primary Context and Tertiary Context

An analysis was carried out of the distribution of tenses across the texts selected from four different genres of medical discourse: the medical interview, the medical case history, the medical research report and the medical textbook. While Malcolm's approach is elegant, and appears closest to our own approach in its attempts to contextualize the workings of the research article at a lexicogrammatical level in the social situation, her functional categories were too broad to be operational in the analysis of texts. For example, her category B.2 "References to specific experiments" has to be stretched to include previous experiments by other researchers as well as the study described in the paper in question. Furthermore, her initial distinction between the deictic and referential axes presents an unnecessary confusion with Halliday's interpersonal and ideational metafunctions, which infer very different orientations to meaning. One of the problems with all the approaches reviewed here, apart from Swales's[42] is that they attempt to relate a linguistic function to tense choice right through the research article; and the problem with Swales is that he has only analysed the Introductory sections in detail.

Consequently, we employed a hybrid method in order to categorize the occurrence of different tenses across our four genres which operate at the three levels of contextualization. As far as possible Heslot's 1982 protocol was adhered to in

order to enable a comparison of results - at least as far as the research article was concerned. However, we were not able to agree entirely with her categorization of tenses. Her paper focuses mainly upon the distribution of the simple Present and simple Past tenses. In particular, modal verbs are relegated to a category of 'other forms'. Although Malcolm's functional-linguistic categories were too broad to be of use in our applied analysis, we did synthesize her more inclusive (1987) categorization of tenses. One advantage of this is that it places more emphasis upon the Present Perfect tense, which has an important role to play in the research article,[43] if not in the textbook. Also, it was felt that it was important to establish that the modal verbs were marked for tense in their experiential capacity, as well as for mood in their interpersonal capacity.

Simple Present, Present Continuous and modal verbs marked for Present tense are subsumed under the category "Present"; the modal Perfect is included with the Present Perfect under "Perfect"; and "Past" incorporates the simple Past, Past Continuous, Past Perfect as well as the few instances of modal forms marked for Past. This just left the "Future" as a discrete minority form, which it was felt was worth setting apart. We followed Heslot in this case in treating the abstracts to the medical research articles as a separate entity - especially since they repeat many of the forms already counted in the main body of the paper.

Table 9.1 Percentage distribution of 4 major tense types in medical discourse by context and genre

Context	Pres	Past	Perf	Fut	Genre
Primary/production:					
nomographic	22.5	73.4	3.6	0.5	Research Article
idiopathic	39.2	52.5	8.1	0.2	Case History
Secondary/reproduction	54.0	31.3	8.0	6.7	Interview
Tertiary/recontextualizing	94.1	4.1	1.7	0.2	Textbook

The analysis of the proportional distribution of different tenses in the textbook when compared with their incidence in the other three genres (Table 9.1), yields a dramatic insight into the distinctive nature of the textbook genre and its role within medical discourse as a whole. In this genre, quite simply, almost all of its verbs (95% approx) are in the Present tense. The implication of this is that the medical textbook is a text with the authority to describe the reality of the body 'as it is' - without recourse to either intertextual (previous research) or intratextual reference (its own 'methods'). The presentness of the textbook in itself establishes its own authority and its own potency. The Past tense is represented, if somewhat minimally in comparison with the other three genres. Examples of the Perfect tense are again half as much as those of the research article; and the Future tense is represented to a very small degree, roughly

equivalent to the proportion in the medical case history.

In the recontextualization of medical discourse it is possible to see that as the authorized text of the textbook genre becomes more self-referential, so there is a transformation of the Past tenses into the Present in a way that maintains the generalizable truth value of the knowledge presented. A transformation of the tense and the temporal and spatial reference of the text takes place as the text moves from a position of production in the primary context of the social construction of medical discourse to a position of recontextualization in the tertiary context of recontextualization. In this way, not only does the predominance of the Present tense support the truth value of the content of the text, it also marks it as a recontextualized text.

The dramatic way in which the recontextualization of discourse takes place through the mutations of genre is illustrated by a comparison of two passages on the theme of epileptic seizures: one from a research paper (Text E) and one from a pharmacology textbook (Text M). Both the epidemiological research paper (Text E) and the pharmacology textbook (Text M) discuss the difference between two types of epileptic seizure: partial seizures and generalized seizures. Partial seizures are seizures "in which the discharge remains localized"(Text E); while generalized seizures, which include tonic-clonic seizures, "begin locally, but spread quickly to involve the reticular system, thus producing electrical activity through both hemispheres"(Text M). In Text E, the

Present Perfect, Past and the Present tenses are used to locate the analysis in the **field of production** both of former studies and of the authors' own. This combines with the uses of exponents of speaker's comment in the text[44] to infuse the meaning of the text with a degree of uncertainty and tentativeness.

> Prolonged febrile seizures in childhood have been suggested to cause mesial temporal sclerosis and thus lead to later complex partial seizures. We found no difference between the tonic-clonic and complex partial groups in the proportion with a history of febrile convulsions. This supports Rocca et al.'s opinion that when febrile seizures precede afebrile seizures there is usually pre-existing brain lesion in the case of complex partial seizures, but we found no greater proportion with a positive family history in the tonic clonic group nor an increased proportion if symptomatic seizures in the complex partial group. In this part of the study our numbers were small and our conclusions were tentative.[45]

First, the use of the Present Perfect, *have been suggested*, indicates a reference to an area of enquiry which relates to the current area of research both in terms of relevance and facuality. Then the current findings are set in their temporal context with a reference to the present piece of research through the use of the Past tense *found*. Importantly, "Rocca et al.'s opinion" enters into the discussion

with a positive reporting verb in the Present tense, *supports*, followed by a statement also in the Present, *precede*, which infers a high degree of validity for the ensuing proposition. This is in marked contrast with the sentence following, which has an equivocal reporting verb in the Past, *suggested*, indicating a decline in the truth value ascribed to this proposition. Finally, the authors again employ the Past tense with the verbs *found* and *were* to locate their own research in its context of production, concluding with the phrase *are tentative* to further modulate the truth value of their own findings.

Thus, one can speak of 'degrees of recontextualization' in the movement of a text from the primary context of the production of discourse to the tertiary context of the recontextualization of discourse. This can be analysed across two axes: a) discursive recontextualization (DR) - i.e. the degree to which the arrangement of the text reflects the process whereby its content is arrived at; and b) verbal recontextualization (VR) - i.e. the extent to which the writer modulates and negotiates his or her argument through the articulation of exponents of speaker's comment within the text. A recontextualized text can be situated on the 'recontextualizing grid' such as the one over (Fig. 9.2):

A low degree of recontextualization entails a recontextualized content that is still relatively problematic and hence retains a high incidence of linguistic markers of recontextualization (VR-). It also renders explicit within the

discursive arrangement of the text the process whereby the knowledge within the text is constructed (DR-). A high degree of recontextualization describes a recontextualized text whose content has become - through virtue of a lengthy process of 'sedimentation' in successive texts and its transmission within the pedagogical system over a long period of time - relatively unproblematic and hence displays a low incidence of linguistic markers of recontextualization (VR+) and whose knowledge-processes are not revealed explicitly in the text's discursive organization (DR+).

Figure 9.2 Recontextualizing Grid
Degrees of recontextualization described along two axes

	DR	VR	
Process explicit in textual arr.	-	-	High incidence of linguistic markers
Process implicit in textual arr.	+	+	Low incidence of linguistic markers

Just as the overall structure of the discourse of the research article operates at a low level of discursive recontextualization (DR-) and reflects in the organization of the discourse the context of production of the medical knowledge through its adherence to the heterodox IMRD framework, so it also operates at a low level of verbal recontextualization (VR-) in terms of disclosing through its temporal reference the often equivocal context in which the medical knowledge was

produced.

On the other hand, the medical textbook exhibits a high degree of verbal recontextualization (VR+) in the shift of tenses exclusively into the Present, as the findings of multifarious discrete research programmes are combined into a homogeneous recontextualized text.

> A tonic-clonic seizure consists of an initial strong contraction of the whole musculature, causing a rigid extensor spasm. Respiration stops and defecation, micturation and salivation often occur. This tonic phase lasts for about 1 minute and is followed by a series of violent, synchronous jerks which gradually die out in 2-4 minutes. The patient stays unconscious for a few more minutes and then gradually recovers, feeling ill and confused, and is sometimes injured by the convulsive episode. The EEG shows generalized continuous high frequency activity in the tonic phase, and an intermittent discharge in the clonic phase (Fig. 24.1C).[46]

Here, the overall condition of the tonic-clonic seizure is categorized unequivocally: it "consists of an initial strong contraction of the whole musculature, causing a rigid extensor spasm". Following this, the idealized epileptic patient "stays unconscious for a few more minutes and then gradually recovers, feeling ill and confused", frozen forever in an state of ever-present veracity. Most significantly of all for the present discussion, there is a reference to a

'delocated' finding from an actual research article: "the EEG shows....". Although the figure referenced in the text refers to a cited piece of research, its reading is no longer open to discussion. The partially represented findings of the original author's research[47] are portrayed as unquestioningly situated in present time, no longer located within a particular design of research or specific set of patients in the past. Here the use of the Present tense in the medical textbook contrasts starkly with the modulated combination of Present, Present Perfect and Past tenses in the Discussion section of the medical research article.

The context-specific research paper deals with a proportion of patients whose history of febrile convulsion indicates that the relationship between generalized, tonic-clonic and partial seizures may be problematic; the delocated textbook text hypostatizes an imaginary, idealized and absolute distinction between these two types of epilepsy.

9.3 Secondary Context

In comparison with the medical research paper and the medical textbook, Table 9.1 shows that the medical interview marks a temporal halfway point in terms of the transformation of the 'pastness' of the medical research paper into the 'presentness' of the medical textbook. Since we have already seen that tense may be used as a marker of certainty, this distribution of tenses may also implicitly indicate the degree of certainty with which statements are formed within the context of the medical interview. About half of all the clauses in the medical interviews were in the Present, and roughly a third were in the Past. However, tellingly, the incidence of the Perfect tenses was about the same as the medical research paper, while the use of the Future tenses was much more than any other genre.

It is evident by looking at the attribution of the different number of clauses to the different participants in the conversation that the doctor does far more of the talking than the patient in the medical interview at a ratio of exactly 2:1 (Table 9.2). However, the doctor's participation in the conversation is more prevalent in certain tenses than in others, and this provides a clue to the particular areas of contribution of the respective participants in the interview situation. While well over half the clauses which feature the Present tense fall within the speech of the doctor, the Past tense is the only tense which the patient uses in the medical

interview in an equal amount to the doctor; and thus relatively, it is the only area of temporal expression in which the patient is on an equal footing.

Table 9.2 Percentage distribution of 4 major tense types within 4 medical interviews

		Pres	Past	Perf	Fut	Total
Text A	Doc	28.0	24.0	4.0	5.0	61.0
	Pat	26.0	16.0	1.0	0.0	43.0
Text B	Doc	26.0	22.0	4.0	4.0	56.0
	Pat	15.0	34.0	5.0	0.0	54.0
Text C	Doc	59.0	15.0	11.0	6.0	91.0
	Pat	16.0	5.0	2.0	0.0	23.0
Text D	Doc	55.0	7.0	7.0	13.0	82.0
	Pat	10.0	13.0	1.0	1.0	25.0
Total	Doc	168.0	68.0	26.0	28.0	435.0
	Pat	67.0	68.0	9.0	1.0	
Total%	Doc	38.6	15.6	6.0	6.4	66.6
	Pat	15.4	15.6	2.1	0.2	33.3
Overall Total%		54.0	31.3	8.0	6.7	

In order to account for this phenomenon, it is necessary to remind ourselves of the specific functions of the different groupings of texts within the context of the reproduction of medical knowledge, and hence the constitution of the medicalized subject. It will be remembered that Texts A and B were in

fact first out-patient appointments; while Texts C and D were follow-up appointments. It can also be seen (Table 9.2) that the use of the Past tense relative to the Present was far higher in the first outpatient interviews than it was in the follow-up interviews. The reason for this that the Past tense is employed by the patient in the first stage interview to give an account of the condition, in this case, of the patient's child. The Past tense is used by the patient temporally to locate the occurrence of the signs and symptoms of the disease in the Past. In this way, taken across all the interviews, the patient's use of the Past tense is relatively higher than the doctor's use of the Present tense.

In Text B, the patient, prompted by the doctor, relates the story of her child's most recent attacks.

Doctor: And tell me about the last time.

Patient: It was the same again - she had a temperature of 103.

Doctor: What was the first thing you noticed when she had these attacks?

Patient: Well, she didn't reply - she just stared and then she started kicking her legs.

Doctor: How - together or alternately?

Patient: Um - well - I don't know really. Dr. W. looked to see if it was one side only. It wasn't, then he went and she started jerking again, moving her head from side to side with her eyes turned upwards.

Doctor: And when was she doing this, did she understand?

Patient: No, she was switched off completely.

Doctor: How long was it before she came round?

Patient: About half and hour - she slept then, and knew nothing about it.

Doctor: She's never wet herself?

Patient: No, never.

From our brief insight into the received definition of tonic-clonic seizures above, we know that the doctor is drawing on some of these concepts implicitly to elicit a description of the attacks from the patient. The doctor is trying to find out whether the spasms are "synchronous", and importantly whether "micturation" has occurred. Again, it is interesting to note that, as with the modulation of the "electrocardiogram" to "electrical test",[48] "micturation" is modulated in the context of the medical encounter to "wet herself". Importantly the generalized description of the fit in the textbook described in the Present tense is in the medical interview particularized and localized in past time to one particular patient.

This large component of 'pastness' is found far more in the first outpatient interviews (Texts A and B) than in the follow-up interviews (Text C and D) because, in the context of the reproduction of medical knowledge, the specific context of the patient's condition is voiced only once, in the first outpatient's visit. This is one of the reasons why the two different types of visits are regarded as generically different. In successive visits, the particularized account of the patient's condition is superseded by the generalized ac-

count of the diagnosis. The 'pastness' of the patient's story is indeed left behind in time as the institutionalized account of the illness fills the discursive space. However, at no point does the doctor ever give an explicit account or diagnosis of the patient's condition. It is as if the textbook account in the recontextualizing field is an always unspoken account which is running parallel to the patient's story. The unvoiced 'presentness' of the textbook account acts as a simultaneous interpretation of the 'pastness' of the patient's particularized condition.

Yet the Present tense is in fact the tense most used in the medical interview; and it is used by the doctor more than twice as much as the patient. However, it is not as might be initially assumed the 'presentness' of facuality - the exegesis of the case. The diagnosis is not in any of our four interviews explicitly recounted to the patient. The only way in which the textbook account informs the speech of the doctor is by supplying him or her with the questions to use in the interview, the line of inquiry; but the thought behind the line of enquiry is rarely made explicit.[49] In this way, the doctor is able within the context of the medical interview to make the epistemological leap via the unspoken interpretation provided by the recontextualizing field, straight from the patient's narrative to the supply of medication, without any intervening overt discussion with the client. Thus, the Present and the Future in the interview are both bound up in the issuing of 'goods-and-services'[50] in the shape of medica-

tion to the patient, rather than an exegesis of the case. At the close of Text C, we find a complex of Present and Future tenses infused with modality, in which the doctor has shifted the ground from the patient's description of the condition to the provision of goods and services in the shape of medication.

Doctor: You may find it easier to give her a double dose of epilim. So you're still giving her 4 a day?

Patient: Yes.

Doctor: What times do you usually give them?

Patient: Oh, first thing in the morning - then at lunch time, and just before she goes to bed.

Doctor: Let's do it this way. There's 4 doses. Let's double it in the morning. So that's first thing in the morning, 2 epilim - lunchtime one, and then one more in the evening - plus the phenytoin. Then we'll increase it to 5 tablets and it'll be just phenytoin in the morning.

Within any medical interview, a discursive shift occurs from the patient's description of condition to the dispensation of goods and services. But within the patient's movement through the 'cycle' of the reproduction of medical discourse, in subsequent encounters, their own account tends to be superseded by a debate which goes on more and more exclusively in terms of the types of medication being used. At the end of the 'dysfunctional' interview in Text D, the doctor can only reas-

sure the challenging patient by turning a question about the fits into a statement about the efficacy of the medication.

Patient: Will they ever go?

Doctor: Yes - they will. We'll get them under control; and it's a matter of finding the right one. There are so many different types and drugs. We'll find the right one, don't worry.

9.4 Recontextualization of Time-Space Relations

The pedagogic device operates within medical discourse to delocate the discourse of the research article that is produced within the primary context and relocate it in the tertiary context within a different form of text. One way in which this delocation and relocation takes place is through a shift in the expression of relations of both time and space as expressed by the modulation of tense within the recontextualizing process. The Past tenses modulate into the Present.

The temporal implication of this is that a particular statement is not true only at the moment in which a particular piece of research was carried out, but has now attained the status of truth within the discourse community of medical scientists. From this, we can arrive at the first substantive quality which characterizes that common sense knowledge of the discourse community of scientists - that of "presentness".

However, the spatial relations of the text have also shifted, since the use of the Present tense also implies a

move away from the specific situational context in which a particular piece of knowledge was first produced and expressed within scientific discourse. The use of the Past tense in the texts produced within the primary context not only delimits the temporal axis of the text, but also the relations of the 'context of situation' of the production of a particular piece of discourse. The shift into the Present tense in the recontextualizing field enables the relations of the text to its 'context of situation' to be transcended.

This brings us to our second substantive quality of this modality of scientific knowledge - that of "immediacy", in terms of spatial location. The modulation of tense from the Past to a system of linguistic relations discursively constructed and maintained within the Present symbolizes the virtual (though not real) truth of a series of statements.

This aspect of the **ideational metafunction** of the linguistic relations of the pedagogic device operates as a symbol system which has an *ideological effect*, as anticipated in Chapter 1. Here, it can be seen that language can operate ideologically not just by utilizing the affective connotations of individual words, as in Geertz's essay;[51] but also by employing grammatical relations within the **field** of particular genres to create the symbolic appearance of the veracity of the text. In this way the delocation and relocation of the recontextualized text in time and space according to the principles of the pedagogic device leads to an *ideological effect* within the construction of medical discourse.

Notes and References

1. Bourdieu, P., & Passeron, J. (1977). Outline of a Theory of Practice. Cambridge: Cambridge University Press, pp.164 ff.

2. Geertz, C. (1983). Common Sense as a Cultural System. In Local Knowledge (pp.73-93). New York: Basic Books.

3. Geertz (1983), p.73.

4. Geertz (1983), p.77.

5. Foucault, M. (1973). The Birth of the Clinic. London: Tavistock, p.57.

6. Geertz (1983), p.85.

7. Geertz (1983), p.85.

8. Well documented by Diana Adams Smith (1987). Variation in field-related genres. E.L.T. Journal, 1, (10-32).

9. Geertz (1983), p.87.

10. There is a synopsis of the four texts in Appendix E.

11. Rang, H.P., & Dale, M.M. (1986). Drugs used in treating motor disorders: epilepsy, Parkinsonism and spasticity. In Pharmacology (pp.530-539). Edinburgh: Churchill Livingstone.

12. Stryer, L. (1988). DNA: genetic role, structure and replication. In Biochemistry (pp.559-573). (3rd ed.). San Francisco: W.H. Freeman.

13. Guyton, A.C. (1991). Blood flow through the systemic circulation and its regulation. In Anatomy and Physiology (pp.451-460). (8th ed.) Philadelphia: Saunders.

14. Guyton, A.C. (1991). The skeletal system and its joints: 1. General structure; bone as tissue; the skull. In Anatomy and Physiology (pp.87-95). (8th ed.) Philadelphia: Saunders.

15. Glasgow University Faculty of Medicine. (1990). MBChB Course Compendium; Information for First Year Students. Glasgow: Glasgow University.

16. E.g. Heslot, J. (1982). Tense and other indexical markers in the typology of scientific texts in English. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.83-103). Copenhagen. Copenhagen School of Economics; Lackstrom, J.E., Selinker, L. & Trimble, L.P. (1972). Grammar and technical english. English Teaching Forum, X(5), (September-October), 3-14; Malcolm, L. (1987). What rules govern tense usage in scientific articles? English for Specific Purposes, 6, 31-44; Oster, S. (1981). The use of tenses in reporting past literature in E.S.T. In Selinker, Tarone & Hazeli.(Eds.), English for Academic and Technical Purposes (pp.76-90). Rowley, Mass: New-

burg House; Selinker, L. & Trimble, L.P. (1976). Scientific and technical writing: the choice of tense. English Teaching Forum, (October), 22-26; Trimble, M.T. & Trimble, L. (1981). Rhetorical features of scientific and technical texts as a major factor in E.S.P. communication. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.199-217). Copenhagen. Copenhagen School of Economics.

17. Chapter 8, p.236 ff.

18. Lackstrom et al. (1972); Selinker et al. (1976); Trimble and Trimble (1982); Trimble (1985).

19. Comrie, B. (1985). Tense. Cambridge: Cambridge University Press, p.1.

20. Lyons (1968). Introduction to Theoretical Linguistics. London: Cambridge University Press, pp.304-306; (1977). Semantics (Vols. 1-2). London: Cambridge University Press, p.678.

21. Malcolm, L. (1987). What rules govern tense usage in scientific articles? English for Specific Purposes, 6, p.33.

22. Swales, J. (1981). Aspects of Article Introductions. Birmingham, UK: The University of Aston Language Studies Unit; (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press.

23. In Chapter 7.

24. Trimble (1985).

25. Lackstrom et al. (1972).

26. Oster (1981).

27. Oster (1981), p.77.

28. Swales (1990), p.152.

29. Swales (1990), p.153.

30. Een, J. A. (1982). Tense usage in reporting research in geotechnical writing. In Working papers in ESL, 2 (pp.72-91). Minneapolis. University of Minnesota.

31. Malcolm (1987).

32. After Comrie (1985).

33. Malcolm (1987), p.31.

34. Malcolm (1987), p.32.

35. C.p. context of situation as outlined in Halliday, M.A.K. & Hasan, R. (1976). Cohesion in English. London: Longman.

36. Malcolm's (1987) use of the term 'field' is ambiguous. She does not use it in the same way as Halliday and Hasan (1978), and certainly not in the same way as Bernstein (1990) or Bourdieu (1977).

37. Malcolm (1987), p.34.

38. Heslot (1982).

39. Heslot (1982), p.97.

40. Heslot (1982, p.100).

41. Lackstrom et al., in two papers (1973; 1976), emphasize the role of what they term 'presupposition' (1973, p.128) upon surface syntax, and in particular choice of tense. Presupposition is "information shared by the speaker and listener" (1973, p.128).

42. Swales (1981; 1990).

43. See Chapter 7.

44. E.g. reporting verb - *found, suggested, supports; first person* - we; *reporting noun* - opinion, conclusions; *premodification* - usually; postmodification - *tentative*. See Chapter 11 for a fuller discussion.

45. Text E, p.860.

46. Text M, p.531.

47. Eliasson et al. (1978) in Text M.

48. Chapter 6, p.194.

49. Thus Michel Foucault was first able to deduce that he had AIDS from the questions that the doctors were asking him (Eribon, 1992, p.325).

50. Compare Chapter 6, p.194.

51. Geertz, C. (1964). Ideology as a Cultural System. In D.E. Apter, Ideology and Discontent (pp.47-75). New York. The Free Press of Glencoe.

CHAPTER 10

PROCESS AND ACTION

In the previous chapter we saw how the medical textbook was characterized, not so much by its overall rhetorical features, but rather by its mobilization of the resources of the **ideational meta-function** to transform the relations of time and space in the ideological construction of the veracity of the text. And in this respect, it was seen that as a text which was produced in the field of production of medical discourse was delocated and relocated in the recontextualizing field, there was a shift in the linguistic relations of tense that transformed the referentiality of the text in time and space, hence yielding that form of knowledge - the common sense knowledge of the discourse community of scientists - the substantive qualities of "presentness" and "immediacy". However, there are other linguistic relations within the **field** of the medical text which also change as a text becomes a recontextualized text. In this chapter we will look at the way in which two other aspects of the **ideational metafunction** of the text shift in accordance with the principles of the pedagogic device.

We will now go on to examine the changes in transitivity and voice which affect the representation of process and action within the clause of the medical text in the process of recontextualization. By examining these sets of linguistic relations across different genres, we will be able to derive

two more substantive qualities of the common sense knowledge that are conveyed by the linguistic structures of the recontextualized text: those of "concreteness" and "affectedness".

10.1 Process

The ideational metafunction of the text also focuses on the unit of the clause in "its role as a means of representing patterns of experience", for "it is the clause that functions as the representation of processes."[1] Within the clause, experience is represented as a "semantic configuration" which consists of three components: a process and its participants (without which a clause cannot be a clause), and the circumstantial elements which are optional for the construction of a clause. These three components correspond to the verbs, nouns and the residue of a conventional grammar. The systematization of these three components within the clause forms what is termed "transitivity". "Transitivity specifies the different types of processes that are recognized in the language, and the structures by which they are expressed."[2]

The system of transitivity is essentially the structure by which the relations between the three component parts of the clause are expressed. As we have seen in Halliday's analysis of The Inheritors,[3] the assignation of different roles within the transitivity system of the clause to the different participants within a linguistic exchange can be interpreted as being related to the distribution of power between

different participants within a social situation. This is to say that in its crudest sense, if transitivity expresses the relationship between someone or something that is an agent, and somebody or something that is acted upon; then the subject within a linguistic exchange that is represented in the role of agent accrues power within a social exchange; whereas the object that is acted upon within the linguistic exchange may be said to be at a power-deficit within a socio-linguistic situation. This extends to the use of forms of the passive within conventional grammar. The subject who is represented within the grammar of a text as being acted upon by the 'impersonal' forces (e.g. of science) becomes 'disempowered' within the text; and in this way the grammatical positioning of the subject in a medical text can both reflect and reinforce the subject's extra-textual social position in the hospital or clinic and more generally as this relation is repeated and recreated through continual social encounters.

The distribution of forms of transitivity at a linguistic level within texts that are operational within the bureaucratization and institutionalization of knowledge both reflects and effects the distribution of relations of power at a social level. An analysis of the changes in the system of transitivity between the four different modalities of discourse within the field of medicine reveals the shifts in the distribution of relations of power among the participants in the discourse and their relations to the institutions which produce the discourse in its different modes.

Table 10.1
Percentage distribution of process types in 4 types of medical text

	Nomothetic	Idiopathic	Interview	Textbook
Material	27.2	31.1	20.6	40.8
Relational	43.3	40.3	44.5	45.7
Mental	12.4	11.6	20.2	7.1
Verbal	12.7	10.6	2.9	5.6
Behavioural	1.2	0.7	5.5	0.1
Existential	3.2	5.7	6.3	0.8

Halliday identifies six different types of process expressed in the verb group, which were all found in the four modalities of medical text: material, mental, behavioural, existential, relational and verbal (Table 10.1). Each of these six types of process are defined according to a different "semantic configuration" which transcends the crude dichotomy between active and passive. Certain of these process types occur more frequently in the analysis of medical texts than others. The material and relational processes were found to have the greatest frequency in medical texts taken as a whole, although five of the six process types displayed meaningful shifts in frequency according to different modalities of text types. The type of process which appeared most often, the relational, also displayed the greatest regularity of occurrence through the four different types of text.

10.1.1 Material processes

Halliday describes material processes as "processes of 'doing'". "They express the notion that some entity 'does' something - which may be done 'to' some other entity."[4] This, then, is the type of process which comes closest to conventional notions of transitivity. Halliday uses the word "Actor" to describe the doer, and the word "Goal" to describe the recipient of the action. However, a more appropriate concept to apply to the relationship between the verb group and the noun group at this point is that of extension. The Goal is the "one to which the process is extended".[5] The classic material process involves a verb which can describe either a concrete or an active process in relation to which the Actor and Goal takes up either an active or the passive position. The following example of active and passive concrete processes is represented in our anatomy textbook (Text P):

this marrow	forms	all of the red blood cells[6]
Actor	Process	Goal

bone	is formed	by a type of cell called osteoblasts[7]
Goal	Process	Actor

However, material processes can represent abstract doings and happenings as well as concrete ones, with the same relations of transitivity. In contrast with the relative 'concreteness' of the medical textbook, many of the verbs rep-

resenting material processes in the medical research article in fact represent abstract processes of cognition. These are also subject to conventional relations of transitivity:

we	defined	an index case...[8]
Actor	Process	Goal

the index patient	was defined[9]	
Goal	Process	

With abstract processes, the difference between Actor and Goal becomes harder to draw. Sometimes active and passive forms can coexist with very little difference between them in meaning; although there is still a difference in terms of the formal assignation of transitivity.

Table 10.1 displays the percentage distribution of the verbal expression of different processes across the four different types of medical text. Taken overall, the sample of textbook texts yields a proportionate amount of material processes of slightly over 40%. This is roughly a quarter as much as the case history and research reports. In terms of the verbal recontextualization of medical texts, the medical textbook is most concerned with brute facts, the 'what' of 'what things do' rather the 'how' of 'how things are perceived to do'. Just as in the process of verbal recontextualization, there is a shift from Past time, which reveals the temporal context when the knowledge is constructed; so there is a cor-

responding increase in the unquestioning materiality of the representation of scientific process in the recontextualized text which supports the truth value of the text.

10.1.2 Relational Processes

Halliday[10] distinguishes three types of relational processes: intensive ('*x*' is '*a*'), circumstantial ('*x*' is at '*a*') and possessive ('*x*' has '*a*'). He further subdivides each category into two, attributive and identifying: "in the attributive mode, an attribute is ascribed to some entity.....In the identifying mode, one entity is used to identify another."[11] The fundamental grammatical distinction between the attributive and the intensive modes is that, while identifying clauses are reversible, attributives are not. This has important implications for the transitivity of the clause, for "...an identifying clause has a passive. An attributive clause has no passive."[12] As can be seen (Table 10.1), relational processes constitute by far the largest and most consistent single category of process type throughout the four different types of medical text; and there is no significant variation between different genres. One can therefore say that all medical discourse consists of 40-45 per cent of the representation of relational processes within the clause irrespective of which genre is used. This bears out Halliday's observation[13] that:

.... in many registers - various kinds of scientific writing, for example - relational processes tend to be the most frequent and perhaps the most informative of the primary clause types.

Table 10.2 also shows the percentage distribution of the three different types of relational process within the four different genres. Here, the most frequent type of relational process throughout is the intensive, with no significant variation in its incidence through the different types of text. The highest distribution of intensive relational processes are found in the medical case history and the textbook; so no clear pattern of shift can be found across genres.

Table 10.2
Percentage distribution of relational processes in 4 types of medical text

	Nomothetic	Idiopathic	Interview	Textbook
Intensive	42.9	52.6	41.5	53.0
Circumstantial	26.7	22.2	30.9	31.3
Possessive	30	25.1	27.6	15.7

Relational processes of circumstance account for roughly a third of all relational process types across genres, with the highest incidence being in the medical interview and medical textbook; again, no significant variation across genres is

revealed. Finally, possessive relations in the clause account for rather less again; but here there is one significant shift across genres - the textbook does appear to be particularly low in relational expressions of possession, having about half the tally of the research paper. In short, the recontextualized text would appear to be relatively richer in intensive and circumstantial relational clauses than in clauses of possession. This may be due to the intensified alignment of the recontextualized text with the logical processes of the cause-and-effect. Within the three different types of relational clause, the intensive and circumstantial would appear to be more dynamic than the circumstantial type, which is clearly a more static form of relationship.

10.1.3 Other Process Types

In a previous section[14] the linguistic expression of material processes increases as the medical text is moved from its position in the primary context of discourse to the tertiary context. As the knowledge becomes more 'sedimented' in its movement from case history and research report to textbook, so the frequency of material expressions is seen to increase by as much as a quarter. Just as the linguistic expression of material processes increases across these different genres, so the expression of other process types decreases. Four other functional categories of process are found with diminishing frequency as medical knowledge is

'cycled' from the research paper to the textbook: mental, verbal, behavioural and existential processes (Table 10.1). Mental processes relate to the experience of thinking, feeling, and believing; verbal processes are processes of saying which cover both literal as well as symbolic exchanges of meaning; behavioural processes represent what are essentially reflex actions; and existential processes are a certain way of expressing of 'being', using *there* + *be*.

Halliday brings out the contrast between material processes and mental processes as being quite fundamental to the definition of new, specific criteria of transitivity according to the semantics of the grammatical relations represented in different categories of process.[15] However, mental processes do not constitute such a significant category in the four genres of medical discourse as either relational or material processes. Nevertheless, the fact that they are represented at all significantly in any genre of scientific rationality which is ostensibly oriented towards the representation of a strong measure of objectivity demands comment.

As anticipated above, the overall pattern of distribution of these four minor process types across the different genres of medical discourse bears an inverse relationship to the distribution of the frequency of material relationships across the four text types. Within the category of mental processes the overall frequency of linguistic expression drops by about two fifths as the research paper is recontextualized within the framework of the medical textbook; and the expression in

the text of overt verbal processes drops by about a half. This is in keeping with the elision of explicit discussion of the sources of the assertions made within the medical textbook. Furthermore, the incidence of existential processes and in particular behavioural processes are virtually eliminated from the recontextualized text. Thus the selection of verbal process types within the language of the medical textbook contributes towards the construction of the recognized and recognizable veracity of the recontextualized text.

10.1.4 Field of Reproduction

In the field of reproduction (medical interview) the representation of material processes was lower than that in the field of production (research article), with a corresponding increase in the representation of the mental, behavioral and existential processes. The representation of verbal processes was, however, lower than any other mode of discourse.

Looking at the distribution of the use of different process types between the two participants within the medical interview, it can be seen that overall the doctor uses material verbs at least twice as often as the patient in the medical interview (Table 10.3). The general adoption of descriptors of material processes may indicate the doctor's tendency to rationalize the 'non-material' expressions of the patient within the medical encounter.

Table 10.3
Comparative distribution of process types between doctor and patient in 4 medical interviews.

	Material		Mental		Behavioural		Existential		Verbal		Relational	
	Doc	Pat	Doc	Pat	Doc	Pat	Doc	Pat	Doc	Pat	Doc	Pat
Text A	5	12	13	24	5	6	6	10	2	3	31	50
Text B	16	8	8	12	2	8	3	2	2	3	25	21
Text C	24	4	14	3	4	0	1	1	2	0	23	14
Text D	23	6	16	6	0	1	5	2	1	1	37	11
Total	68.0	30.0	51.0	45.0	11.0	15.0	15.0	15.0	7.0	7.0	116.0	96.0
%Total	14.3	6.3	10.7	9.5	2.3	3.2	3.2	3.2	1.5	1.5	24.4	20.2
Overall %		20.6		20.2		5.5		6.3		2.9		44.5

However, the same pattern of distribution was not seen in the expression of the other linguistic process types between the two participants in the medical interview (Table 10.3). This appears to differ between the first outpatient's visit (Texts A and B) and the follow-up visits (Texts C and D). The patient uses significantly more mental process types relative to the doctor in the first outpatient interview than in the follow-up. The pattern of this shift between the two types of interview can also be seen in a less dramatic and less well defined way with the distribution of the expression of the remaining three process types: behavioral, existential and verbal.

10.1.5 Recontextualization of process: textual analysis

Two sample passages on the theme of blood were selected for an analysis of the different types of process represented in their clauses to exemplify the sorts of shift that take place in the selection and representation of different process types between a text created and produced within the field of production, and one which is repositioned within the recontextualizing field.[16] The first was a passage from an epidemiological study of AIDS (Text G); the second was a passage from the textbook chapter which dealt with haemodynamics (Text O).

Out of 9 clauses, the text from the field of production has 3 which represent material processes: *published studies...have not allowed examination*, *HIV is more easily recovered* and *40 out of 82 infected women never practised anal sex*. Of these, two represent concrete material processes while 1 represents an abstract material process. Moreover, two of the clauses are negated and in one the verb is subject to premodification. Three of the clauses are relational clauses: *a higher quantity...may be present*, *these high risk sexual practices...were not essential* and *eight out of 19 infected men never had intercourse*... Of these all three were attributive, two being intensive and one being (at least metaphorically) possessive. Two clauses were classified as representing verbal processes, although this emerged as rather a problematic category in the analysis of the medical research

papers. Taking Halliday's dictum[17] that verbal processes can cover "any symbolic exchange of meaning", we included in this category: *anal sex has been shown to increase the risk...* and *the role of sexual contacts during menses has been suggested.* However, *it should be noted* was assigned to the realm of mental processes. Some degree of subjective interpretation may obviously come into play in the assignation of certain clauses to the categories of mental or verbal process.

Out of the nine clauses in the recontextualized text, five represent material processes, two represent relational processes and only one represents a verbal process. *The force that the blood exerts, this force distends, pressure also makes the blood..., the normally high pressure...forces the blood., (the force) that makes the blood...* are all clauses which represent material processes. Of the relational clauses, only one is attributive this time: *all blood vessels are distensible;* while two are identifying: *the pressure in a blood vessel is the force* and *the importance of blood pressure is that....* Finally there is one remaining clause which is rather tentatively assigned to the difficult category of verbal process: *which means that...*

A summary of the distribution of the different verbal process types across the two samples of text can be seen in Table 10.4. From a comparison of these two samples, another characteristic of the verbal recontextualization of the medical text can be identified. The texture of the processes which are represented within the clauses increase in their

materiality or 'concreteness'. This is another factor which adds apparent veracity to the text as it is relocated within the recontextualizing field. The recontextualized text has more instances of material processes than the primary text; and they are also less equivocal. Two of those represented in the primary text are negated, and one is subject to premodification.

Table 10.4
Comparative frequency of process clause types in two medical texts

Process	M	R	S	B	V	E	Tot
Text G	3	3	1	0	2	0	9
Text O	5	3	0	0	1	0	9

There are no examples of premodification or negation in the recontextualized text. Both texts have 3 instances of relational clauses, but in the recontextualized text 2 of these are identifying; while all three are attributive in the primary text. In the recontextualized text the identifying relationship between the two entities of token and value constitutes the more concrete relational form, as the value is represented by a noun; whereas in the relationship between carrier and attribute in the primary text, the attribute is represented by the less concrete adjectival form. To offset the increase in material process in the recontextualized text, the primary text has two instances of verbal process and one

of mental process to the other's single example of verbal process. Here again, the functions of the verbs in the process types of the primary text reveal something of the rational and intellectual processes underlying the production of what counts as new knowledge in a medical field; whereas these processes are elided in the delocated and recontextualized text.

In this way, the selection and representation of experience within the ideational function of the "meaning potential" of the English language differs considerably between a text which operates within the primary field of medical discourse and a text which operates within the recontextualizing field. The text within the recontextualizing field exhibits a greater materiality or 'concreteness' of process type within its clauses, which adds to the implied truth value of that mode of discourse. Therefore the linguistic selection within the recontextualized text from the "meaning potential" of English enables the representation of the experience of scientific rationality with a greater degree of certainty as it shifts from the field of production to the recontextualizing field.

10.2 Transitivity and Voice

In the previous section, we looked at the ways in which different types of process are represented in the clause within medical discourse; and how shifts in the distribution of these process types take place as a text moves from the field of production to the recontextualizing field. The different functions that were assigned to the different participants in each process type were also defined. It was possible to examine with some precision how various shifts take place in the distribution of these processes and the relations between their participants across different contexts in the production of medical discourse. While it is true to say that each of these types of process are different, it is also equally valid to say that there is a certain common "representational structure" underlying each type.

> Material, behavioural, mental, verbal, relational and existential processes each has a grammar of its own. At the same time, looked at from another point of view they are all alike. At another level of interpretation, they all have the same grammar: there is just one generalized representational structure common to every English clause.[18]

This "generalized representational structure" is that of transitivity (as a feature of the verb) and voice (as a feature of the clause). And in many ways, as was seen earlier from

Halliday's interpretation of The Inheritors,[19] this is the representational structure that is linked most strongly to the assignation of power relations within the clause. However, Halliday's version of transitivity is not confined to a crude distinction between the active and passive voice. The increasing use of the ergative structure within the clause in the English language which, as shall be seen, also features prominently within scientific language, has led systemic grammarians to rewrite the conventional notions of voice for the English language.

The distinction between a transitive and intransitive verb is based on the principle of extension - as to whether, if an Actor participates in some process, the process actually extends beyond the Actor or not. In the ergative interpretation of the clause, the emphasis is not so much on the principle of extension as on the principle of causation within the clause. An ergative clause is one where the action is caused by some external agency; a non-ergative clause is one where the action is self-engendered. Halliday associates "the coming of this pattern to predominance in modern English" as part of "a far-reaching and complex process of semantic range".

These changes have tended, as a whole, to emphasize the textual function, in the organization of English discourse, by comparison with the experiential function; and, within the experiential function, to emphasize the cause-&-effect aspect of processes by comparison with the 'deed-&-extension' one.[20]

These changes are attributed to the need for the English language to "adapt itself to a rapidly changing environment" over the past five hundred years. One of the aspects of change in the linguistic environment that has been most marked in this century has been the development of specialized conventions of language in contexts such as scientific discourse, in the process of the rationalization and bureaucratization of human experience within modern societies. In this respect, by examining the grammatical relations within one specialized field of scientific discourse, we are not only looking at the mechanics of the synchronous negotiation and distribution of power within that field; we are also excavating diachronically the contexts which have induced changes across the entire system of contemporary English language.

In the transitivity model, all processes were described in terms of an Actor, Process and an optional Goal. Thus, *respiration stops(S1)* would be analysed under the old schema as Actor + Process; and *the seizure stops respiration(S2)* as Actor + Process + Goal. However, it can be seen that this interpretation does not do justice to the actual meaning of both sentences. For it is *respiration* which 'is stopping' (i.e. undergoing the process of stopping) in both cases. In the ergative system, the focus on the two sentences is inverted, and *respiration* element is given prominence in the analysis. Halliday classes this element as the Medium, "since it is the entity through the medium of which the process comes into

existence":

> Every process has associated with it one participant that is the key figure in the process; this is the one through which the process is actualized, and without which there would be no process at all.[21]

According to the model of transitivity, in the 'intransitive' *S1* above the Medium would be equivalent to the Actor; in the 'transitive' *S2* following, the Medium would be equivalent to the Goal. It is the Medium rather than the Agent which is obligatory in all processes. It also always participates directly in them - it is never introduced into the clause by means of a preposition.

From the ergative perspective, it is the Process and the Medium that make up the 'nucleus' of the English clause. This may either exist on its own, or along with other functions. The most general of these options is where, as well as the Medium, there is another participant in the clause which functions as an external cause of the process. This additional, optional participant, Halliday calls[22] the Agent. Thus the clause *respiration stops(S1)* is structured as Medium + Process. In this form, the process is represented semantically as being self-engendered, even though there may have been some external agency involved. It is only when the Agent is explicitly stated in the clause that some external agency is acknowledged, as in *the seizure stops respiration(S2)*. It is,

however, only true of clauses in the active voice that the elision of the Agent in the clause implies the actual absence of agency. If the clause is in the passive, *respiration is stopped(S3)*, an agent is assumed. This has important implications for the assignation of transitivity to the verb, as shall be seen below.

10.2.1 Field of Production and Field of Recontextualization

Table 10.5 represents the proportional distribution of Halliday's four categories of transitivity within each of the four genres: effective(E), middle(M), effective passive(EP) and medio-passive(MP). An analysis yields some interesting observations. Taking both modalities of medical report writing together, a remarkable similarity can again be seen in the distribution of the texture of transitivity within the medical research reports and the medical case history, which both operate in the field of production. Here, from the point of view of an ergative interpretation the incidence of the middle voice(M) is predominant at just over half, with the effective active(E) and the effective passive(EP) constituting about 15%-20% respectively; and the middle-passive making up the smallest category.

Table 10.5
Percentage distribution of modes of transitivity across 4 genres of medical discourse.

	Nomothetic	Idiopathic	Interview	Textbook
Effective	19.0	17.5	19.7	29.2
Middle	53.2	54.2	78.2	48.8
Passive	14.7	15.5	1.5	14.7
Medio-passive	13.1	12.8	0.6	7.4

The main shift in transitivity that takes places as a text moves from the primary field to the recontextualizing field is an increase of about a fifth in the incidence of effective active(E) verbs. This, importantly, is linked to the representation of the logical relations of cause-and-effect within pedagogic scientific discourse. This operates both at a semantic level, i.e. the attribution of empirically observable reasons for pathological changes, and at a linguistic level where there about a third of all the verbs in each text (remembering also that well over a third represent material processes) have a clearly defined logical link between an Actor and Goal. This increase in the number of effective verbs is offset by a corresponding decrease in verbs in the medical textbook which are in the middle voice(M), and in particular in the middle passive(MP). Interestingly, the incidence of the effective passive in the textbook texts is exactly the same as that in our sample of medical research papers. However, this is also in keeping with the maintenance of the logical rela-

tions of cause-and-effect within the text.

10.2.2 Field of Reproduction

The oral context of the reproduction of medical provides yet another contrast with the two written modalities of medical discourse. By far and away the dominant mode of transitivity in the medical interview (Table 10.6) is the middle voice, which represents more than three quarters of all forms of transitivity within the medical interview.

Table 10.6
Distribution of modes of transitivity within 4 medical interviews.

	E		M		EP		MP	
	Doc	Pat	Doc	Pat	Doc	Pat	Doc	Pat
Text A	9	14	52	90	1	1	0	0
Text B	14	10	39	42	2	1	1	1
Text C	20	3	47	19	0	0	1	0
Text D	21	2	58	23	2	0	0	0
Total	64.0	29.0	196.0	174.0	5.0	2.0	2.0	1.0
Total%	13.5	6.1	41.4	36.8	1.1	0.4	0.4	0.2
Grand total%		19.6		78.2		1.5		0.6

This bears out Halliday's claim[23] that the pattern of transitivity laid down by the middle voice is becoming very much the dominant mode of transitivity in contemporary English, especially in oral discourse. The other significant

point about the overall distribution of voice in the medical interview as opposed to the written modes is the anticipated hiatus in the use of the passive voice, both in the effective and in the medio-passive mode. The social context of spoken English does not lend the language to transformation into either mode of the passive voice. An analysis of the attribution of the different modes of transitivity to the different participants in the medical encounter indicates that the doctor dominates the distribution of all four types of transitivity, particularly in the most directive category of the effective verb, where on aggregate he utters over twice as many effective verbs as the patient.

10.2.3 Recontextualization of medical discourse: textual analysis

The same two sample texts[24] were also broken down into their 9 clauses and analysed for characteristics of transitivity and voice. It was found that a marked shift towards the effective voice emerged in the process of recontextualization; and that this was complemented by a corresponding shift from the active to the passive voice. Clauses were assigned to the effective(E), effective passive(EP), middle(M) or medio-passive(MP) voice according to the criteria laid out by Halliday[25] (Table 10.7). One of the concrete material clauses and one of the abstract material clauses were categorized as being both effective and active in voice: *40*

out of 82 infected women never practised anal sex and *published studies...have not allowed examination.*

Table 10.7
Comparative frequency of transitivity and voice in two medical texts

	E	EP	M	MP	Tot
Text G	2	1	3	3	9
Text O	7	0	2	0	9

The other effective material clause was in the passive: *HIV is more easily recovered*. This left 6 clauses in the middle voice. All three relational clauses, being attributive, were assigned to this category in the active voice, in accordance with Halliday's criteria. Since Halliday indicates that verbal process are represented by the middle voice, *anal sex has been shown to increase the risk...* and *the role of sexual contacts during menses has been suggested* were categorized as being in the medio-passive; as was the clause of mental process, *it should be noted*.....[26]

In stark contrast with the primary text, the recontextualized text has all its verbs in the active voice, out of which five are effective and only two are middle. All 5 verbs of material process are in the effective active voice. Of the 3 relational clauses, the 2 identifying clauses, *the importance of blood pressure is that...* and *the pressure in a blood vessel is the force* are categorized, in accordance with

Halliday's schema, as effective (active), while only the attributive clause *all blood vessels are distensible* leant itself to the middle voice (active). Finally, the one clause of verbal process, *which means that...* yielded one other clause in the middle voice, albeit in the active.

10.2.4 Recontextualization of Process-Action Relations

The transformation of the linguistic relations of voice and transitivity of the scientifico-medical text as it is relocated in the recontextualizing field manifests a shift in the representation of relations of process and action within the text. This lends the relocated text its characteristics of "concreteness" and "affectedness" which reinforce the veracity of the scientific knowledge conveyed by the text.

The effect of this refocusing of the patterns of voice and transitivity patterns goes beyond this. For it is actually writing into the recontextualized text the logical process that is at the heart of the empirical sciences themselves, that of cause-and-effect, the logical process embedded in the non-middle patterns of transitivity that remain in modern English. First of all, the recontextualized text represents the world as it appears to the scientifico-medical 'gaze', a world which has as its underlying logic an infinite series of causative relations waiting to be uncovered. As the uncovering of these causative relations is both the epistemological foundation and fount of resource allocation for the scientifico-

medical community, it is very much in the interests of this community to maintain and recreate the presence of cause-and-effect relations in the discursive construction of the stories of scientific phenomena that it writes for and recounts to its members, in particular its novitiate members. For the principal purposes of the recontextualization of scientifico-medical texts is a pedagogical one: the reproduction of the knowledge in that epistemological field and the education of new members in the lore of the scientific community.

These relations are represented as being by no means as pervasive and ubiquitous within the texts which have been produced in the primary context of medical discourse. Therefore, since the cause-and-effect relations are neither found unequivocally in the primary texts, and since the rewriting of the relations of transitivity in the process of recontextualization serves to further the self-interest of the scientifico-medical discourse community, the recontextualization of the logical relations of the primary text can be said to be just as much of an *ideological effect* as the recontextualization of its temporal and spatial relations which was noted in the previous chapter.[27]

The medical textbook, therefore, rewrites the logical relations of scientific discourse with a set of symbolic relations inscribed in the grammatical relations of the clause which benefits the epistemological presuppositions and material requirements of the particular interest group(s) who dominate the pedagogic recontextualizing field.

Notes and References

1. Halliday, M.A.K. (1985). An Introduction to Functional Grammar. London: Edward Arnold, p.101.

2. Halliday (1985), p.101.

3. Chapter 5, pp. 154 ff.

4. Halliday (1985), p.103.

5. Halliday also states intriguingly for our thesis, apropos Goal: "another term that has been used for this function is Patient, meaning one that 'suffers' or 'undergoes' the process" (Halliday, 1985, p.103).

6. Text P, p.87.

7. Text P, p.87

8. Text G, p.810.

9. Text G, p.810.

10. Halliday (1985), pp.112-128.

11. Halliday (1985), p.113.

12. Halliday (1985), p.114.

13. Halliday (1985), pp.123-124.

14. See 10.1.1 above.

15. Halliday (1985), pp.108,ff.

16. See Appendix F.

17. Halliday (1985), p.129.

18. Halliday (1985), p.144-5.

19. Chapter 5, pp. 154 ff.

20. Halliday (1985), p.146.

21. Halliday (1985), p.146.

22. Halliday (1985), p.145.

23. Halliday (1985), p.146.

24. See 10.1.4 above.

25. Halliday (1985), p.15

26. 'Note' was taken to represent a mental process of the 'like' rather than the 'please' type, c.f. Halliday (1985), p.150.

27. Chapter 9, p.292 ff.

CHAPTER 11

THE NEGOTIATION OF MEDICAL KNOWLEDGE

We have seen (Chapters 6-8) that the pedagogic device mobilizes the **mode** of medical discourse so that the **textual** resources of the heterodox texts of the medical research article which operate within the **primary context** of the **production** of medical discourse in both their manifestations (nomographic and idiopathic), and the dialogic encounter between the professional and lay discourses of illness which operates in the **secondary context** of the **reproduction** of medical discourse, are superseded by the unitary "doxa" of the medical textbook, the genre of the 'official' discourse of the **tertiary field** of **recontextualization.**

Within the process of the recontextualization of the medical text, a number of transformations take place within the **field**[1] of the text, which accord the recontextualized text certain substantive qualities. First, there is a delocation and relocation of relations of both time and space (Chapter 9) realized by the modulation of the **ideational** resources of tense within the text, which lends the recontextualized text its characteristics of "presentness" (time) and "immediacy" (space). And, secondly, there is a further transformation of the relations of process and action (Chapter 10) realized by a modulation of the **ideational** resources of transitivity and voice within the text, which lends the relocated text its characteristics of "concreteness" and "affectedness".

Finally we will go on to look at the mobilization of Halliday's third category of the **tenor** of medical discourse to examine shifts that take in the **interpersonal** resources of medical discourse as it moves through the three contexts of recontextualization. In the primary context of medical discourse, quite explicit linguistic procedures of negotiation take place within the discourse community of medical researchers both to ameliorate the competition for cultural capital (Chapter 7), and in order to create a certain consensus as to the constituency of medical knowledge; as well as in the secondary context between the professional and lay agents (Chapter 6).

These find formal expression in both the nomographic and idiopathic texts and within the dialogic text of the medical interview. As with the ideational resources of medical discourse, the interpersonal resources also modulate to produce an ideological effect within the recontextualizing field. So far this has been examined at the level of the rhetorical organization of the text (Chapters 6-8). This chapter will proceed to compare some of the ways in which the negotiative relations of the two types of text featured in the primary and secondary contexts of medical discourse are realized by the mobilization of the interpersonal metafunction of the medical text at a linguistic rather than a rhetorical level; and how this is modulated as the primary texts become recontextualized texts in order to yield two more substantive qualities that characterize the text of 'common sense' knowledge.

The elements of the interpersonal metafunction that can be identified most clearly are those which make up the "speaker's comment" in the text.[2] Halliday describes speaker's comment as "one among the syntactic devices which together make up the interpersonal or social role component in language."[3] In the context of the medical research paper, it represents the intervention of the medical research writer at varying degrees of explicitness in the negotiated construction of new knowledge within a field of research. This authorial intervention is conventionally regarded as bracketing the more objective component of the research article, and gives rise to what Adams Smith describes as "the abrupt, clearcut breaks between the objective detached reporting found in the Methods/Results section and the more subjective author involvement in the discussion or comment section."[4] Thus, in particular, the presence or absence of speaker's comment was one of the defining features of the different hybrid styles that make the medical research paper such a heterodox text.

Speaker's comment has been described as being related to both verbal and nonverbal modality, as well as being expressed by a number of different types of adverb, e.g. *frankly, generally, wisely, fortunately, officially, reasonably, personally, incidentally, doubtfully,* etc.[5] However, the medical researcher can also select from a range of other syntactic devices to imply a degree of approbation or disapprobation with regard to the thesis. First, he or she can select from a spectrum of reporting verbs (e.g. *suggest* instead of *shown*),

relating to the intensity of support given to the thesis, as has been illustrated in the analysis above, pace Swales.[6] Reporting nouns (*e.g. speculation* instead of *evidence*) can also be chosen for the same purpose as, finally, can evaluative adjectives (*e.g. major* instead of *slight*).[7] Following Adams Smith's 1984 paper,[8] we will now go on to describe these indicators of speaker's comment at a greater degree of specificity.

While keeping an eye on whether the overall functional purpose of each paragraph describes a process or offers an evaluation or recommendation, our focus here was more to identify and note the discernible interpersonal 'microacts' within each discrete section of the medical research article.[9] The words and phrases which express the research writer's attitude were categorized into three main classes: verbal modality, i.e. the modal auxiliaries; nonverbal modality, comprising equivalent nouns, verbs and adjectives;[10] and words and phrases to which Adams-Smith gives the label "attitudinal markers".

> These could not be codified as modals, either verbal or nonverbal, but they clearly functioned to indicate the writer's attitude towards the thesis.[11]

The textbook texts were also analysed for the incidence of speaker's comment, which has been described in detail above as an aspect of the interpersonal metafunction of Halliday's

functional grammar.[12] The number of occurrences of exponents of speaker's comment in the four texts were analysed in order to test the hypothesis that as a topic moves from the primary context of the production of discourse to the tertiary context of the recontextualization of discourse, there will be a corresponding decline in the incidence of authorial intrusion into the text, as the topic becomes 'sedimented' into a certain 'common sense' tradition of medical knowledge.

As topics were moved out of the restricted domain of one team of researchers into the more widely accepted public domain of medical pedagogy, it was expected that the linguistic intrusion of the authors into the text would become eliminated, as a sign which symbolizes the accepted truth value of the text.

11.1 Distribution

11.1.1 Medical Research Paper (nomographic text)

On the face of it (Table 11.1), our 1992 selection of papers from the British Medical Journal (B.M.J.)[13] seem to be very different animals from the ones Adams Smith encountered ten years previously. The difference in overall length is immense. While Adams Smith's six papers ranged from 50 to 78 lines overall, with an average length of 65 lines, the shortest of our four texts was 380 lines and the longest 537, with a mean length of 471 lines. The average length of our papers

is eight times as long as this previous study of B.M.J. texts. This may represent a generalizable extension of the genre reflecting the greater amount of data that is currently able to be analysed with the recent developments in computer technology. This increase in the length of the epidemiological research article may also be another contributory factor in the eclipse of the case history report. It is possible that there simply is no longer enough space in the medical journals for the shorter genre of report when faced with the burgeoning mass of the epidemiological report.

Table 11.1
Incidence and ratio per line of speaker's comment by section of medical research article

	Speaker's Comment	Lines	Ratio
Abstract	26	153	1: 5.88
Intro	57	113	1: 1.98
Methods	23	366	1:15.91
Results	129	598	1: 4.64
Discussion	259	514	1: 1.98
Total	494	1744	1: 3.53

The overall purpose of the different parts of the research article has been described earlier in the thesis.[14] In our four papers, the distribution of speaker's comment to the different sections of the research article was as follows:

a. Abstract, in our papers ranging from 34 to 50 lines in length. Over the past ten years this has changed to a point form format in the B.M.J., covering objectives, design, setting, subjects, main outcome measures, results and conclusions. The new format also tends to be slightly greater in length. Here, the ratio of speaker's comment to the number of lines was 1:5.59, slightly lower than Adams Smith. This was possibly due to the abstracts being longer.

b. Introduction, 25 to 47 lines long. Here, the incidence of speaker's comment is quite high, standing at almost 1:2 in our sample. This ratio is somewhat higher than Adams Smith's 1984 findings. The high proportion might be expected from our observations in Chapter 7, which described in detail the four different moves that the medical research writer has to make in order to negotiate his or her way into the main body of the research report. These involve a high degree of authorial intrusion into the text.

c. Methods. The analysis of this section in terms of the interpersonal functions of language is almost universally conflated with that of the Results section; Adams Smith[15] is no exception. Indeed, in some research articles the two are actually written up together. The general viewpoint is that both the Methods and the Results sections are written in a highly impersonal style in contrast to the Introduction and the Discussion sections.

However, I would argue that even where the two are written together, the function of the two sections are still essentially different, and this is reflected in an asymmetry of speaker's comment. This asymmetry is reflected fairly strongly in our four papers, and is by no means unique to them. Certainly the Methods section is the least personal and the most lacking in speaker's comment. This is validated by the extremely low ratio of speaker's comment in our papers of 1:15.91 in an overall total number of lines of 366. The same cannot be said of the Results sections.

d. In our Results sections, out of a total of 598 lines, the ratio of speaker's comment was 1:4.6. While not as high as the Introduction or the Discussion sections, this is still very much higher than the Methods section, and actually marginally higher than the overall speaker's comment to line ratio of 1:4.6. Generally, our Results sections were a little exceptional in as much as they carried out in some cases quite an extensive evaluation of the data as it was reported. This serves to highlight what is the general function of the text in the Results section, i.e. to comment upon rather than simply account for the data in the tables and graphs.

I suggest that the Results sections of medical research papers should be seen as much more interpretative and infused with speaker's comment than has hitherto been the

case in the literature. The high incidence of speaker's comment that has been found in this small sample supports this claim. Since the Results section is generally regarded also as the objective 'core' of an medical research paper, this must also raise questions about the status of that putative objectivity.

e. While the Discussion section of the paper was the longest section of Adams Smith's sample,[16] it was on average slightly shorter than our Results sections, coming out at a total of 514 lines. Here we find a very high ratio of speaker's comment, even higher than that of the Introductory section, i.e. 1:1.98. This is again well above Adams Smith's findings of 1:2.2. Here, as we have seen in Chapter 7, in a mirror image of the Introduction, the author rationalizes the Results and attempts to place them in the context of the research that has been carried out before. It is here that the principal point of negotiation within the discourse community of medical researchers takes place.

Thus, there is some disparity with previous research in the overall length of the papers, and in some of our findings regarding the different sections, especially the Results. Yet, nevertheless, the figure for the overall ratio of speaker's comment to the number of lines is not entirely dissimilar to that of Adams Smith,[17] i.e. 1: 3.5 as compared to her 1: 3.7.

11.1.2 Case History (idiopathic text)

Adams Smith looked at a sample of six medical case histories from the B.M.J. in her 1984 article. Although she described these texts as having "...a clearly defined form.....all began with a short introduction of from five to eight lines which actually functioned as an abstract",[18] our sample displayed considerably less uniformity than the first category of nomographic texts above.

Within our sample of four clinical case notes,[19] the longest (Text I) consisted of 289 lines and the shortest (Text K) was as little as 87 lines long, with an average length of 170 lines. The longest paper was over three times as long as the shortest. This is partly due to the fact that one paper advertised itself as a form of review paper, which one would not assume was an anticipated role of this particular genre. Another area of anomaly lay in the opening sections of the four texts. Only one paper, the shortest (Text K), had as in Adams Smith's sample an opening Summary which also functioned as an Introduction; while the three others had both a Summary section and an Introduction section. This, again, was a contributing factor to the variation in the lengths of the paper; and also made it harder to generalize about the function of the Introduction and Summary sections.

Part of this discrepancy may lie in the difference in conventions between the B.M.J. and the B.J.C.P.; and here we can see how within the analysis of genre, it may be possible

to identify subsidiary forms according to subject specialisms or even individual journal formats. It might also be observed that in a bid for survival, the genre of the clinical case study appeared to be actually attempting to evolve into something more resembling the research article proper. Yet it seems unlikely that this attempt at textual evolution will enable this species of text to survive the current trends in the recontextualization and selection of medical texts in the publishing process.

Table 11.2
Incidence and ratio per line of speaker's comment by section of case history report

Speaker's Comment	Lines	Ratio
Summary	16	43	1: 2.7
Intro	47	120	1: 2.6
Case	11	224	1:20.0
Discussion	85	337	1: 4.0
Total	159	724	1: 4.6

a. Our three case history summaries ranged from 8 to 13 lines in length (Table 11.2), and can be seen to be somewhat longer than those in Adams Smith's sample.[20] With the increase in length came also a dramatic increase in the proportion of authorial intrusion in the text with an overall line to speaker's comment ratio of 1:2.7. However, there was still a wide discrepancy of texture in speaker's comment within the Summary sections of our sample. The most factual Summary (Text I) had a speaker's comment ratio of 1:13; while the most discussive (Text J) actually had 6 instances of speaker's comment in 8 lines (1:1.33).

b. Two out of our three Introductions were 27 (Text J) and 28 (Text L) lines long respectively; while Text I had an Introduction of 65 lines. This partially accounts for the exceptional length of Text I, and along with the absence of an Introduction in Text K would indicate that this section is the least stable section of the genre. The ratio of speaker's comment in the Introduction sections was 1: 2.6, which is high, though not as high as the Introduction and Discussion sections of the epidemiological research article. This, again, was a very much higher ratio than was found in Adams Smith's sample.[21]

c. Case Report. As the historical core of this genre, the Case Report proper displayed less variation across the different texts. The number of lines varied from 41 (Text J) to 74

(Text L). Within this more factually based section, the incidence of speaker's comment dropped significantly to 1:20, although this again was a lot higher than Adams Smith's findings. This section was still found to be notably less discussive even than the Methods section, and certainly than the Results section, of the research article.

d. There was more variation in form again between the Discussion sections in the four case history reports. The length varied from 46 lines in Text I to 167 lines in Text K. Thus, the Discussion section of the idiopathic text actually proved to be the longest section in our sample. Here, there was a return to a higher ratio of speaker's comment per line of 1:4. For once, our findings are not as high as Adams Smith's, and it should be noted that there were about half as many instances of speaker's comment here, than in the Discussion sections of the epidemiological research article (nomographic text).

The overall ratio of speaker's comment to the number of lines within the medical case history, then, stands at 1:4.6, which in fact - despite our discrepancies within the separate sections - is almost exactly the same as Adams Smith's sample (1:4.8). Both analyses indicate that the medical research writer intrudes less into the text of the case history report (idiopathic text) than into the text of the epidemiological research article (nomographic text).

There are two reasons why the nomographic text might display a higher incidence of speaker's comment than the idiopathic text across the different sections. The first is that the principal function of the nomographic text is to establish generalizable rules of epidemiological behaviour for the populace - the medical norm; whereas the principal purpose of the idiopathic text is to establish an identity for the abnormal or deviant subject that sets him or her apart from the 'normal' population. The process of the context of the production of the nomographic text will of necessity involve more strategies of linguistic negotiation than that of the idiopathic text. The nomographic text is a text which is attempting to construct a consensus among the discourse community of medical researchers as to what constitutes generalizable forms of medical knowledge.

The idiopathic text also appears to be less stable a generic form than the nomographic text. This may have something to do with the very forces that are placing the nomographic text in its position of dominance in the discursive production of medical knowledge. The medical case history appears to be trying to adapt in order to compete and survive alongside the nomographic text as the idiopathic text becomes an endangered species of genre. Hence, the problematic relationship between the Summary and Introduction, the occasional intrusion of the fully fledged review and the gradual expansion of Discussion sections can be interpreted as attempts by case history writers to get their papers published

in an ethos of selection and recontextualization which is becoming more and more favorable to the exclusive publishing of nomographic texts. These seem to be attempts by case history writers to make their clinical case reports more like research articles. Judging from the changes in the editorial policy of the B.M.J. and B.J.C.P. over the past decade, these attempts appear doomed to failure.

11.1.3 Textbook

While the main focus of interest in the medical research papers lay in the difference between the incidence of speaker's comment in the different sections of the text - Introduction, Methods and Results/Case Report, and Discussion - this was not our concern in the textbooks, as they were written as homogeneous texts. That is to say, the discursive structure of the text lends itself to anonymity, rather than to revealing the process whereby its contents were arrived at.

This is, however, in itself significant. One of the purposes of the discursive organization of the medical research article is supposedly[22] to enable the reader to verify the origins of the knowledge which is presented. The elision of the mention of research procedures and deductive argumentation in the medical textbook reinforces the assumption that what is being produced has already passed into the realms of what is held as medical truth. In this somewhat circular way, the discursive structure of the textbook reinforces the 'common

sense' aspect with which its text is infused in the process of the recontextualization of the original research. This is in contrast with the research article itself, which as the operational text in the primary context of the production of medical knowledge, displays a certain arbitrariness in the equivocal nature of its conclusions.

At first sight, our overall findings did not support the initial hypothesis that the incidence of speaker's comment was actually lower in a recontextualized text. The overall ratio of the incidence of speaker's comment to the number of lines in our medical textbooks emerged as almost 1:5 (Table 11.3). This is only very slightly lower than the medical case history reports which were produced in the primary context (Table 11.2); and is still highly comparable to the medical research articles (Table 11.1).

Table 11.3
Incidence and ratio per line of speaker's comment by textbook type

	Speaker's Comment	Lines	Ratio
Pharmacology	173	530	1: 3.0
Biochemistry	93	406	1: 4.37
Physiology	71	556	1: 7.83
Anatomy	42	398	1: 9.48
Total	379	1890	1: 4.98

Closer scrutiny revealed an interesting variation between the incidence of speaker's comment in the different types of textbook. Text M (Pharmacology)[23] and Text N (Biochemistry)[24] both appeared problematic, with a high incidence of speaker's comment. The pharmacology text had a line to speaker's comment ratio of 1:3 which was even higher than that of the medical research article overall; while the biochemistry text had a line to speaker's comment ratio of 1:4.37 which was slightly higher than that of the medical case history report (Table 11.2). The maintenance of a high level of speaker's comment probably reflects two characteristics of these texts. First, they are texts of relatively new sub-disciplines within the medical field. Pharmacology and biochemistry only became discrete disciplines relatively recently within the history of medical pedagogy; and the degree of authorial intrusion into their texts reflects their status as still emerging disciplines. Secondly, and as a consequence of this, the study of these two subjects takes place later in the medical curriculum, thus reflecting the general trend within the structure of the contemporary western system of pedagogy, where the initiate starts by being taught what is 'certain' and progresses to what is 'uncertain'.[25]

However, Text O (Physiology)[26] and Text P (Anatomy)[27] displayed a relatively low incidence of speaker's comment to each line (Table 11.1). The physiology text stood at 1: 7.83, and the anatomy text stood at 1: 9.48, which was only capped for lack of authorial intrusion by the Methods and Case Report

sections produced within the primary context. The reasons for the paucity of authorial intrusion into these texts are the inverse of those stated above. The physiology and anatomy texts represent well-established sub-disciplines within the medical field of some centuries' historical standing, especially in the case of anatomy. There is little scope for equivocation over the traditionally unquestioned facts stated within these texts. The study of these two subjects takes place earlier in the medical curriculum in accordance with the demands of the contemporary western system of pedagogy. The texts are less problematic, simpler and in some cases even simplified.

Thus, with reference to the 'recontextualizing grid' outlined in Chapter 9,[28] it is possible to describe the degree of recontextualization of our two classes of texts. The first class of texts, Text M (Pharmacology) and Text N (Biochemistry) exhibit as textbook texts a high degree of discursive recontextualization (DR+) but a low degree of verbal recontextualization (VR-); however, our second class of texts, Text O (Physiology) and Text P (Anatomy) exhibit both a high degree of discursive recontextualization (DR+) and a high degree of verbal recontextualization (VR+). To generalize from our sample, while all forms of textbook display a uniformly radical degree of recontextualization at the level of discursive organization, texts in the field of pharmacology and biochemistry exhibit a lower degree of verbal recontextualization than do texts in the field of physiology and anatomy.

11.1.4 Medical Interview

The first point of note in our sample of medical interviews was the remarkable regularity in length of the four texts. It is ironic that the ostensibly more 'natural' modality of conversation within medical discourse should yield four texts of standard length, while the genre of the medical research paper, despite the rigorous protocol and procedures which are laid down by the editorial boards, yielded four texts which were highly disparate in length. Texts A and B, the first outpatient interviews, have more or less identical numbers of clauses (Table 11.4); while, as one might expect, the two follow-up interviews are slightly shorter, although they do not display quite such a noticeable equivalence in length. It should be noted that Text D was a 'dysfunctional' interview with a coda at the close in which the parent challenges the authority of the doctor. This would account for its slightly extended length compared with Text C.

No clear trends were discernible with regard to the ratio of speaker's comment within the different types of texts. The distribution ranged from 1: 2.38 to 1:3.5, with a mean distribution of 1:2.68. Compared with the other three genres, this does represent, predictably, the type of text with the highest distribution of speaker's comment. Although direct comparison is not relevant here since the ratios have been calculated per clause and not per line, it is nevertheless clear that this is one of the most modalized forms of text,

comparable only with the Introduction sections of the research paper.

Table 11.4
Incidence and ratio per clause of speaker's comment: numbers of occurrences in medical interviews

	Speaker's Comment	Clauses	Ratio
Text A	55	131	1:2.38
Text B	40	134	1:3.35
Text C	50	106	1:2.12
Text D	41	114	1:2.78
Total	186	485	

11.2 Expression

It is now possible to go on to look in greater detail at the different ways in which speaker's comment can be expressed in medical discourse as a subcategory of Halliday's interpersonal metafunction. This section will reveal the actual devices available to the writer or to the speaker to take up a position within the different genres of medical discourse. As in the previous section, while there is some disagreement with previous research on the detail of this description, the broad contours of our research remain remarkably similar in those areas which have previously been investigated. It has already been noted that the means of expressing speaker's comment in

the medical discourse can be broken down into three broad areas: verbal modality (VM), nonverbal modality and attitudinal markers (AM). These figures are analysed by paper and by function in four different forms of medical text (Tables 11.5-11.8).

Table 11.5
Forms and purposes of speaker's comment: numbers of occurrences in medical research articles

		Prob	Rec	Emp	Eval	Tot Occ	Tot Lin
E	VM	3	1	0	0	4	
	NVM	8	0	0	0	8	
	AM	43	0	6	56	105	
Total		54	1	6	56	117	328
F	VM	8	8	0	0	16	
	NVM	4	0	0	0	4	
	AM	39	1	14	50	104	
Total		51	9	14	50	124	494
G	VM	16	2	1	0	19	
	NVM	5	0	0	0	5	
	AM	56	0	4	30	90	
Total		77	2	5	30	114	381
H	VM	21	6	0	0	27	
	NVM	6	0	0	0	6	
	AM	45	2	10	49	106	
Total		72	8	10	49	139	541
Overall Total		254	20	35	186	494	1744

Table 11.6
Forms and purposes of speaker's comment:
numbers of occurrences in clinical case notes

		Prob	Rec	Emp	Eval	Tot Occ	Tot Lin
I	VM	7	4	0	0	11	
	NVM	4	1	0	0	5	
	AM	22	0	2	31	55	
Total		33	5	2	31	71	302
J	VM	12	4	0	0	16	
	NVM	0	0	0	0	0	
	AM	13	0	2	9	24	
Total		25	4	2	9	40	160
K	VM	7	1	0	0	8	
	NVM	1	0	0	0	1	
	AM	7	0	3	4	14	
Total		15	1	3	4	23	98
L	VM	3	1	0	0	4	
	NVM	1	0	0	0	1	
	AM	10	0	3	7	20	
Total		14	1	3	7	25	164
Overall Total		87	11	10	51	159	724

Table 11.7
Forms and purposes of speaker's comment: numbers of occurrences in medical textbooks

		Prob	Rec	Emp	Eval	Tot	Lin
M	VM	24	1	0	0	25	
	NVM	12	0	0	1	13	
	AM	44	0	19	74	135	
Total		80	1	19	75	175	530
N	VM	6	1	1	0	8	
	NVM	2	0	0	0	2	
	AM	33	0	22	28	83	
Total		41	1	23	28	93	406
O	VM	4	1	1	0	6	
	NVM	1	0	0	0	1	
	AM	12	1	26	25	64	
Total		17	2	27	25	71	556
P	VM	1	0	1	0	2	
	NVM	0	0	0	0	0	
	AM	5	1	21	12	39	
Total		6	1	22	12	41	398
Overall Total		144	5	90	140	379	1890

Table 11.8
Forms and purposes of speaker's comment: numbers of occurrences in medical interviews

		Prob	Rec	Emp	Eval	Tot Occ	Tot Lin
A	VM	1	12	0	0	13	
	NVM	1	0	0	0	1	
	AM	12	0	3	26	41	
	Total	14	12	3	26	55	131
B	VM	2	7	0	0	9	
	NVM	0	0	0	0	0	
	AM	9	0	2	20	31	
	Total	11	7	2	20	40	134
C	VM	2	20	0	1	23	
	NVM	1	0	0	0	1	
	AM	4	1	5	17	27	
	Total	7	21	5	18	51	106
D	VM	9	6	0	1	16	
	NVM	1	0	0	0	1	
	AM	5	0	2	15	23	
	Total	15	6	2	16	39	114
Overall Total		47	46	12	80	185	485

11.2.1 Verbal modality

The proportion of modal auxiliary verbs in our samples of medical texts differ significantly, standing at 32.8% in the medical interviews, 24.5% in the medical case histories, 13.37% in the medical research reports and 10.85% in the medical textbooks.

The reason for the discrepancy between the distribution in the medical case histories and in the medical research reports arises from the fact that our samples of research papers were very much longer than those of the case histories. Furthermore, the main difference in length occurs in the non-discussive Methods and Results sections; whereas the more explicit expression of subjectivity enabled by the modal auxiliaries is most appropriate to the Introduction and Discussion sections. Where papers such as our medical research papers have a substantially longer body, the relative importance of the role played by the modal auxiliaries to the medical research article as a whole will diminish in turn.

In this respect our sample differs absolutely from Adams Smith's whose research reports yielded as large a proportion as 54% of verbal modal auxiliaries, which was moreover larger than the proportion in the case histories, 42%.[29] There is a second reason for this discrepancy, which is allied to the greater length of our research papers. This is related to the eclipse of the functional category of 'ability' in our analysis, due to a careful adherence to Halliday's distinc-

tion between modality and modulation.[30] While Adams Smith cites Halliday for her initial definition of modality,[31] the relatively high incidence of verbal modality in her results would seem to suggest that she might have conflated 'modality' and 'modulation' in her analysis. Without being able to do justice here to Halliday's detailed exposition,[32] the gist of his thesis is that while the expression of possibility and probability are valid instances of speaker's comment (and hence the interpersonal element of language), the expression of ability is not. For the former, he retains the nomenclature 'modality', the latter he terms 'modulation'. Modulation is classified as the ideational content of a passage, since it is not speculative in nature, but is a statement of fact. While conceding some overlap between the two categories, X's ability to do Y essentially does not have anything to do with the expressed opinion of the speaker or writer, it is an 'objective' property of the entity X. Thus, a number of exponents, which were mainly occurrences of the verbal auxiliary *can* originally classified as instances of verbal modality, came to be deleted from our list.

Just as there was some disparity in the distribution of verbal modality between the two different modes of text which operated within the primary context of medical discourse, so there was also some disparity between the two different types of medical textbook which operated at different levels of recontextualization. Verbal modality constituted 12.41% of the expressions of speaker's comment in the texts (M and N) with a

low degree of verbal recontextualization (VR-); but 7.14% in the texts (O and P) with a high degree of verbal recontextualization (VR+).

Although it was be expected that the highest distribution of speaker's comment would appear within the conversational mode of the medical interview, it was anticipated less that the incidence of verbal modality would be lower in the first outpatient interviews (at 23.16%) than in the follow-up interviews (at 42.86%).

Again, the high incidence of verbal modality in the follow-up interviews may be partially attributed to the degree of argumentation in Text D. This also supports our counter-intuitive thesis that far from the patient being uncontentiously educated into the role of a sick person, conflict and contradiction can emerge out of subsequent medical encounters. However, slightly more predictably, the doctor employs all forms of speaker's comment much more frequently than the patient. 63% of all forms of speaker's comment were uttered by the doctor; and only 37% were uttered by the patient(s) (including the only four instances of speaker's comment by the child). Across our four samples of medical interview, the doctor's employment of speaker's comment compares with the patient(s)' use by a ratio of 1:1.7 overall.

There is more general agreement over the distribution of specific exponents of verbal modality across the different genres of medical discourse. Like Adams Smith, we find that *may* and *should* occur most frequently in both types of medical

research paper, and our figures correspond reasonably closely. *May* makes up 36% of all verbal modals in our research papers and 58.9% in the case histories; while *should* comprises 16.7% of all verbal modals in our research papers and 23% of all verbal modals in our clinical case notes. We are also in broad agreement with previous research in finding *may* and *should* to be proportionately higher in the clinical case studies than in the epidemiological research reports. *May* also proved again to be the most widely used exponent of verbal modality in the medical textbook, actually comprising exactly half of all the modal auxiliary verbs. However, *should* is replaced by *would* as the second most common. This reflects the substitution of the function of recommendation in the research paper by tentative prediction in the textbook.

By contrast, *may* and *should* do not occur not at all in the medical interviews. By far and away the most common form of verbal modality is *will*. Here, *will* is used in order to make a recommendation which also constitutes a form of 'offer' on the part of the doctor to the patient: e.g. *then we'll increase it to 5 tablets* (Text C). Much less often used for the same purpose is also *let's*: e.g. *so, let's try that for a couple of weeks, shall we?* (Text D); and the modal use of *can*: *and can we cut out one dose of phenytoin?* (Text C). The forms of modality used within the medical interview are in keeping with the conversion, considered in Chapter 6,[33] of the dialogic encounter of the medical interview from an exchange of question-and-answer to one of request-and-offer.

11.2.2 Nonverbal modality

The incidence of nonverbal modality (NVM) turned out not to be a significant category in our sample of texts, comprising about 4.5% of the exponents of speaker's comment in the medical research paper, 4.23% in the medical textbook and hardly occurring at all in the medical interviews. Where they did occur, the most common exponents of nonverbal modality across the genres of medical discourse, were the adjectives *likely*, *unlikely* and *possible*, as well as the adverb *probably*.

11.2.3 Attitudinal Markers

The use of attitudinal markers (AM) is the third, though less acknowledged, means of expressing the subjective element in research report writing. We registered a huge rating for this in our samples, reckoning it to constitute 81.98% of all expressions of speaker's comment in our research papers, 71.1% in our case histories, a high 84.92% in the medical textbook, but a much lower 65.6% in the medical interviews. This is the other side of the deficit in verbal modality. It was found that there was a slightly counter-intuitive distribution of attitudinal markers across the two different types of textbook. There was actually a lower incidence (81.95%) of attitudinal markers in the texts (M and N) with a low degree of verbal recontextualization (VR-) than in the texts (O and P) with a high degree of verbal recontextualization (VR+), which

had 91.96%.

The different types of nonverbal modality which were found are as follows:

a. Adverbs and adverbial phrases. Out of these, the decision to include evaluative adverbs such as *significantly* as an aspect of speaker's comment hugely boosted the tally for attitudinal markers in the research papers. *Significantly* alone accounted for 25% of this first category in the medical research papers and occurred, along with its counterpart *slightly*, with great frequency in the Results section; although these exponents did not feature at all in the medical textbook or the medical interview. In contrast again with the research papers, there was a large number of adverbs such as *always*, *normally* and *usually* in the medical textbook, which were categorized as expressing probability - but in the textbooks the tenor of those adverbs that did express probability lent far more towards the expression of certainty than uncertainty. Other common adverbs used for emphasis in both the medical research papers and the textbooks were *mainly* and *particularly*, although concessive adverbs such as *apparently* and *conceivably* were found less regularly. In the medical interview, adverbs of intensity[34] such as *only* and *just* were used most frequently.

b. The choice of reporting verb or verbal phrase, e.g. *found*, *indicated*, *reported*, *seemed*, *showed* and *suggested*, was displayed in all forms of written text, but was not, of course, found in the conversational mode.

c. The qualification of the reporting verb was found in all modes of text, e.g. *it is doubtful whether..., it is important..., it was disappointing..., it is interesting to...., what's so important is....*

d. Although the choice of the reporting noun, mostly *evidence*, was used as a marker in the research papers, one significant feature of the textbook genre was the general absence of the reporting noun since, in the process of recontextualization, it has no longer become appropriate to cite the *evidence* of one's research. Only two instances were classified under this category in the textbook: *index*, and *phenomenon*. No instances were found in the medical interview.

e. The qualification or modification of the reporting noun, e.g. *few data*, *little research evidence*, *most recent available result*, *other important components*. The inclusion of the lexemes *significant(ly)*, *similar*, *slightly(ly)*, *strong*, and *sufficient*, again when modifying a noun either on their own or as part of an adjectival phrase, here made a huge difference to our tally in the research papers, although,

except for *similar*, they were not widely used in the textbook genre. Taken mainly from the Results sections, and open to some disputed interpretation, this class together constituted around 13% of all speaker's comment in our four epidemiological research articles. The adverbial forms were generally used to modify an adjective, e.g. *significantly higher*, *slightly lower*, etc. However, what was found in the textbook were, as with the adverbs and adverbial phrases, much less equivocal markers of the writer's attitude: *effective*, *important*, *more...*, *most...*, and *much...* These attitudinal markers, again, tended to infuse the textbook with a far greater degree of certainty than was found in the research papers in the primary context. By contrast, the attitudinal markers in the interview were mainly relatively hesitant intensifiers, such as: *any, a bit, quite, roughly*.

f. The use of metaphor, antithesis and analogy was considered a bit more cliched in our medical texts than in Adams Smith's. The best we could come up with was: *mainstay..., steep slope...* and *adds weight to the argument...., landmark, in the long run, will have gone a long way towards*.... Yet, we should not ignore two essential characteristics of scientific language. First, the absence of figurative language itself is a crucial feature of the language of scientific rationality; and secondly where a metaphor does occur, the use of cliche itself gives a

'groundedness' to the language. There certainly were no examples of high flown metaphor in our samples of scientific texts. This is oddly in contrast with the lay language of 'common sense' described by Geertz,[35] whose 'matter-of-factness' is asserted in highly figurative terms. Different genres assert claims to the 'truth' in very different stylistic ways.

g. The use of the first person in preference to the impersonal passive, e.g. *we are following up, we cannot exclude, we had expected, we have identified, we misclassified, we report*, etc. Despite the expectation that the medical textbook was an exclusively 'impersonal' text, there were still several instances of the use of the first person in preference to the impersonal passive. However, the verbs that were used with the exponent of the first person (always the authoritative 'royal' plural: *we*) were different in the textbook, and thus performed a different function. Instead of drawing attention to, or qualifying, the findings of the text, the first person was used to indicate the discourse structure of the text, e.g. *we shall describe later..., we shall discuss....* Furthermore, although we are only looking at small number of instances, this function of the first person was found more in the texts (O and P) with high degree of verbal recontextualization (VR+) than in those (M and N) with a low degree of recontextualization (VR-). Thus it can be inferred that the

more recontextualized a text becomes, the more explicitly didactic it becomes in the way in which the author addresses the reader.

h. The selection of discourse structure. Here the attitude of the author was expressed in the research paper by sequences such as: *partly because of...partly because of...*, *partly...but also...*, *presumably because of...*, *so novel that*..... Here the writer payed a more didactic role in the textbooks: e.g. *as every student already knows...*, *let us digress to consider*... (which also includes the use of the first person), *one will note...*, *recall that...*, and so on.

While the textbook texts used, if anything, more attitudinal markers than the medical research papers, and the same exponents were found in many cases, the function of these exponents had actually shifted. There was a shift from the inference of uncertainty towards the inference of certainty in adverbs and adverbial phrases, as well as in the qualification or modification of the reporting noun. The use of reporting verbs and qualification of the reporting verb was largely the same, although there was a noticeable absence of reporting nouns. Stylistic features such as metaphor and analogy also tended to be kept to a minimum in both genres and, if used, were used in a very cliched way. The use of the first person and instances of authorial expression through the structure of the discourse shifted from an argumentative to a didactic

structure.

By comparing the use of attitudinal markers in medical research papers and medical textbooks, it emerged that as a text becomes recontextualized, it tends to shift stylistically from being an argumentative text to being a didactic text, and this is reflected in its linguistic functions.

11.3 Purpose

The third aspect of the use of speaker's comment that is addressed is why the research writer involves himself or herself in the paper (Table 11.9). Here again, we attempt to validate the four most significant of Adams Smith's functional categories: probability, evaluation, emphasis and recommendation.[36]

Table 11.9
Purposes of speaker's comment by percentage

	Res Art	Case Hist	Text Book	Interview
Probability	51.4	54.7	37.75	25.81
Evaluation	37.4	32.1	36.92	43.0
Emphasis	7.2	6.3	24.01	6.45
Recommendation	4.01	6.9	1.32	24.75

11.3.1 Probability or Possibility

The major functional category in our study is the author's "assessment of probability or possibility, as related to the truth or definiteness of the thesis",[37] although this is only prominent in the medical research articles and case histories (Table 11.9), rather than in the textbook and in the medical interviews.

This is because a shift from the expression of probability to that of evaluation occurs in the process of the recontextualization of a text from the primary field. Through the process of verbal recontextualization, the original authors' discussion and argumentation of their case becomes translated into less equivocal, straightforward evaluative statements. This drop in the frequency of expression of probability as a mode of argumentation in the medical textbook indicates one verbal means whereby a text becomes re-expressed as a recontextualized text.

The expression of probability appears as even less significant a function in the medical interview. One reason for this is that the ulterior purpose of the medical interview, is oriented to an exchange over the provision of goods and services rather than the negotiation of the truth claims of a particular set of statements; and therefore argumentation over the factuality of the case is a less prominent focus of the text. Furthermore, although there might be uncertainty and equivocation regarding the interpretation of the case, this is

not on the explicit agenda of the medical interview. Any ambiguity regarding the terms of diagnosis is internalized by the doctor himself or herself, and is rarely discussed with the patient.

11.3.2 Evaluation

Our sample yields a correspondingly far higher tally in the medical research articles and case histories for the function of evaluation than previous research, which more or less corresponds to that in the textbooks.

This is because our research papers displayed highly evaluative Results sections, which may yet be found to be the current norm amongst this type of article in the medical sciences. Also, our net was spread more widely than Adams Smith's - she does concede that "a fair degree of pragmatism is inevitable in the determination of this third category".[38] The high incidence of the category of adjectives and related adverbs mentioned above, which included *significant* and *slightly*, is enough to inflate our count for this function considerably.

The textbooks in our sample yield about the same frequency of exponents of evaluative comment as they do in the research papers (Table 11.9). We have already seen that adverbs and adverbial phrases in particular, which are often used to express evaluation in the text, have tended to move from the expression of uncertainty to the expression of cer-

tainty. While the interpersonal function of evaluation remains the same, the meaning has nevertheless shifted, changing the function of the recontextualized verbal discourse as a whole from argumentation towards didacticism.

By contrast, the evaluative function was by far and away the most prominent function in the medical interview texts; here again there is a shift in the tenor of the evaluative function. Exponents assigned to this category tended to be mainly concessive adjectives of "intensity"[39] such as *any*, *just*, and *only*, which are clearly quite different in tone than the principal exponents of *significant* and *slightly* found in the other three genres. Here evaluation is incorporated into the verbal strategy of persuasion rather than direct argumentation or didacticism.

11.3.3 Emphasis

The way in which the medical textbook moves most powerfully towards a didactic style is through the huge increase in the use of emphasis. In our sample, the incidence of emphasis was found to have increased threefold from the epidemiological research paper, and fourfold from the case history report, to almost a quarter of all instances of speaker's comment.

By contrast, emphasis was only the third most frequent purpose of speaker's comment overall in both modalities of medical research paper. Here, emphasis is used to stress topics that appear important to the writer in establishing the

truth value of the thesis. Common exponents were adverbs such as *especially*, *even* and *particularly*. Our figure here is a little higher than Adams Smith's findings.

The proportion was broadly similar to that of the medical interview, where it was the least represented speech function. The lack of explicit forms of emphasis in the conversational mode may be due to possibility of a wider range of communicative resources for emphasis through nonverbal language in the medical interview. It can be assumed that various emphatic gestures were also made in the doctor-patient encounter through intonation and kinesics, that were beyond the scope of this research.

11.3.4 Recommendation

The only genre of medical text where recommendation plays a highly significant role is in the field of reproduction in the medical interview. This is entirely in keeping with the purpose of the verbal exchange as being principally for the dispensation of goods and services, where the recommendation is a form of 'offer'. The principal exponents of recommendation in the medical interview are *let's*, *will* and *can*, in its interpersonal rather than ideational function.[40] By contrast, recommendation plays a much less significant role in the medical research papers, and almost drops out of sight on the medical textbooks.

In the primary context, recommendation is the fourth most

probable reason for authorial intrusion into the text, although there is not much to choose between this and expressions of emphasis in terms of frequency. It constitutes 4.0% of the total reasons for authorial intrusion in the research paper and 6.9% in the case history. However, it comprised a much grander 13.3% and 7.3% in Adams Smith's paper. Recommendation here extends to obligation as well as necessity. By far the most popular exponent was *should*, with only a couple of instances of *must*, very much on a par with *have to*. We have already glossed the reason for the diminished status of recommendation in our corpus. The number of likely occurrences of recommendation are obviously limited within any one paper by the functional confines of the Discussion section, where authorial recommendation typically occurs. An extension of the other areas of the paper, in our case mainly the Results sections, does not increase the number of instances of authorial recommendation at the end of the paper. An extremely short research paper would probably have an extremely high incidence of recommendation; whereas our longer ones have a relatively low incidence of this functional category.

In the medical textbook, the incidence of recommendation, never a highly significant function, has an incidence of only 1.32%. However, this is entirely in keeping with the overall delocation and relocation of the recontextualized text in keeping with the operational principles of the pedagogic device.

> Pedagogic discourse, then, is a principle which removes (delocates) a discourse from its substantive practice and context, and relocates that discourse according to its own principle of selective reordering and focusing.[41]

Since the recommendation is a statement of the author's interpretation of how to apply the theoretical conclusion in the research paper to the specific environment out of which the text was produced, once this environment has become removed from the context of the text, the function of recommendation becomes redundant. As we have seen, even where recommendation does occur in the recontextualized text, it has an almost entirely intra-discursive reference; whereas the recommendation which is generated in the context where the research paper was produced refers extra-discursively to the solution of the practical problem of the report.

> In this process of the delocation and the relocation of the original discourse the social basis of its practice, including its power relations, is removed. In the process of de- and relocation the original discourse is subject to a transformation which transforms it from an actual practice to a virtual or imaginary practice.[42]

The process of recontextualization in the **tenor** of medical discourse can be traced by examining the changes that take place in four main characteristics of the medical text as it

becomes 'recontextualized' from the field of production to the field of reproduction. First, there is a reduction in the incidence of expression of probability as the text loses its *lines of argumentation*. Secondly, there is a shift in the meaning of the evaluative comment as the text moves from the expression of relative uncertainty to the *maintenance of certainty*. Thirdly, there is a huge increase in the expression of emphasis as the recontextualized text gathers its *didactic force*. And finally, the incidence of recommendation becomes reduced and refocused intra-textually as the recontextualized text becomes removed from its *contextual reference*.

The changes that take place in these four areas of the **tenor** of medical discourse enable a medical text to be realized as a recontextualized text through the distribution of its **interpersonal** resources. This yields the texts of 'common sense' medical knowledge their final four substantive characteristics of "un-argumentativeness", "certainty", "didacticism" and "contextlessness".

In Chapter 9 we saw how, as the medical text moves through the three principal institutional contexts of the construction of medical discourse (the fields of production, reproduction and recontextualization), a delocation and relocation of relations of time and space in medical text is realized symbolically by the modulation of the ideational resources of tense. In Chapter 10 we saw how, as the medical text moves through the three principal institutional contexts of the construction of medical discourse, the transformation

of the relations of process and action is realized symbolically by the modulation of the ideational resources of transitivity and voice. Both these symbolic modulations of the **ideational** resources of the text created an *ideological effect*.

So here, the symbolic realization of the **interpersonal** relations of the medical text also shifts as it moves through the three principal institutional contexts of the construction of medical discourse. In this way, medical discourse operates as a symbol system which has a dual *ideological effect*. First, it sustains the knowledge claims of a corpus of 'doxic' texts to which only a restricted professional group are permitted access. And secondly, following on from this, it therefore maintains an asymmetrical distribution of power, in the interests of that privileged social group.

Notes and References

1. In the Hallidayan sense (1985. An Introduction to Functional Grammar. London: Edward Arnold.)

2. C.f. Halliday (1985).

3. Kress, G.R. (Ed.). (1976). System and Function in Language: selected papers by M.A.K. Halliday. Oxford: Oxford University Press, p. 198.

4. Adams Smith, D.E. (1984). Medical discourse: aspects of author's comment. The ESP Journal, 3, p.27.

5. Kress (1976), p. 198.

6. See Swales, J. (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press; and Chapter 7, above.

7. Swales, J. (1981). Aspects of Article Introductions. Birmingham, UK: The University of Aston Language Studies Unit, p. 53.

8. Adams Smith, D.E. (1984). Medical discourse: aspects of author's comment. The ESP Journal, 3, 25-36.

9. A list was drawn up on Lotus 123 of the exponents of the different interpersonal functions for analysis.

10. Kress (1976), p. 193.

11. Adams-Smith (1984), p.27.

12. Halliday (1985).

13. **Text E:** Verity, C.M., Ross, E.M., & Golding, J. (1992). Epilepsy in the first 10 years of life: findings of the child health and education study. British Medical Journal, 305, 857-861; **Text F:** Greer, S., Moorey, S., Baruch, J.D.R., Watson, M., Robertson, B.M., Mason, A., Rowden, L., Law, M.G., Bliss, J.M. (1992) Adjuvant psychological therapy for patients with cancer: a prospective randomized trial. British Medical Journal, 304, 675-680; **Text G:** European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male transmission of HIV in 563 stable couples in 316 stable couples. British Medical Journal, 305, 809-813; **Text H:** Muijen, M., Marks, I., Connolly, J., & Audini, B. (1992). Home based care and standardized hospital care for patients with severe mental illness: a randomized controlled trial. British Medical Journal, 304, 749-54.

14. Chapter 7, pp 201 ff.

15. Adams-Smith (1984).

16. Adams-Smith (1984), p.28.

17. Adams-Smith (1984).

18. Adams Smith (1984), p.27.

19. **Text I:** Bwala, B.A., Gardner-Thorpe, C. (1990). Intractable epilepsy. British Journal of Clinical Practice, 44(3), 106-110; **Text J:** White, A., Harries, D., & Allen, S.C. (1990). Anorexia nervosa in the elderly: a case report and review of the literature. British Journal of Clinical Practice, 44(11), 630-631; **Text K:** Patel, A., & Creery, D. (1990). Pneumatosis intestinalis in AIDS: an unreported complication. British Journal of Clinical Practice, 44(11), 768-769; **Text L:** Karni, A.M., Farah, S., Khadadah, M., & Al-Duwaisan, H. (1990). A unique case of Munchausen's syndrome. British Journal of Clinical Practice, 44(11), 699-701.

20. Adams Smith (1984).

21. Adams Smith (1984).

22. We have already seen in Chapter 8 that the elliptical nature of the Methods section in the medical research article does not actually lend the methods to verification as is supposed.

23. **Text M: Pharmacology.** Rang, H.P., & Dale, M.M. (1986). Drugs used in treating motor disorders: epilepsy, Parkinsonism and spasticity. In Pharmacology (pp.530-539). Edinburgh: Churchill Livingstone.

24. **Text N: Biochemistry.** Stryer, L. (1988). DNA: genetic role, structure and replication. In Biochemistry (pp.559-573). (3rd ed.). San Francisco: W.H. Freeman.

25. Bernstein, B. (1977). Class, Codes and Control, vol. III. London: Routledge & Keegan Paul.

26. **Text O: Physiology.** Guyton, A.C. (1991). Blood flow through the systemic circulation and its regulation. In Anatomy and Physiology (pp.451-460). (8th ed.) Philadelphia: Saunders.

27. **Text P: Anatomy.** Guyton, A.C. (1991). The skeletal system and its joints: 1. General structure; bone as tissue; the skull. In Anatomy and Physiology (pp.87-95). (8th ed.) Philadelphia: Saunders.

28. Chapter 9, Fig. 9.2.

29. Adams-Smith (1984), p.33.

30. Halliday, M.A.K. (1967-8). Notes on transitivity and theme in English, Parts 1-3. Journal of Linguistics, 3(1), 37-81; (2), 199-244; (2), 179-215; (1985).

31. Adams-Smith (1984), p.27.

32. Halliday (1967a; 1967b; 1968).

33. Chapter 6, p.195.

34. Matthiessen, C. (1990). Lexicogrammatical Cartography: English Sys-

tems. Draft 4. Unpublished Manuscript: University of Sydney, p.269.

35. Geertz, C. (1983). Common Sense as a Cultural System. In Local Knowledge (pp. 73-93). New York: Basic Books.

36. Adams-Smith (1984), p.34.

37. Adams-Smith (1984), p.34.

38. Adams-Smith (1984), p.27.

39. Matthiessen (1990), p. 269.

40. Halliday (1967a,; 1967b; 1968); Matthiessen (1990), pp.272 ff.

41. Bernstein, B. (1990). Class, Codes and Control, vol. IV. London: Routledge & Keegan Paul, p.184.

42. Bernstein (1990), p.184.

CHAPTER 12

AGENCY and STRUCTURE in MEDICAL DISCOURSE

At the beginning of this thesis we noted the generally held assumption that language is a means of control as well as communication. So far, it has been established how the grammatical and rhetorical structuring of language functions within the institutional context of medical discourse as a symbol system which has ideological effects. It is important to consider, finally, the relationship of the agent to these linguistic and social structures, and whether the agent has the potential to *act* within and upon them. In this chapter we will first consider the antimony between the theories of 'action' and 'structure' that emerges from the first five chapters. Secondly, we will consider the implications of this with regard to human agency and the potential for the structural transformation of both language and society. And thirdly, we will resolve the dichotomy between a semiotic and semantic theory of meaning in the light of the findings of Chapters 6-11.

Although theories of both 'action' and 'structure' have been incorporated into this thesis, they have generally appeared as mutually exclusive concerns within the traditions of philosophy and sociology. The theory of language as action proposed by Austin and Searle in Chapter 1 has informed an analysis of discourse limited to the "immediate nexus of interaction".[1] Halliday's functional conception of language as

"meaning potential" (Chapter 5), Coulthard's systemically influenced approach to the analysis of medical interviews (Chapter 6), and Swales's 'process analysis' model of the medical research article introduction (Chapter 7) are all built upon the presuppositions of the speech act theorists. By considering a statement within the context of its "speech situation", it becomes possible to supersede the linguistic paradox which distinguishes constative from performative utterances. However, the context laid down by speech act theory is limited to the immediate circumstances of the text: here, the dyadic situation of the medical interview and the intertextual referencing of the medical research paper. Consideration of the impact of social structure of the institutional site of the text upon the instances of language in question is bracketed in such approaches.

From a 'structural' perspective, however, the speech situation of the "immediate nexus of interaction" does not amount to a context for language at all. Pierre Bourdieu has argued, fairly brutally,[2] that Austin's approach in fact still takes the analysis of individual speech acts *out* of context. According to Bourdieu, Austin is ultimately unable to give an account of how the speech act (or statement) actually attains its performative function within the restricted frame of reference of the speech act:

> ...all efforts to find, in the specifically linguistic logic of different forms of argumentation, rhetoric and style, the

source of their symbolic efficacy are destined to fail as long as they do not establish a relationship between the properties of discourses, the properties of the person who pronounces them and the properties of the institution which authorizes him to pronounce them.[3]

Bourdieu maintains that the "performative efficacy" of a statement should be considered with regard to the person who is uttering it and the authority that is vested in the spokesperson by his or her institutional position. In this way a statement attains the status of a fact; but, it is a factual status that is also achieved through the exercise of the power of a dominant social group. What is constituted as fact can also happen to be in the interests of the social group which controls the medium whereby factuality is constructed.

> The stylistic features which characterize the language of priests, teachers and, more generally, all institutions, like organization, stereotyping and neutralization, all stem from the position occupied in a competitive field by these persons entrusted with delegated authority.[4]

This then operates dialectically since, through the association of a particular social group with the production of ostensibly factual statements, a group therefore goes on accumulating cultural and economic capital.

This apparent antimony between 'action' and 'structure',

which Bourdieu expresses so polemically also lay behind the contradiction between John Searle's conceptualization of the 'speech act' and Michel Foucault's conceptualization of the 'statement'[5] that was examined in Chapter 2.[6] While Foucault ultimately attempted a reconciliation of their two positions by conceding that both concepts were in essence the same, Dreyfus and Rabinow[7] are actually more accurate when they gloss the difference in approach as being due to the fact that Searle's concept of the speech act was grounded in "everyday" speech acts; while Foucault was looking at what they call "serious" speech acts, i.e. speech acts that take place within an institutional context.

> Foucault...is not concerned with *everyday* speech acts....nor is he interested in the way a local, pragmatic context and a background of nondiscursive practices determine the conditions of satisfaction of speech acts....Rather, Foucault is interested in just those types of speech acts which are divorced from the local situation of assertion and form the shared everyday background so as to constitute a relatively autonomous realm.[8]

From the outset, this thesis has not taken a consideration of "everyday" speech acts and "serious" speech acts (or institutionally organised statements), as mutually exclusive concerns. Neither, as shall be seen in the next section, do we regard "serious" speech acts as operating in a relation of

"autonomy" to "everyday" speech acts. As was stated at the outset,[9] as well as using techniques of 'discourse analysis' to examine discourse within the immediate context of interaction, this thesis has also addressed issues which arise from the production, transmission and reproduction of institutionally organized discourse within the broader domain of what we have called 'discourse theory'.[10] An account has also been given of the structural relations between discourse and its institutional settings with reference not only to the archaeological and genealogical methodology of Michel Foucault, but also to Bernstein's model of the pedagogic device. These are two essentially 'structural' (if not strictly 'structuralist') approaches, which should be regarded as complementary.

In his earlier writings,[11] Foucault accorded primacy to the discursive relations which exist between background practices such as "institutions, and economic and social processes", while relegating the relations of the ways that practising subjects reflect upon and define their own behaviour, and the rules which are immanent in discursive practice, to a subordinate position.[12] Bernstein's theory of the 'pedagogic device' also gives an account of the institutional organization of discourse. The pedagogic device is the principle whereby other discourses are appropriated by pedagogic discourse and are brought into a "special relation with each other for the purposes of their selective transmission and acquisition".[13] Although Bernstein emphasizes that his "focus

is very different", he concedes that the work of Foucault has "had an influence" upon his approach. But importantly, Bernstein considers that *the articulation of the specific grammar of the pedagogic device is fundamental to much of Foucault's work.*[14]

However, ultimately a theory of discourse (taken as institutionally organized language) - and hence a theory of language - which draws exclusively upon either a theory of 'action', or a theory of 'structure', cannot do justice to the complexities of the issues involved. The deficiencies lie in the former's inability to give an adequate account of meaning and in the latter's inability to give an adequate account of agency.

The analytic philosophers are unable to give any account of "conceptions of structural explanation or social causation." And, more importantly, "they have also failed to relate action theory to issues concerning institutional transformation".[15] The examples of language which are examined by Austin and Searle tend to arise out of speech situations which are both hypothetical and parochial, while problems of larger scale, structured institutional contexts for speech acts remain unconsidered. Thus, linguistic approaches towards the analysis of discourse derived from the speech act theorists fail to give an adequate account of the effects upon agents and discourse of the power of institutions. Also, the limitations of their theoretical base means that they cannot give an account of the ideological effects of

organized sets of speech acts (institutional discourse) since there is no scope within their theory for an account of power or the structures of domination upon which such an account depends. In this respect they are deficient to a large degree in terms of a theory of meaning.

On the other hand, structuralist and quasi-structuralist thought fails to give an adequate account of the intentions of the individual actor, or of the transformation of institutions over time. Theories which focus exclusively on 'structure' have tended in this regard to accord "a priority to the object over the subject, or in some sense to structure over action"[16] so as to remove any capacity for personal initiative from the individual member of society.

It appears necessary both for progress to be made in the philosophy of language and to further an understanding of the generation and transmission of power within the institutions of modern societies, to break out of the vicious dualism of this dichotomy between 'action' and 'structure'. While the theoretical basis of this thesis has leant towards a structural analysis of the functioning of language within the institutional framework of the medical sciences, certain features of our empirical analyses of medical discourse point towards the exercise of some degree of reflexivity on the part of the agent within the contexts of medical discourse.

12.1 Reflexivity in Medical Discourse

Within the field of the recontextualization of medical discourse, a historical progression has taken place in the generic structure of medical discourse, from the epistolatory mode to the style of more formal report writing. The most recent watershed in the evolution of the medical report writing was noted in 1990, when the British Journal of Clinical Practice (B.J.C.P.) announced its decision[17] to follow the British Medical Journal (B.M.J.)[18] in ceasing to publish individual case histories.

This is of importance with regard to the construction of the 'norm' of the medicalized identity of the patient within the field of production. For the decision taken within the recontextualizing field will constrain the interest of the agents working in the field of production in anomalous medical cases in favour of the more globalizing tendencies of epidemiological surveys, which tend to reduce data and identity to their most generalizable denominators.

However, it is hard to say that the progressive evolution of these modes of discourse has happened according to their own *anonymous* rules.[19] While the editorial column has its own forms of encoding, the move to elide the idiopathic text from the B.J.C.P., even though it was taken within an institutionally and discursively structured environment, was still a *decision* made by members of the editorial board, a group of individual actors to whom one has to give credit for some

knowledgeability about their own actions.

A similar phenomenon can be seen at the other end of the spectrum of the distribution of power within medical discourse. There also appears to be scope for contradiction and conflict within the context of the reproduction of medical discourse. This was evidenced in our interpretation of Interview D^{20} where, as the patient was socialized into the repeated cycling of the medical interview, she actually became enabled to challenge the value of the doctor's dispensation of goods and services with regard to the treatment of her child. Thus, far from constituting a mute acceptance of the rules of medical discourse by the figure of the patient, this mode of discourse actually opens up possibilities for alternative courses of action that the patient might take. These possibilities are grounded in the accumulated understanding of both the epistemological basis and the strategic rules of negotiation of medical discourse by the patient, built up through repeated outpatient visits. In some cases progressive socialization into the field of the reproduction of medical discourse can situate the patient in a position of noncompliance rather than compliance with the discursive rules.

Therefore, in the modes of discourse that we have examined in the three fields of pedagogic discourse, there is a possibility for the 'could have acted otherwise',[21] which gives scope for individual reflexivity of action. This individual reflexivity of action is worked out within the different discursive modes and has the potential to 'feed back'[22]

from the discursive to the institutional context and hence, potentially, to impact upon the dominant principles of society.

In this respect, the decision of the editorial boards of certain medical journals throughout the 1980s to scrap the reporting of anomalous cases operated in a dialectical relationship with the dominant ideological principles being worked out within Western societies at the time. And this decision will reverberate through the global construction of medical discourse in the field of both production and reproduction, in a way which has implications for a redistribution of 'cultural capital' within medical institutions.[23]

Individual case histories are likely to be submitted to journals by doctors who are limited in their material and physical resources; and the publication of one or two articles often gives the individual doctor-cum-researcher the scope to acquire cultural capital by the publication of one or two papers based on straightforward clinical experience. With fewer and fewer outlets available to the more independent, non-funded sectors of medical research, the decision by certain medical journals just to publish epidemiological studies increases the cultural prestige of well-resourced research institutions at the expense of non-funded research teams who are working with a certain degree of autonomy. In this way there is a redistribution of cultural capital within the context of pedagogic institutions from the less well-off to the

better-off. This parallels the redistribution of economic capital which was taking place over the same period within a wider social ambit. In a period where there is also increasing central control of the resources, both economic and physical, which are provided to large scale scientific research, this means that the entire gamut of medical research is becoming increasingly subordinate to central government policy and the availability of funding.

Thus, our empirical studies would indicate that there are instances where there is a reciprocal relationship between the action of agents who operate within the different fields of medical discourse, the structuring of the institutional fields and the dominant principles of society. These agents act strategically within the environment of the material and discursive resources which are generated and allocated according to the rules which operate in the different fields. The key point is that our observations suggest that there is a dialectical relationship between agent, institution and principles of society, which allows for individual choice between various degrees of conformity or nonconformity to the rules. The agent's choice of action feeds back recursively through the structures of society to impact upon the dominant principles of society.

12.2 Duality of Structure

A resolution of the apparent antinomy between theories of 'action' and 'structure' is offered by Anthony Giddens' theory of the "structuration" of social systems.[24] He sees the concepts of 'structure' and 'agency' as being mutually dependent in as much as the structural properties of social systems are "both the medium and the outcome of the practices that constitute those systems".[25] This dialectical relationship between agency and structure, Giddens calls "the duality of structure".

> According to the notion of the duality of structure, **rules** and **resources** are drawn upon by actors in the production of interaction, but are thereby also reconstituted through such interaction.[26]

Like Foucault, Giddens rejects the notion of structure as a constraint to action; in fact, he sees structure as "essentially involved in its production". However, whereas for Foucault the relationship between structure and action is monological, for Giddens it is dialogical. While the structure of pedagogic institutions is realized in the production, reproduction and transmission of specialized modes of discourse which position the individual actor, Giddens sees the actor as still being knowledgeable about institutional processes and, unlike from Foucault's perspective, this

knowledge is integral to the way in which society operates. This knowledgeability is not limited to scepticism on the part of professional and nonprofessional classes with regard to the official discourse.[27] A certain autonomy can be attributed to the individual actor positioned at different institutional sites, which is capable of 'feeding back' into the continuous process of the construction and maintenance of specialized modes of discourse, and hence of pedagogic institutions themselves. However, the amount of autonomy that the actor has is relative; and in this respect, the actor is caught up within relations of "autonomy and dependence" which are two-way:

> power within social systems can thus be treated *as involving reproduced relations of autonomy and dependence in social interaction*.[28]

The **rules** of social practice operate like the rules of a language. Just as an individual can speak a language without being able to articulate the rules of that language so it is, for Giddens, with regard to the rules of social practice. In social practice, 'knowing the rules' does not entail the ability of the actor to be able to articulate them discursively. Rules can be part of the 'tacit' as well of the 'discursive' knowledge of the actor.

> The operations of practical consciousness enmesh rules *and* 'methodological' interpretation of rules in the continuity of

practices.[29]

Thus, for Giddens, rules are not "generalizations" of social practices, but are rather the "medium" by which social practices are generated.

Like Foucault, Giddens sees the concept of power as being central to social theory.[30] However, Giddens distinguishes between the concept of power and that of **resources**, "as structural properties of social systems". Thus, power is not a substantive *"state of affairs"*; and neither is it an irrational force, as might be inferred by a Nietzschean reading of Foucault's genealogical analyses. Rather, power is a "capability" which is brought about by resources. Resources are defined as:

> the 'bases' or 'vehicles' of power, comprising structures of domination, drawn upon by parties to interaction and reproduced through the duality of structure.[31]

Giddens distinguishes between two different types of resource, "which constitute structures of domination, and which are drawn upon and reproduced as power relations in interaction". These are the resources of 'authorization' and 'allocation'. Authorization refers to "capabilities which generate command over *persons*"; allocation refers to "capabilities which generate command over *objects* or other material phenomena".[32] At the outset of the thesis it was

stated that institutionalized modes of discourse were symbol systems which had an ideological effect. The effect of these symbol systems was also linked to relations of domination in terms of the furthering of the interests of a dominant, hegemonic social group or groups. Within Giddens's theory of power, the ideological effect of the symbol system of institutional discourse can therefore be linked to the mobilization of one or both types of resource outlined above.

In the case of medical discourse, the ideological effect of the texts which have been examined are linked mainly, though not exclusively, to the mobilization of the resource of authorization. With reference to Bourdieu's refutation of the parochialism of Austin's conceptualization of linguistic context above, medical texts realize their "performative efficacy" because of their association with a dominant, hegemonic group of doctors and medical researchers. However, the relationship between the power-effect of the medical text and the (hierarchically organized) social groups who are involved in their production, reproduction and transmission, is again a dialectical one. Just as the symbolic effect of the text resides in the exercise of power by a dominant social group, so the dominance of that group is sustained by its association with the production, reproduction and transmission of the same official discourse.

The resource of authorization, then, is realized by the symbol system of medical discourse in as much as the guardianship of the medical "doxa" by a dominant social group dialec-

tically reinforces the capability of the members of that class to "generate command" in the name of that "doxa" over other members of society. However, authorization and allocation are not totally exclusive categories. As has been noted in Chapter 4,[33] there is a tendency, particularly in capitalist societies,[34] for material wealth also to be accumulated by the members of society who have authority. This can either take an institutional form, as in the attraction of research grants in the medical field, or a personal form, as in the receipt of a high salary and substantial publisher's advances and copyright payments. In according the resource of authorization primacy over that of allocation, or ownership of property, this account of the power base of the dominant professional social group differs from traditional marxist approaches, in which the ownership of property is always seen as the ultimate source of power.

Power is conceived of as mediated by resources both as a "transformative capacity" and as "domination".[35] Within the "institutional forms through which signification is organized"[36] (e.g. those of medicine or education), power is a capability which is exercised through the resource of authorization as a structural component of the social system; in this way, structures of domination are also reproduced.[37] This resource (authorization) is realized structurally as an ideological effect of the symbolic system of pedagogic discourse. In particular, Giddens proposes that the concept of power be used to refer to "interaction where transformative

capacity *is harnessed to actors' attempts to get others to comply with their wants*".[38] Thus, within the contexts of interaction of medical institutions, power is exercised by an agent acting with the authority bestowed upon them in respect of their relations to the official discourse, the "doxa", in order to produce a definite outcome for his or her action. Yet, this power relation is not unequivocal. Particularly within the field of reproduction of medical discourse, it is possible for the *un*authorized agent, the patient, to acquire the necessary discursive resources within the context of strategic conduct. In this respect, while we have seen that the constitution of power within social system involved "reproduced relations of autonomy and dependence in social interaction":

> ...even the most autonomous agent is in some degree dependent, and the most dependent actor or party in a relationship retains some autonomy.[39]

The **rules** by which the specialized discourse of pedagogic institutions is produced, reproduced and transmitted as a social practice have been described as the principles of the 'pedagogic device'.[40] The rules of the pedagogic device organize the mediation of relations of domination through its *structure* of pedagogic discourse as a symbol system and its *function* as an ideological effect. In the next section, we shall examine more precisely how pedagogic discourse operates

within the epistemological field of medicine, as realized in the dialectical relationship between institutionally organised structures of domination and the immediate nexus of interaction.

12.3 Meaning, Structure and Situation

Pedagogic discourse is a structured set of statements which produces, transmits and reproduces knowledge within an institutional setting. A particular mode of pedagogic discourse, such as that of medicine or education, has both internal and external relations. The main aim of this thesis has been to explore the internal relations of medical discourse: the relations between different institutional sites within the field of medicine, the specific forms in which medical discourse is encoded at each site and the implications of this for the positioning of the subject. However, medical discourse also has a set of external relations, whereby it is related to other modes of discourse within society (law, the social sciences, the natural sciences), to the principles of the linguistic system, and to the dominant principles of society via the official recontextualizing field.[41] In this respect, the structure of institutionalized forms of discourse are linked to the total structure of the social system.

Pedagogic discourse forms "interpretative schemes" which are "applied by actors in the production of interaction":

> Interpretative schemes form the core of the mutual knowledge whereby an accountable universe of meaning is sustained through and in processes of social interaction.[42]

An interpretative scheme is a modality of interaction which is specifically concerned with the communication of meaning. As such, interpretative schemes display the same "duality of structure" between institutional systems and strategic conduct, as do other modalities of interaction which enable the reproduction of the social system over time.[43]

From an institutional perspective interpretative schemes mediate the "reproduction of the structural components of systems of interaction"; in this respect, this modality of interaction represents "rules and resources considered as institutional features of systems of social interaction". From the perspective of strategic conduct, interpretative schemes "are drawn upon by actors in the production of interaction"; in this way interpretative schemes operate as both as a stock of "knowledge and resources employed by actors in the constitution of interaction" and "rules and resources considered as institutional features of systems of social interaction".[44]

The "duality of structure" of interpretative schemes operates within two systems: the reproduction and potential transformation of language over time; and the reproduction and potential transformation of the social system.

At the same time as actors use language in context of the immediate nexus of interaction, so actors' uses of language

have an effect upon the linguistic system. Forms of language which are used repeatedly within the immediate nexus of interaction become regularized over time, and thus affect the linguistic system - either to stabilize or to transform elements in the formal system of language. However, from an institutional angle, within modern societies the increasing regularization and control of communication systems within institutional settings such as medicine or education[45] means that the linguistic system is being increasingly monitored by the organized collectivity of systematized institutions rather than by the strategic initiatives of individual actors.

One example of this that has been noted within the field of medicine in Chapter 5, is the rigid control which the U.S. National Library exercises, through the international distribution of Index Medicus, over the terminology that is used by the medical research writer within the context of production. Furthermore, "special languages"[46] which are generated within the relatively autonomous realm of modern institutions become disseminated through social life by the pervasiveness of modern surveillance mechanisms and their networked communication systems, for example, the widespread use of epidemiological surveys and the computerization of medical health records. Yet, the generation of "special languages" within everyday social life should not be seen exclusively as a mechanism of control. For it is by appropriating the special language of the medical institution, and using it om the level of *personal strategy* that the recalcitrant mother in Text D

places herself in a position of resistance within the context of the reproduction of medical discourse. Thus, within the "duality of structure" of the linguistic system, the specialized language of medical discourse can function either to socialize the patient into compliance or to be appropriated by the patient in order to take up a localized opposition to the hegemony of institutional knowledge within social life.

The organization of discourse within the institution of medicine according to the principles of the pedagogic device is paradigmatic of the organization of other modern institutions. The theory of pedagogic discourse which was outlined in Chapter 4 was derived from a model[47] which described the institutionalized production, reproduction and transmission of educational discourse. Language, as an interpretative scheme institutionally organized as discourse, not only mediates the recursive reproduction and potential transformation of linguistic systems over time; it also mediates the recursive reproduction and potential transformation of social systems.

Earlier in this thesis, two theories were examined in relation to the rhetorical and grammatical structuring of discourse, which explored the relationship between the meaning of a statement and its context. Halliday's systemic linguistics, which is conceptually related to analytic linguistic philosophy, maintains that meaning arises from the context of situation. Here, 'speaking' is conceived of as 'doing' in as much as language realizes the social structure.[48] However, in functional linguistics there is no theory of *how language is*

reenacted recursively in the social structure. The social structure is enacted in language, but language does not act upon the social structure.

However, Halliday's schema permits the agent more scope for reflexive action than does that of Michel Foucault. In Chapter 3, we saw how Foucault linked his quasi-structuralist analysis of the discourse of scientific rationality to a theory of domination. The implications of this were that discourse was the medium whereby the principles of coercive institutions were articulated upon the agent, or rather, the medium wherein the identity of the agent (madman, patient, delinquent or pervert) was constituted. Again, this is a strictly monological perspective of the relationship between institutions, discourse and agent. Although Foucault later raised the notion of "local resistance"[49] to the hegemony of the discourse of scientific rationality, Foucault refused to *theorize* a means whereby there is any individual capability for the transformation of the discourses of rationality and the institutions which produce them.

Giddens links the theory of meaning to that of "context of situation" to extend the way in which *to do* is also *to act*. He maintains that the context in which a statement or groups of statements is constructed is also susceptible to change by the act of stating.

> The context of interaction is in some degree shaped and organized as an integral part of that interaction as a com-

municative encounter.[50]

The "duality of structure" that takes place between the production, transmission and reproduction of medical discourse and the reproduction of the system of medical institutions is not a simple matter of maintaining a condition of homeostasis. Through the "duality of structure" of language itself, decisions and actions taken by the individual actor impact upon the medical institution in a transformative capacity.

However, the capabilities which individual actors have for impacting recursively upon the reproduction of the social system are unevenly distributed according to the insitutionally organised asymmetry of relations of autonomy and dependence within the context of social interaction. The member of the editorial board who operates within the field of the production of the medical discourse has more power to impact upon the reproduction of the systems of medical institutions and, hence, upon the principles of the dominant social system than the patient who is 'objectified' by the dialogics of medical discourse in the field of reproduction. An uneven distribution of power is effected by the asymmetry of resource allocation (mainly that of authorization) to the two agents (researcher/patient), who are differentially positioned within the context of pedagogic discourse. The agent in the field of production is in a position of relative autonomy in comparison to the agent in the field of reproduction, who is institutionally situated in a position of relative dependence.

12.4 Signification, Codes and Ideology

Interpretative schemes which are "drawn upon and reproduced by actors"[51] in the communication of meaning in interaction are formed by a system of signs. The sign system is subject to the same "duality of structure" that operates within the "structuration" of social systems noted above: "signs only exist as produced and reproduced in signification".[52] Thus, the sign is neither to be taken as a unit for the transmission of information or meaning, as is the case in subjective idealism; nor as a pre-existent property of a sign-system, as is the case in structuralist theory. Rather, signification should be regarded as a "constitutive feature of the context of communication itself". For signification must take into account the generative properties of structure, which is "linked recursively to the communication of meaning in interaction".[53]

While a sign-system exists independently of the communicative acts which it entails, every act of communication is dependent upon a pre-existing signification system.[54] The theory of semiotics brings to light the conventional nature of signs and links the "differences which constitute signification" to the "'spacing' of social practices".[55] However, a resolution of semiotics and semantics neither resides in accepting a theory of the arbitrary nature of the sign, nor does it entail the reduction of the theory of meaning to pure subjectivity.

In this thesis priority has been attributed to the semantic over the semiotic in as much as meaning has been defined in terms of the "contexts of use"[56] of the sign-system. Within the dialectical relationship between the system of signs and the "context of use", the rule - or *principle* - which governs the organization and selection of signs within a particular context resides in a system of codes or "modes of coding".[57] Through the articulation of codes upon the "context of situation", a selection is made from the (arbitrary) system of signs to form the (non-arbitrary) entity of the "text". In this respect, codes have a transformational potential[58] which, as we have seen, is not only brought to play upon the lexical system of a language, but also entails transformations in the syntactical and rhetorical rules involved in the text's production.

The codes which operate within the construction of pedagogic discourse are organised by the "pedagogic device".[59] This affects the construction and transformation of pedagogic texts so that they convey meaning within the institutional contexts of medicine and education: the fields of the production, reproduction and recontextualization of pedagogic discourse. Through the operation of codes, texts which are constructed in the different institutional contexts realize their substantive characteristics. Therefore, in the field of recontextualization, the medical text realizes its characteristics of "presentness" and "immediacy" through the syntactic reorganization of the time-space relationships; its characteris-

tics of "concreteness" and "affectedness" through the transformation of the relations of process and action; and its characteristics of "un-argumentativeness", "certainty", "didacticism" and "contextlessness" through the reconstructing of the point of view of the hypostatized speaker/author.

However, a symbolic as well as a signifying function can be attributed to the syntactic (as well as the lexical) features of the medical text. With Giddens,[60] we shall adopt Ricoeur's definition of a symbol as being:

> any structure of signification in which a direct, primary, literal meaning designates, in addition, another meaning which can be apprehended only through the first.[61]

The symbolic function of pedagogic discourse resides not only in the symbolic effect of lexical items which are realized by tropes of metaphor and metonymy, but also in the transformational potential of the rules of syntax and rhetoric. The "surplus of meaning" which is realized by these features of the text relates in particular to the construction of its symbolic authority, and the resultant potential for the text to authorize the utterances of its speaker/author in a particular social context.

Authorization has been described as one of the 'vehicles' or 'bases' for the distribution of power in society. Ideology has also been taken as the maintenance of structures of domination in the interests of hegemonic social groups.[62] This

thesis has focused on the way in which the structures of signification of pedagogic discourse are "mobilized to legitimate the sectional interests of hegemonic groups".[63] The codes of the pedagogic device are articulated upon the rhetorical and syntactical rules of the signifying system to construct the pedagogic text within its context of situation: not just the immediate nexus of interaction, but also the institutional context of the production, transmission and reproduction of pedagogic discourse. Through the operation of the duality of structure of the signifying system, just as the context of situation is encoded in the meaning of the pedagogic text, so the pedagogic text functions in the reproduction and potential transformation of the context of situation. However, the encoding of the sign-system in the pedagogic text also has a "surplus of meaning" which realizes the symbolic authority of the text. In this way the pedagogic text operates both as sign-system and as a symbol-system which has an ideological effect: that of the maintenance of the interests of hegemonic groups through the appropriation and manipulation of authorization as a *textual* resource.

Notes and References

1. Giddens, A. (1979). Central Problems in Social Theory. London: Macmillan Educational, p.96.

2. Bourdieu, P. (1991). Language and Symbolic Power. Cambridge: Polity Press, pp. 108 ff.

3. Bourdieu (1991), p.111 ff.

4. Bourdieu (1991), p.109.

5. Foucault, M. (1972). The Archaeology of Knowledge. London: Tavistock, p.82-3.

6. Chapter 2, p.55-6.

7. Dreyfus, H.L. & Rabinow, P. (1982). Michael Foucault. Beyond Structuralism and Hermeneutics. Brighton: Harvester, p.47.

8. Dreyfus & Rabinow, (1982), 47-48.

9. Chapter 1, pp.11-12.

10. Chapter 1, p. 6.

11. Foucault, M. (1967). Madness and Civilization. London: Tavistock; (1972). The Archaeology of Knowledge. London: Tavistock; (1973). The Birth of the Clinic. London: Tavistock.

12. Foucault (1972), p.45; in Chapter 2, p.28.

13. Bernstein, B. (1990). The social constitution of pedagogic discourse. In Class, Codes and Control, vol. IV (pp.165-219). London: Routledge & Keegan Paul, p.183.

14. Bernstein (1990), p.165.

15. Giddens (1979), p.49.

16. Giddens (1979), p.50.

17. Publisher's Note. (1990). British Journal of Clinical Practice, 44(12).

18. Locke. S. (1988). Editor's Note. British Medical Journal, 297, 12.

19. As outlined in Foucault' theory of discourse (Foucault, 1972).

20. Chapter 6, pp.192 ff.

21. Giddens (1979), p.56.

22. It is beyond the scope of this thesis to discuss the different forms

that feedback mechanisms can take. Giddens (1979, p.78) discusses three: homeostatic causal loops, self-regulation through feedback and reflexive self-regulation.

23. Owing to the hegemony of the Anglo-American publishing houses, the editorial policies of medical journals being published by regional institutions such as the Medical Faculties in Kuwait and Singapore, will likely follow suit after a short time lag.

24. Giddens (1979), p.81 ff.

25. Giddens (1979), p.69.

26. Giddens (1979), p.71: my emphasis.

27. Giddens (1979), p.72.

28. Giddens (1979), p.93.

29. Giddens (1979), p.68.

30. Giddens (1979), p.68.

31. Giddens (1979), p.69.

32. Giddens (1979), p.100.

33. Chapter 4, p.105.

34. Not necessarily so in socialist societies.

35. Giddens (1979), p.91.

36. Giddens (1979), p.97.

37. Giddens (1979), p.91.

38. Giddens (1979), p.93.

39. Giddens (1979), p.69.

40. Chapter 4, p.102 ff.

41. See Chapter 4.

42. Giddens (1979), p.83.

43. Two other modalities of interaction are those of domination, which is concerned with the mediation of power; and sanction, which is concerned with the mediation of legitimation (Giddens 1979, p.82).

44. Giddens (1979), p.81.

45. See Mode of Production, Mode of Information. In Poster, M. (1987).

Foucault, Marxism, History (pp.44-70). Cambridge: Polity Press.

46. To use Christer's term: Christer, L. & Nordmann, M. (Eds.). 1989. Specialized Language: from humans thinking to thinking machines. Clevedon: Multilingual Matters Ltd.

47. Bernstein, B. (1990).

48. Halliday, M.A.K. (1973). Explorations in the Function of Language. London: Edward Arnold, p.69; see also Chapter 5, Section 5.1, p.143.

49. Gordon, C. (Ed.). (1980). Power/Knowledge. Brighton. Harvester Press.

50. Giddens (1979), p.83.

51. Giddens (1979), p.98.

52. Giddens (1979), p.97.

53. Giddens (1979), p.97.

54. Eco, U. (1976). A Theory of Semiotics. Bloomington: Indina University Press; in Giddens, p.98.

55. Giddens (1979), p.98.

56. Giddens (1979), p.9

57. Giddens's phrase again (1979, p.97).

58. Giddens (1979), p.99.

59. Bernstein (1990), p.102 ff.

60. Giddens (1979), p.107.

61. Ricoeur, P. 1974. Existence and hermeneutics. In The Conflict of Interpretations (pp.12-12). Evanston: Northwestern University Press.

62. Chapter 1, p. 6 ff.

63. Giddens (1979), p.188.

CHAPTER 13

BEYOND the PEDAGOGIC DEVICE

Contradiction, Conflict and Resistance

In this final chapter of the thesis, we will first of all define how the pedagogic device operates as a symbol system. We will then go on to look at several implications of the pedagogic device, in which it would appear that it is a model which is subject to conflict and contradiction as well as cohesion and homogeneity.

First, we will assert that the pedagogic device is the relay of culture within the modern state; in this respect the *scope* of the pedagogic device is subject to certain geographic and temporal boundaries. Secondly, the pedagogic device maintains a dialectical relationship with the principles of the *state* as a zone of conflict and competition as much as of homogeneity and cohesion between professional groups. Thirdly, there is close relationship between the process of pedagogization and the expansion of the *professional* classes. Fourthly, we will look at the effect that the pedagogic discourse is having upon pedagogic practice in other countries, in particular two examples of those with 'near-developed' status, in order to link our theory of pedagogic discourse to current theories of *globalization*. And finally, we will consider one main area of *challenge and resistance* to the pedagogic device: the emergence of forms of medical practice which lie outside the pedagogic device.

13.1 The Pedagogic Device as Symbol-System

At the outset of this thesis, a parallel dualism was established in both *critical theory* and *linguistics*. Within critical theory, we identified two broad theories of *ideology*: one - the 'epistemological' version - was based on a theory of the correct correspondence between 'consciousness' and a hypostatized 'reality'; and one was based on a critique of 'social practices' in which this philosophical dualism was superseded. A parallel crux was also found in the theory of *language*. In particular, the theory of 'speech-acts' founded by J.L. Austin and further developed by John Searle, supersedes a division of utterances into statements of fact (constative utterances) and statements of action (performative utterances). Ultimately, both Austin and Searle moved beyond this linguistic dualism in order to establish a theory of language as rule-governed action rather than as a system of correspondence between the signifier and the signified.

It was also proposed that analyses of discourse tended to fall into one of two positions: either discourse is analysed using techniques of *critical theory*, which emphasizes the *external relations* of the text ('discourse *theory*'); or it is analysed in terms of its *rhetorical* and *syntactic* structures, which emphasizes the *internal relations* of the text ('discourse *analysis*'). In this thesis, it was proposed to carry out an analysis of medical discourse at a linguistic level, informed by critical theory. By relinking linguistic

analysis to a critical theory of ideology as praxis it was then proposed, after Giddens,[1] to investigate "*how structures of signification are mobilized to legitimate the sectional interests of hegemonic groups;*" and in particular to analyse how medical discourse operates as a symbol-system that has ideological effects.

We then turned to Michel Foucault for a theoretical account of how discourse is realized as social practice. Foucault provided us with an analysis of the strategies of power as they are realized in the institutional production of *discourse*. In his archaeological studies, Foucault describes how the subject (the madman or the patient) is formed in the interstices between psychiatric and medical institutions and the texts which they produce. In his genealogical studies on penology and sexuality, Foucault describes how the institutional and personal *practices* of the prison, the church, the school and the household form the delinquent and the 'sexualized subject' of modern psychiatry.

> Thus the critical and the genealogical descriptions must alternative and complement each other, each supporting the other by turns. The critical portion of the analysis applies to the systems that envelop discourse, and tries to identify and grasp these principles of sanctioning, exclusion, and scarcity of discourse... The genealogical portion, on the other hand, applies to the series where discourse is effectively formed: it tries to grasp it in its power of affirmation...[2]

Foucault's account of this *discursive practice*, which theorizes the relationship between strategies of power and the institutionalized production of knowledge, informs Basil Bernstein's (1990) model of 'pedagogic discourse'. Here, we have seen how pedagogic discourse is constructed according to the intrinsic grammar of the 'pedagogic device' which comprises distributive, recontextualizing and evaluative rules. These operate in three institutional contexts: the field of production, the field of reproduction and the recontextualizing field. As a text moves from one field to another, e.g. from the field of production to the field of reproduction, it is delocated from its original context and relocated according to the principles of the pedagogic device.

> Pedagogic discourse is then a recontextualizing principle/ discourse which embeds competence in order and order in competence or, more generally, consciousness in conscience and conscience in consciousness.[3]

As this delocation and relocation takes place, three radical transformations take place in the pedagogic text, which we have analysed according to the three meta-functions of Halliday's systemic grammar: *textual*, *ideational* and *interpersonal*.

13.1.1 Textual metafunction

A. Within the *field of production* (primary context) of medical discourse, the paradigmatic text is the medical research paper. However, it was found that there were two types of medical research paper which were sufficiently distinct to constitute discrete genres: the epidemiological study (or nomographic text), which is based on the principle of shared identity; and the medical case history (idiopathic text), based on the principle of separate identity.

Both of these genres are heterodox texts in as much as they incorporate different sub-genres, which realize within the same text principles of competition and solidarity amongst the members of the professional group of doctors. In particular, the Introduction and Discussion sections of the research paper are organized rhetorically so that the author(s) can compete with other members of the profession for epistemological space within the field of medical discourse, as well as for the accumulation of cultural capital. By contrast, the more elliptical Methods and Results sections function to reinforce the solidarity of the professional group through the dependence of rhetorical inferencing upon the shared background knowledge of other members of the professional group.

Since the idiopathic text appeared to be a less stable and less evolved text than the nomographic text, it seemed to be in process of being superseded altogether.

This was seen to be in keeping with a general movement within the field of symbolic control towards the construction and maintenance of shared rather than separate identity within the current phase of capitalism.

B. In the *field of reproduction* (secondary field) of medical discourse the paradigmatic text is the medical interview. The medical interview has a definite structure made up of clearly demarcated 'transactions', and 'exchanges' which vary in function, length and complexity. This structure enables the doctor to maintain an asymmetrical distribution of power within the medical encounter. The exchanges in the medical interview are initiated according to the doctor's prior knowledge of the textbook 'doxa' of the condition which is being examined; and in accordance with this, the perceived 'relevance' of the patient's contributions to the exchange is rigorously controlled. The doctor also reinforces his or her privileged access to the authorized text by withholding the appraisal of the patient's condition in order not to disclose the basis of the disposal of goods and services - the medical note or the prescription - at the end of the encounter. Paradoxically, the progressive initiation of the patient into the discourse of medicine actually appears to be empowering; however, in the last instance the doctor is able to manipulate the medical interview to his or her advantage by utilizing their strategic control over its institutional setting. In this way, the

relations of domination of a particular social and professional interest group are realized within the rhetorical formation of the pedagogic text.

C. The paradigmatic text of the *field of recontextualization* (tertiary field) is the medical textbook. By contrast with the dialogical genres of both the medical interview and the medical research paper, the medical textbook is strictly monological in its rhetorical structure. This recontextualized text assumes the transparency of the 'common sense' discourse of the medical professional. This 'doxic' text then informs the authority of medical professional, thereby according the doctor power within the speech situation of the interview. The medical textbook also provides the shared background knowledge that informs the medical researcher's reading of the more inferential sections of the medical research paper.

13.2.2 Ideational and interpersonal metafunction

Systemic grammar was also utilized to analyse certain transformations that take place within a medical text as it is delocated from the field of production and relocated in the field of reproduction or the recontextualizing field.

A. There is a transformation in the relations of time and space as realized symbolically by the *ideational* meta-

function of tense. Changes that take place in the *field* of medical discourse enable a medical text to be realized as a recontextualized text through a modulation of its *ideational resources*. The Past tenses modulate into the Present. The use of the Past tense in the texts produced within the field of production delimits the relations of the 'context of situation' of the production of a particular piece of discourse. The shift into the Present tense in the recontextualizing field enables the relations of the text to transcend their 'context of situation'. This lends the common sense knowledge of the discourse community of scientists the substantive qualities of "presentness" and of "immediacy". These qualities symbolize the virtual truth of a series of statements as they are represented within the field of recontextualization.

B. There is a transformation in the relations of process and action as realized symbolically by the *ideational* metafunction of voice and transitivity of the pedagogic text. Changes that take place in the *field* of medical discourse enable a medical text to be realized as a recontextualized text through a modulation of its *ideational* resources. There is a shift in the forms of transitivity from the middle to effective, and from the passive to active voices. This lends the relocated text its substantive characteristics of "concreteness" and "affectedness". These symbolic characteristics of the recontextualized text produce two

ideological effects. First, the empirical sciences are 'depersonalized'. Their removal from association with the persona of an author lends them veracity. Secondly, this shift in the logical relations of the text writes into the recontextualized text the logical process that is at the heart of the empirical sciences, that of cause-and-effect, the logical process embedded in the non-middle patterns of transitivity that remain in modern English. This serves to represent scientific phenomena as manifesting pervasive and ubiquitous relations of cause and effect.

C. There is a transformation in the relations of mood and modality as realized symbolically by the *interpersonal* meta-function of speaker's comment. Changes that take place in the *tenor* of medical discourse enable a medical text to be realized as a recontextualized text through the modulation of its *interpersonal* resources. The incidence of verbal and nonverbal modality, as well as various forms of attitudinal marker, decrease as the pedagogic text shifts from the field of production to the field of reproduction. This yields the texts of 'common sense' medical knowledge their final four substantive characteristics of "un-argumentativeness", "certainty", "didacticism" and "contextlessness". In this way, medical discourse operates as a symbol system which has a dual *ideological effect*. First, it sustains the knowledge claims of a corpus of 'doxic' texts to which only a restricted professional grcup

is permitted access. And secondly, following on from this, it maintains an asymmetrical distribution of power in the interests of that privileged social group.

13.2 The Scope of the Pedagogic Device

The pedagogic device is the essential relay for the production, transmission and reproduction of culture within the modern state. The pedagogic device has been defined as the principle of the social organization of the production, transmission and reproduction of culture. Each modern society has a unique form of coding for the production, transmission and reproduction of its culture. This enables it to develop and to be transmitted to future generations. This thesis has analysed the formation of the pedagogic device specific to the cultural and economic ordering of European and American society which emerged in the latter half of this century. This ordering has gone through some radical transformations in the past thirty years, giving rise to what is termed 'postmodernity' (its cultural manifestation) or 'late capitalism' (its economic manifestation).

The postmodern variant of the pedagogic device is characterized in particular by its dispersal: its separate manifestation in different epistemological and cultural areas (medicine, education, the law, religion, and so on). In keeping with the ongoing fragmentation and pluralism of postmodern culture, it is realized differently in different areas.

However, underlying this there is always a separation into its three different hierarchically organized fields (production, recontextualization and reproduction), in which those who occupy the field of production also acquire power through the accumulation of economic and cultural capital relative to the agents who operate in the other fields. The postmodern variant of the pedagogic device is also imbued with the principle of competition in two respects. First, the agents who operate in different fields compete with each other for the acquisition of economic and cultural capital; and secondly, the rules of evaluation[4] (in education) and the rules of appraisal (in medicine) have the potential to instil the principle of competition within the objects of the pedagogic device - be they pupils or patients - through the mobilization of idiographic/idiopathic methods of evaluation.

However, in certain areas, the pedagogic device appears to be able to lay claims to a universalism which takes it beyond the more restricted context of the modern state. First, it can be said, after Bernstein that the pedagogic device is one of the overriding principles of the organization of human culture. In this sense it can be said to be as universal as language, while being at the same time being as polymorphous. Also, the contemporary Anglo-American realization of the pedagogic device is also becoming increasingly 'global' in nature due to the globalizing tendencies of its associated hegemonic culture. At present the Anglo-American variant of the pedagogic device has simply not been functioning long enough in

order to colonize the entire planet despite its globalizing tendencies, riding on the back - as it does - of a consumer culture which is perceived as desirable to the point of addiction by the combined populations of developing and post-socialist nations. However, despite its claim to universalism and its globalizing tendencies in the wake of the economic pull of consumerism, there are numerous areas external to the pedagogic device which currently pose a challenge to its globalizing tendencies and might lead either to drastic modifications in its current formation, or to limitations on its geographical and historical influence.

13.3 The Pedagogic Device and the State

At first sight, it would appear that our model of the pedagogic device is a highly structured model which has only a unidirectional relationship with the state. However, two points need to be noted here. First, our model of the social construction of *medical* discourse should be taken as a model of how any one field of the institutionalized production, production and transmission of knowledge operates and not as an overall model of the state. And secondly, the principles underlying the discursive relations that we have analysed throughout this thesis are in a *dialectical* relationship with the general principles of the modern capitalist state.

Within any one epistemological field, the pedagogic device operates to effect ideological transformations upon the peda-

gogic text. However, the pedagogic device itself is not necessarily a stable device. It contains the potential for conflict and contradiction as much as it does for homogeneity and cohesion. We have seen that the *field of production* (Chapter 7) is characterized by competition for cultural capital amongst competing professional interest groups; and also that the *field of reproduction* (Chapter 6) within the field of medicine is characterized by an apparent contradiction. As the patient is socialized into medical discourse, he or she appears to be able to question the doctor's appraisal of the case and to resist the offer of goods and services by the professional. Yet, in the last instance, the doctor can maintain the upper hand through having prior acces to the 'doxic' medical text and by having recourse to ultimate control of the institutional site of the medical encounter.

Therefore, the *internal* relations of the pedagogic device contain a certain potential for contradiction and resistance. This is also true of the *external* relations of the pedagogic device. Not only is there competition for cultural and economic capital within professional groups engaged in any one field of symbolic control (e.g. between the G.P. and the consultant); there is also competition for cultural and economic capital *between* professional groups engaged in different fields of symbolic control (e,g. between the G.P. and the teacher). Thus, one has to imagine a plethora of parallel models of pedagogic discourse operating within a modern capitalist state, which are in continual competition for the

state's finite cultural and economic resources.

So far, we have only mentioned competition between professional groups who are engaged in the field of symbolic control. However, there are groups with other economic and political interests, who operate outside the field of symbolic control. Bernstein opposes the field of symbolic control to the field of production. And it is between these two fields that some of the hardest fought battles for the allocation of resources are played out within the modern capitalist state.

Therefore, far from being a monolithic, static model, the model of the pedagogic device has the capacity to be multi-faceted and dynamic. Principally, it contains within its structures of competition the potential for internal collapse as well as internal cohesion. Moreover, the relationship between the different levels of the pedagogic device and the state are not unidirectional, but dialectical. In as much as the different fields of the pedagogic device embody the principles of the state, so they also feed back into the dominant structures of the state. Therefore, this thesis leans towards Bourdieu's conceptualization of the state as being comprised of different class fractions who are competing for cultural and economic capital. It is as much in this area of competition within the field of symbolic control, and between the field of symbolic control and other fields, that the modern capitalist state might bear the seeds of collapse, as in the contradictions of the capitalist economic system heralded by proto-marxist theory.

13.4 The Pedagogic Device and Professionalization

It has been proposed that the process of professionalization and multiplication of the division of labour in postmodern industrial societies could go on expanding endlessly as the means of production become both more technologized and more oriented around the production of knowledge-oriented information systems rather than the industrial production of manufactured and consumer goods. In this respect, technical knowledge is becoming increasingly important for the control and management of social and political affairs in industrial society. Twenty years ago, Bell[5] already posited that a knowledge-based society has already replaced a social system grounded in the ownership of property. This expansion of professionalization is also associated with the expansion of the tertiary sector. This leads to a displacement of the manufacturing base of many developed nations by the development of a service economy and the ensuing retrenchment of the members of the traditional 'working classes' into different forms of labour.

Here, it is necessary to consider what actually constitutes a member of a profession. Bryan Turner[6] rejects conventional sociological descriptions of the professions in terms of a list of attributes "which define some fixed essence of a particular occupation". Rather, he puts forward the radical argument that professionalization should be regarded as "a strategy of occupational control" which structures "the

relationship between experts, patrons and clients".[7] This relationship can be described[8] in terms of the ratio between the indeterminacy and the technicality of the esoteric knowledge which is maintained by the professional. We have seen in Chapter 4 how the distributive rules of the pedagogic device operate not only to exclude the patient from participation in the esoteric knowledge of the medical professions, but also to situate the members of the profession in their particular fields.

However, the knowledge of the doctor is based in the cogritive rationality of the medical sciences. Therein lies a potential for contradiction, since the very rationality of this specialized knowledge can also provide the possibility of outside interference and external control of the professional group. The profession itself becomes threatened either where the rationalization of knowledge becomes liable to codification by computers, or - as in the case of the natural sciences - this knowledge can become the basis for routine practices. Thus, the reliance of a professional group upon a purely technical body of knowledge based on cognitive rationality alone can hold the potential for its breakup and its subordination to bureaucratic controls.

Jamous and Peloille[9] maintain that professions protect themselves from the routinization of knowledge by creating a "barrier" in the shape of the indeterminacy of this specialized knowledge:

> the knowledge of the profession has to have a distinctive mystique which suggests that there is a certain professional attitude and competence which cannot be reduced merely to systematic and routinized knowledge...professions have to have a hermeneutic basis; that is, there has to be the development of interpretation which provides the barrier against external regularization through the routinization of its base in knowledge.[10]

The indeterminacy of this specialized knowledge not only maintains the "selection " and "closure" of the occupation, it also increases the distance between the client and the professional. In the medical field this generates an asymmetrical distribution of power between the doctor and patient.

In this respect, the two concepts of 'professionalization' and 'pedagogization' are very close indeed, if not actually homologous, in as much as professionalization depends upon the accumulation, control and distribution of particular forms of specialized knowledge. Indeed, Wilensky[11] has claimed that the learned professions have provided a model by which *all* occupations might eventually claim professional status. Thus, the pedagogic device has a vital role to play both in the creation of professional occupations as well as in the maintenance of professional groups:

> professionalization is now regarded as an occupational strategy in which social groups attempt to control their place within the

> market...these market strategies also depend upon the acquisition of an esoteric body of knowledge via the university system under the general regulation of the state.[12]

This interrelation between professionalization and pedagogization applies to the medical field as well as to other fields in which pedagogic discourse operates. Historically, doctors have only been a professional body since the nineteenth century,[13] and other professions ancillary to the medical field are now beginning to lay claim to professional status. These consist of, on the one hand, groups who already have an established role within the 'clinic', such as pharmacists; and on the other, new bureaucratic professions such as general practice managers. The claim to professionalization of these new groups of workers within the medical sphere actually threatens the status of already established groups, notably that of the general practitioner in U.K. However, the 'professionalization' of an occupation is also crucially linked to its 'pedagogization'.

Within a society comprised largely of professional groups, there will always be certain groups who have accumulated more economic and cultural capital than others. This 'distinction' within the professional groups is maintained by the distributive rules which are operational within the present phase of the pedagogic device in modern societies (Chapter 4). Thus, the consultants and academics who operate within the field of production will always acquire more cul-

tural capital than those agents who work in the fields of recontextualization and reproduction. Furthermore, even within the fields of recontextualization and reproduction, there may be a differentiation with regard to the specialized nature of the tasks involved. As mentioned in Chapter 4, medical appraisal is essentially a hermeneutic act which involves a degree of interpretative skill which cannot be carried cut by a bureaucratic functionary. In this respect, however demeaned the British G.P. might be in terms of working conditions and social status, he or she will always be able to perform a unique function within medical pedagogy which the general practice manager is unable to do.

> All professions will be characterized by a certain duality, that is by an opposition between technical and routine knowledge, and the ideology or mystique of interpretation.[14]

In this way, the potential for 'limitless' expansion of professionalization may well be accompanied by a similarly 'limitless' expansion of the domain of Bernstein's pedagogic device. However, within this expansion of the pedagogization of occupations, the structural inequalities of the distribution of cultural and economic capital between the fields of production, reproduction and recontextualization will maintain in keeping with the principles of the pedagogic device. Moreover, there will be also be the potential for the reallocation of the different forms of capital between the agents

in the different fields.

13.4 Globalization of the Pedagogic Device

The pedagogic device is as apparent in countries with very different social and political infrastructures as it is countries within the immediate sphere of influence of Anglo-American cultural hegemony. The apparently global operation of the pedagogic device within the field of medicine at every level has been locally confirmed by the author's experiences in two very distinct environments: teaching in a medical school in Kuwait and in a business school in Singapore.

Within the field of the production of medical knowledge, the medical faculty and teaching hospital, built and organized around the Anglo-American model, is a necessary step in the progressive development of any nation. Both Kuwait and Singapore have built parallel models of medical institutions. In Kuwait the Faculty of Medicine at Jabriyah was established in 1979, with the teaching hospital, Mubarek Al-Kabeer located next door. In Singapore the Faculty of Medicine at the National University was opened in 1972, with the National University Hospital next door.

However, if the architecture and conceptualization of the faculty and teaching hospital in developing nations is a product of the hegemonic 'pedagogic device', its political control still rests rigorously within the indigenous ministries and government offices of these countries. Less can be

said, however, for the recontextualizing field. The teaching within the medical faculty in developing countries such as Kuwait and Singapore is carried out along a curriculum, which although approved by the Ministries of Education within the respective counties, nevertheless slavishly adheres to the inherited curricular models of either the American or British realization of the pedagogic device.

Furthermore, it is rare that countries even as relatively advanced as Kuwait or Singapore can staff a medical school fully. There is a truly global influx of expatriate academic staff, by no means limited to American or British academics, although these are invariably represented. In Kuwait in 1990, working alongside the Kuwaitis, Americans and British were: French, Rumanian, Yugoslavian, Czechoslovakian, Sri Lankan, Indian, Pakistani and Sudanese academics, as well as a mix of different Arab nationals including Iraqis and Iranians. Thus, the faculty of the medical school in a near-developed country would appear to be a truly globalized and globalizing phenomenon.

The same cannot be said, however, for the medical textbooks, especially those used in a medical school at a clinical and preclinical level. Not only are the medical textbooks which are selected for the courses in the medical faculty in the developing nations written and published exclusively in America and Britain (mainly the former), there are to the best of the author's knowledge no medical textbooks actually produced by developing and near-developed nations.

Certainly, the author's experience in Kuwait and Singapore would indicate that there is an almost total dependence for tertiary education on American originated publications. When this is combined with the observations made in the Chapter 4 regarding the global use of the Index Medicus as an indicator of access to medical journals, it can be seen that a pervasive cultural hegemony is operating world wide.

In the upper reaches of the educational field within medicine, national controls are loosened and there is even more direct control by the hegemonic culture of the accreditation of postgraduate diplomas. One of the reasons that a group of Kuwaiti consultants attended evening classes in research writing and presentation was in preparation for professional exams such as entry to the Royal College of General Practitioners (R.C.G.P.) and the Royal College of Surgeons (R.C.S.). These exams were monitored by and often actually taken in their country of origin, in this case Britain. Not only are foreign nationals severely disadvantaged when it comes to gaining access to elite professional cadres, the criteria of the gate-keeping mechanism are created and maintained exclusively outside the nation of origin.

In the recontextualizing field, also, in Kuwait there were a number of local medical journals being started either based in the Faculty of Medicine at the University of Kuwait, or in professional institutions such as the Kuwait Institute for Medical Specializations (KIMS). Although these were indigenous attempts to control the transmission of pedagogic

discourse within the field of medicine, nevertheless the social structure of the recontextualizationing field is still *modelled* upon that of the hegemonic Anglo-American device. Within these institutes, cadres of agents operated within the official recontextualizing field to select those texts which would pay dividends in terms of cultural capital within the local geographical context and which were to be transmitted within the recontextualizing field.

In the context of reproduction, where the paradigmatic text is the medical interview, it has to be noted that the dialogical framework of the medical interview is a culturally specific form of discourse, which focuses on a particular combination of observation (the medical gaze) and oral communication (confession) to effect the medical appraisal. The discursive modes used for the medical appraisal differ radically in other traditions of medicine which have either been recuperated historically in the pluralistic context of postmodern medical practice, or incorporated from other contemporary contexts in the global culture.

For example, in homeopathic consultations the homeopath rarely, if ever, actually examines the body for physical signs, but attempts to diagnose the 'whole person' through the dialogic encounter alone; on the other hand, the acupuncturist will literally 'feel' his or her way to diagnosis by gauging the pulse of the person concerned. The implications of this are twofold. Within the advanced capitalist countries a postmodern diversity of diagnostic techniques may threaten the

homogeneity of the medical interview. For some years now, certain G.P.s have already refused to adhere to the strict time frame laid down for the interview in general practice. On the other hand, where the 'pedagogic device' has colonized a developing country, the dialogical structure of the medical interview may supplant other, indigenous, modes of appraisal of medical conditions by an authorized personage.

13.5 Challenge and Resistance to the Pedagogic Device

One area of challenge and resistance to the hegemony of the pedagogic device whose importance is growing with respect to the 'discursive practice' of medicine is the historical recuperation and global dissemination of innovative forms of therapeutic practice.

Medicine is currently displaying a recognizably 'postmodern' tendency to reactivate certain ancient forms of medical practice. In this way, the process of globalization is proving to have a certain dialectical aspect. As the pedagogic device spreads, it cannot help but be influenced by aspects of the cultures with which it makes contact. Thus, in the case of medicine, there is an increasing challenge being faced by the device in the form of complementary medicines. Complementary medicine includes practices such as: homeopathy, herbalism, hypnotherapy, psychotherapy, acupuncture, reflexology, shiatsu and aromatherapy. Part of this interface arises from the globalizing tendencies of the medical field itself; and part

of it emerges from the recuperation of historically lapsed medical practices which is in keeping with pluralistic tendencies of postmodernism. Particular contradictions between 'conventional' and 'complementary' medicine exist in at least three areas.

First, conventional medicine sees the body is modelled as a set of discrete systems (the circulatory, nervous and lymphatic systems) and parts (the skeletal system opposed to the muscular system). It is the present author's contention that the division of the body into different systems and parts is related to the dominant socioeconomic model of capitalist societies, which entails a division of labour in the social organization of production. The schematization of the organic body therefore images the body politic. In contrast to this, the various modes of 'complementary' medicine tend to view body as an integrated whole rather than as a sum of the parts.

Secondly, conventional medicine employs invasive techniques for treatment either using synthetically produced pharmaceutical or high technology surgical procedures. On the other hand complementary medicines use long term, non-invasive treatment such as naturally produced herbs and drugs, as well as non-technological forms of treatment such as massage. In this respect, the multinational corporations that produce and market pharmaceutical products and high technology medical equipment face huge losses in the face of possible incursions by complementary therapeutic techniques.

Thirdly, in conventional medicine, the doctor is increas-

ingly becoming a functionary who at the lower levels of specialization allocates a drug regime and legislates for periods of time off work; and at a higher level simply removes offending parts of the body. As in the case of epilepsy, the patient may make contact with a number of medical agents in the course of diagnosis and treatment of a particular disease. However, in complementary medicine the relationship with one practitioner is the norm and more emphasis is placed on the therapeutic importance of this singular relationship. Therefore, within any one area of complementary medicine the relationship with one particular person in the role of doctor is the norm.

However, it can be possible within complementary medicine for the patient to have recourse to a number of different therapists at any one time if the patient is encouraged to select a particular combination of therapies appropriate for their condition and their emotional needs. In this respect, the unique personal needs of a patient are placed above their reduction to one normative model of the 'correct' approach to treatment.

In the present phase of capitalism, the pedagogic device appears to be being challenged by different modes of medical practice which are outside its scope and opposed to its most radical epistemological and practical assumptions. However, the pedagogic device seems to be employing the strategy of incorporating these within the pedagogic edifice itself through the 'pedagogization' of complementary medicines. Within the

respective spheres of complementary medical practice, there has been a burgeoning of training courses and school programmes seeking various forms of accreditation. First, simply for their own survival, complementary medicines have tended to look towards the criteria of conventional medicine for accreditation and the vetting of their programmes. In this respect, complementary medicines - like other 'genuine experiments of culture' - find themselves coming under pressure from the interplay of markets. There has also been a burgeoning of journals associated with the different disciplines, which subscribe to the editing and vetting systems that are employed within the recontextualizing field of the pedagogic device. But, finally, there are also signs that conventional medicine itself is seeking to incorporate complementary medicine within its own pedagogic edifice. For example, the University of Exeter has just set up the first Master's programme in complementary medicine.[15]

In these ways, complementary medicine is currently posing something of an alternative to the forms of 'discursive practice' which are embedded within the relaxation of the pedagogic device within the field of medicine. However, the pedagogic device also has the potential to colonize and incorporate forms of discursive practice which lie outside its domain. It remains to be seen whether complementary medicine is capable of effecting radical changes to the structure of the pedagogic device; or whether it, too, will succumb to market forces and become another instrument of orthodox medi-

cal pedagogy.

13.6 Conclusion

The pedagogic device is a symbol-system which has ideological effects. The chief of these is the maintenance of an asymmetry of power between classes and class fractions. This is enabled by the uneven distribution of cultural capital within the field of symbolic control. With the increasing spread of professionalization, it can be seen that the pedagogic device is becoming increasingly *the* dominant modality for the uneven allocation of resources within the modern capitalist sate. However, the pedagogic device also contains within its edifice the potential of conflict and contradiction as well as cohesion and homogeneity. In this respect, wherever the field of symbolic control become colonized by the pedagogic device, the potential always exists to challenge and resist its universal dominance.

Notes and References

1. Giddens (1979), p.188.

2. Foucault, M. (1984). The Order of Discourse. In R. Young (Ed.), Untying the Text (pp. 48-78). London: Methuen.

3. Bernstein (1990), p.185.

4. Outlined in Chapter 4, Section 3.

5. Bell (1974), in Turner, B.S. (1984). The Body and Society: Explorations in Social Theory. Oxford: Basil Blackwell, p.138.

6. Turner (1987).

7. Turner (1987), p. 135.

8. After Jamous and Peloille (1970), in Turner (1987), p.135.

9. Jamous and Peloille (1970), in Turner (1987).

10. Turner (1987), p. 136.

11. Wilensky (1963) in Turner, p.137.

12. Turner (1987), p.142.

13. Turner, (1987) p.154.

14. Turner (1987), p.138.

15. John Hudson, Bristol hypnotherapist (personal communication).

BIBLIOGRAPHY

Adams Smith, D.E. (1984). Medical discourse: aspects of author's comment. The ESP Journal, 3, 25-36.

Adams Smith, D.E. (1987). Variation in field-related genres. E.L.T. Journal, 1, 10-32.

Althusser, L. (1969). For Marx. London: Allen Lane.

Althusser, L. (1971). Ideology and the state ideological apparatuses. Lenin and Philosophy and other Essays. London: New Left Books.

American Psychological Association. (1983). Publication manual of the American Psychological Association. Hyattsville: American Psychological Association.

Apter, D.E. (Ed.). (1964). Ideology and Discontent. New York: The Free Press of Glencoe.

Armstrong, D. (1983). Political Anatomy of the Body. Cambridge: Cambridge University Press.

Arney, W. R. & Bergen, B.J. (1984). Medicine and the Management of Living. Chicago: University of Chicago Press.

Atkinson, P. (1985). Language, Structure and Reproduction. An Introduction to the Sociology of Basil Bernstein. London: Methuen.

Austin, J.L. (1962). How to do things with words. Oxford: Oxford University Press.

Bakhtin, M.M. (Trans. Emerson, C. & Holquist, M.). (1981). The Dialogic Imagination. Austin: University of Texas Press.

Balint, M. (1971). The Doctor, His Patient, and the Illness. London: Pitman.

Bazerman, C. (1980). Laboratory life: the social construction of scientific facts (review). Social Studies of Science Newsletter, 5, 14-19.

Bazerman, C. (1990). Discourse Analysis and Social Construction. Annual Review of Applied Linguistics, 11, 77-83.

Beauvais, P.J. (1989). A speech act theory of metadiscoruse. Written Communication, 6(1), 11-31.

Belanger, M. (1982). A preliminary analysis of the structure of the discussion sections in ten neuroscience journal articles. Mimeo.

Berlin, I. (1967). The Hedgehog and the Fox: an essay on Tolstoy's view of history. London: Weidenfield & Nicholson.

Bernauer and Ramussen (Eds.). (1988). The Final Foucault. Cambridge, Massachusetts: M.I.T. Press.

Bernauer, J. (1981a). Foucault at the College de France I. Philosophy and Social Criticism, 8, 235-242.

Bernauer, J. (1981b). Foucault at the College de France II. Philosophy and Social Criticism, 8, 352-357.

Bernauer, J.W. (1990). Michel Foucault's Force of Flight: towards an ethics for thought. New Jersey: Humanities Press International.

Bernstein, B. (1971). Class,Codes and Control, vol. I. London: Routledge & Keegan Paul.

Bernstein, B. (1977). Class, Codes and Control, vol. III. London: Routledge & Keegan Paul.

Bernstein, B. (1990). Class, Codes and Control, vol. IV. London: Routledge & Keegan Paul.

Bernstein, B. (1990). The social constitution of pedagogic discourse. In Class, Codes and Control, vol. IV (pp.165-219). London: Routledge & Keegan Paul.

Bernstein, R. (1976). The Restructuring of Social and Political Theory. Oxford: Basil Blackwell.

Bloor, M. (1976). Professional Autonomy and Client Exclusion. In M. Wadsworth, & D. Robinson, D. (Eds.). Understanding Everyday Medical Life (pp.13-31). London: Martin Robertson.

Booth, V. (1981). Writing a Scientific Paper and Speaking at Scientific Meetings. London: Biomedical Society.

Booth, W.R. (1981). Manual for Authors and Editors. New York: Lange Medical Publication.

Bouchard, D.F. (Ed.). (1977). Language, Counter-Memory, Practice. Oxford: Basil Blackwell.

Bourdieu, P., & Passeron, J. (1977). Reproduction in Education, Society and Culture. Cambridge: Cambridge University Press.

Bourdieu, P. (1977). Outline of a Theory of Practice. Cambridge: Cambridge University Press.

Bourdieu, P. (1990). In Other Words. Cambridge: Polity Press.

Bourdieu, P. (1991). Language and Symbolic Power. Cambridge: Polity Press.

Bourdieu, P.(Trans. R. Nice.) (1984). Distinction. London: Routledge & Kegan Paul.

Bruce, N. (1984). Rhetorical Constraints and Information Structure of Medical Research Writing. E.M.P. Newsletter, 1(2), 5-52.

Bwala, B.A., Gardner-Thorpe, C. (1990). Intractable epilepsy. British Journal of Clinical Practice, 44(3), 106-110.

Byrne, P.S., & Long, B.E.L. (1984). Doctors Talking to Patients. London: Royal College of General Practitioners.

C.B.E. Style Manual Committee.(1983). C.B.E. Style Manual. Bethesda Md: Council of Biology Editors.

Calnan J, & Barabas A. (1972). Speaking at Medical Meetings. London: Heinemann.

Calnan J, & Barabas A. (1972). Writing Medical Papers. London: Heinemann.

Cassell, E. (1985). Talking with Patients Vol. 1. Massachusetts. M.I.T.

Cassell, E. (1985). Talking with Patients Vol. 2. Massachusetts. M.I.T.

Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge, Mass.: MIT Press.

Christer, L. & Nordmann, M. (Eds.). (1989). Specialized Language: from humans thinking to thinking machines. Clevedon: Multilingual Matters Ltd.

Coles, R. (1991). Foucault's dialogical artistic ethos. Theory, Culture and Society, 8, 99-120.

Comrie, B. (1985). Tense. Cambridge: Cambridge University Press.

Cook, D. (1987). The turn towards subjectivity: Michel Foucault's legacy. Journal of British Soc Phen, 18, 215-225.

Coulthard, R.M. (1970). An Empirical Investigation of Restricted and Elaborated Codes. Ph.d. thesis. University of Birmingham, UK.

Coulthard, M., & Ashby, M.C. (1976). The analysis of medical interviews. In M. Wadsworth, & D. Robinson, D. (Eds.). Understanding Everyday Medical Life (pp.13-31). London: Martin Robertson.

Coulthard, M., & Montgomery M. (Eds.). (1981). Studies in Discourse Analysis. London: Routledge & Keegan Paul.

Coulthard, M. (1985). An Introduction to Discourse Analysis. London: Longman.

Coulthard, M. (Ed.). 1986. Talking about Text. Birmingham, U.K. English Language Research, Birmingham University.

Coulthard, M., & Ashby, M.C. (1975). Talking with the doctor. Journal of Communication, 25, 3, 240-7.

Crookes, G. (1986). Towards a validated analysis of scientific text structure. Applied Linguistics, 7(1), 57-70.

Cummings, M.M. (1978). The National Library of Medicine. In K.S. Warren (Ed.), Coping with the biomedical literature explosion, a qualitative approach (pp.161-181). New York: Rockefeller Foundation.

Dakari, M. (1986). Foucault's journey to Greece. Telos, 67(Spring), 70-86.

Davidson, A. (1986). Archaeology, Genealogy, Ethics. In D.C. Hoy, Foucault. A Critical Reader (pp.221-235). Oxford: Basil Blackwell.

Day, R. A. (1988). How to write and Publish a Scientific Paper. Phoenix: The Oryx Press.

Deleuze, G. (1988). Foucault. Minneapolis: University of Minneapolis Press.

Dews, P. (1989). The return of the subject in the late Foucault. Radical Philosophy, 51(Spring), 37-41.

Dreyfus, H.L., & Rabinow, P. (1982). Michael Foucault. Beyond Structuralism and Hermeneutics. Brighton: Harvester.

Dubois, B.L. (1982). The construction of noun phrases in biomedical journal articles. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.49-67). Copenhagen. Copenhagen School of Economics.

Dudley, H. (1977). The Presentation of Original Work in Medicine and Biology. Edinburgh: Churchill Livingstone.

Dudley-Evans, T. (1986). Genre analysis: an investigation of the introduction and discussion sections of M.Sc. dissertations. In M. Coulthard (Ed.), Talking about Text. Birmingham, U.K. English Language Research, Birmingham University.

Durkheim, E. (Trans. Swain, J.W.). (1982). Elementary Forms of the Religious Life. London: Allen and Unwin.

Eagleton, T. (1991). Ideology. London: Verso.

Eco, U. (1976). A Theory of Semiotics. Bloomington: Indiana University Press.

Een, J. A. (1982). Tense usage in reporting research in geotechnical writing. In Working papers in ESL, 2 (pp. 72-91). Minneapolis. University of Minnesota.

Eribon, D. (1992). Michel Foucault. Faber and Faber: London.

European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male transmission of HIV in 563 stable couples in 316 stable couples. British Medical Journal, 305, 809-813.

Falzon, C. (1993). Foucault's Human Being. Thesis Eleven, 34, 1-17.

Featherstone, M. (1982). Lifestyle and Consumer Culture. Theory, Culture and Society, 4, 1, 55-69.

Featherstone, M., Hepworth, M., & Turner, B.S. (Eds.). 1990. The Body: Social Process and Cultural Theory. London: Sage.

Featherstone, M. (1991). Consumer Culture and Postmodernism. London: Sage.

Firth, J.R. (1957). Papers in Linguistics 1934-1951. Oxford: Oxford University Press.

Flynn, T. (1985) Truth and subjectification in the later Foucault. The Journal of Philosophy, 4, 531-541.

Foucault, M. (1967). Madness and Civilization. London: Tavistock.

Foucault, M. (1970). The Order of Things. London: Tavistock.

Foucault, M. (1972). The Archaeology of Knowledge. London: Tavistock.

Foucault, M. (1973). The Birth of the Clinic. London: Tavistock.

Foucault, M. (1977). Discipline and Punish. Harmondsworth: Penguin.

Foucault, M, (Ed.). (1978). I, Pierre Riviere, having slaughtered my mother, my father, my sister. New York: Pantheon.

Foucault, M. (1984). The Order of Discourse. In R. Young (Ed.), Untying the Text (pp. 48-78). London: Methuen.

The ethic of care for the self as a practice of freedom. trans. J.D. Gauthier. Philosophy and Social Criticism, 12, 2-3, 112-131.

Foucault, M. (Trans. J. Gauthier). (1984). The ethic of care for the self as a practice of freedom. trans. J.D. Gauthier. Philosophy and Social Criticism, 12, 2-3, 112-131.

Foucault, M. (1984). The History of Sexuality: an introduction. Harmondsworth: Penguin.

Foucault, M. (Trans. Thomas Levin and Isabelle Lorenz). (1985). Final interview. Raritan, 5(1), 1-13.

Foucault, M. (1987). The Use of Pleasure. Harmondsworth: Penguin.

Foucault, M. (1988). Care of the Self. Harmondsworth: Penguin.

Fowler, R., Hodge, R., Kress, G., & Trew, T. (1979). Language and Control. London: Routledge and Kegan Paul.

Fowler, R. (1991). Language in the News. London and New York: Routledge.

Freidson, E. (1973). Professionalization and the Organization of Middle-Class Labour in Postindustrial Society. In P. Halmos (Ed.) Professionalization and Social Change (pp. 47-61). The Sociological Review Monograph, No. 20, Keele.

Gane, M. (Ed.). (1986). Towards a Critique of Foucault. London: Routledge and Keegan Paul.

Garfield, E. (1978). The Science Citation Index as a quality information filter. In K.S. Warren (Ed.), Coping with the biomedical literature explosion, a qualitative approach (pp.183-201). New York: Rockefeller Foundation.

Geertz, C. (1964). Ideology as a Cultural System. In D.E. Apter, Ideology and Discontent (pp.47-75). New York. The Free Press of Glencoe.

Geertz, C. (1983). Common Sense as a Cultural System. In Local Knowledge (pp. 73-93). New York: Basic Books.

Geertz, C. (1983). Local Knowledge. New York: Basic Books.

Giddens, A. (1979). Central Problems in Social Theory. London: Macmillan Educational.

Giddens, A. (1991). Modernity and Self-Identity. Cambridge: Polity Press.

Gilbert, G.N. and Mulkay. (1984). Opening Pandora's Box: a sociological analysis of scientific discourse. Cambridge: Cambridge University Press.

Glasgow University Faculty of Medicine. (1990). MBChB Course Compendium; Information for First Year Students. Glasgow: Glasgow University.

Goffman, E. (1961). Encounters. Indianapolis: Bobbs-Merrill.

Goffman, E. (1967). Interaction Ritual. New York: Pantheon.

Goffman, E. (1973). Asylums. Harmondsworth: Penguin.

Goffman, E. (1974). Frame Analysis. Cambridge, Massachusetts: Harvard University Press.

Goffman, E. (1981). Forms of Talk. Pennsylvania: University of Pennsylvania Publications.

Goffman, E: (1982). The Presentation of Self in Everyday Life. Harmondsworth: Penguin.

Goh, C.T. (1993, June 21). Concern for Population Trends. Straits Times, p.1.

Golding, W. (1955). The Inheritors. London: Faber.

Gordon, C. (Ed.). (1980). Power/Knowledge. Brighton. Harvester Press.

Greer, S., Moorey, S., Baruch, J.D.R., Watson, M., Robertson, B.M., Mason, A., Rowden, L., Law, M.G., Bliss, J.M. (1992) Adjuvant psychological therapy for patients with cancer: a prospective randomized trial. British Medical Journal, 304, 675-680.

Grice, P. (1957). Meaning. Philosophical Review, (July), 377-388.

Guyton (1991). Textbook of Medical Physiology.(8th ed.) Philadelphia: Saunders.

Guyton, A.C. (1991). Blood flow through the systemic circulation and its regulation. In Anatomy and Physiology (pp.451-460). (8th ed.) Philadelphia: Saunders.

Guyton, A.C. (1991). The skeletal system and its joints: 1. General structure; bone as tissue; the skull. In Anatomy and Physiology (pp.87-95). (8th ed.) Philadelphia: Saunders.

Habermas, J. (1972). Knowledge and Human Interests. London: Heinemann.

Halliday, M.A.K. (1961). Categories of the Theory of Grammar. Word, 17, 241-292.

Halliday, M.A.K. (1967a) Notes on transitivity and theme in English, Part 1. Journal of Linguistics, 3(1), 37-81.

Halliday, M.A.K. (1967b) Notes on transitivity and theme in English, Part 2. Journal of Linguistics, 3(2), 199-244.

Halliday, M.A.K. (1968) Notes on transitivity and theme in English, Part 3. Journal of Linguistics, 4(2), 179-215.

Halliday, M.A.K. (1973). Explorations in the Function of Language. London: Edward Arnold.

Halliday, M.A.K. & Hasan, R. (1976). Cohesion in English. London: Longman.

Halliday, M.A.K. (1978). Language as a Social Semiotic. London: Edward Arnold.

Halliday, M.A.K. (1985). An Introduction to Functional Grammar. London: Edward Arnold.

Halmos, P. (Ed.) Professionalization and Social Change (pp. 47-61). The Sociological Review Monograph, No. 20, Keele.

Heslot, J. (1982). Tense and other indexical markers in the typology of scientific texts in English. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. (pp.83-103). Copenhagen. Copenhagen School of Economics.

Hill, S.S., Soppelsa, B.F., & West, G.K. (1982). Teaching E.L.S. students to read and write experimental research papers. TESOL Quarterly 16, 333-47.

Hoedt, J., Lundquist, Picht & Quistgaard. (Eds.). (1982). Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on L.S.P. Copenhagen. Copenhagen School of Economics.

Hopkins, A. (1985). An investigation into the organizing and organizational features of published conference papers. Unpublished M.A. dissertation, University of Birmingham, UK.

Hopkins, A. & Dudley-Evans, T. (1988). A genre-based investigation of the discussion sections in articles and dissertations. English for Specific Purposes, 7, 113-122.

Hoskin, K. (1994). Boxing clever: for, against and beyond Foucault in the battle for accounting theory. Critical Perspectives on Accounting Theory, 5, 57-85.

Hoy, D.C. (1986). Foucault: A Critical Reader. Oxford: Basil Blackwell.

Huckin, T.N. (1986). Surprise value in scientific discourse. Paper presented at the CCC Convention, Atlanta, Ga.

Hutchins, J. (1977). On the Structure of Scientific Texts. U.A.E. Papers in Linguistics, 5, 18-39.

Illich, I. (1977). Medical Nemesis. New York: Random House.

Inglis, F. (1985). The Management of Ignorance. Oxford: Basil Blackwell.

Inglis, F. (1988). Popular Culture and Political Power. London: Harvester.

Jacoby, S. (1987). References to other researchers in literary research articles. E.L.R. Journal, 1, 33-78.

Jewson, N. (1976). The Disappearance of the Sick-Man from Medical Cosmology, 1770-1880. Sociology, 10, 225-44.

Karni, A.M., Farah, S., Khadadah, M., & Al-Duwaisan, H. (1990). A unique case of Munchausen's syndrome. British Journal of Clinical Practice, 44(11), 699-701.

Kesey, K. (1976). One Flew Over the Cuckoo's Nest. Harmondsworth: Penguin.

Kress, G.R. (Ed.). (1976). System and Function in Language: selected papers by M.A.K. Halliday. Oxford: Oxford University Press.

Kress, G.R. (1979). Language and Ideology. London: Routledge & Kegan Paul.

Kress, G.R. (1989). Linguistic Processes in Sociocultural Practice. Oxford: Oxford University Press

Kritzman, L.D. (Ed.). (1988). Politics, Philosophy, Culture. London: Routledge.

Kuhn, T. (1970). Structure of Scientific Revolutions. Chicago: University of Chicago Press.

Lackstrom, J.E., Selinker, L. & Trimble, L.P. (1972). Grammar and technical English. English Teaching Forum, X(5), (September-October), 3-14.

Lackstrom, J.E., Selinker, L. & Trimble, L.P. (1973). Technical rhetorical principles and grammatical choice. T.E.S.O.L. Quarterly, 7, 127-136.

Latour, B., & Woolgar S. (1979). Laboratory Life. The social construction of scientific facts. Beverly Hills, Cal.: Sage Publications.

Lemert and Gillan. (1982). Michel Foucault. New York: Columbia University Press.

Locke, S. (1977). Better Medical Writing. London: Pitman.

Locke. S. (1988). Editor's Note. British Medical Journal, 297, 12.

Luke, A. (1989). Open and Closed Texts: the ideological/semantic analysis of textbook narratives. Journal of Pragmatics, 13(1), 53-80.

Luther, M.H., Gutman, H., & Hutton, P. H. (1988). Technologies of the Self. London: Tavistock.

Lyons (1968). Introduction to Theoretical Linguistics. London: Cambridge University Press

Lyons, J. (1977). Semantics (Vols. 1-2). London: Cambridge University Press

Macdonnell, D. (1986). Theories of Discourse. Oxford: Basil Blackwell.

Maher, J. (1986a). English for medical purposes. Language Teaching, 19, 112-145.

Maher, J. (1986b). The development of English as the International Language of Medicine. Applied Linguistics, 7(2), 206-218.

Major-Poetzl, P. (1983). Michel Foucault's Archaeology of Western Culture. Chapel Hill: University of North Carolina.

Malcolm, L. (1987). What rules govern tense usage in scientific articles? English for Specific Purposes, 6, 31-44.

Malinowski (1923). The problem of meaning in primitive languages. In Ogden, C.K. & Richards, I.A., The Meaning of Meaning. London: Kegan Paul.

Mannheim, K. (1936). Ideology and Utopia. New York: Harcourt, Brace and World.

Marx, K., & Engels, F. (1965). The German Ideology. London: Lawrence and Wishart.

Matthiessen, C. (1990). Lexicogrammatical Cartography: English Systems. Draft 4. Unpublished Manuscript: University of Sydney.

McKinlay, K. (1984). An analysis of discussion sections in medical journal articles. Unpublished M.A. dissertation. University of Birmingham, UK.

Merquior, J.G. (1985). Foucault. London: Fontana.

Merquior, J.G. (1986). Western Marxism. Paladin. London.

Muijen, M., Marks, I., Connolly, J., & Audini, B. (1992). Home based care and standardized hospital care for patients with severe mental illness: a randomized controlled trial. British Medical Journal, 304, 749-54.

Myers, G. (1985). The social construction of two biologists' proposals. Written Communication, 2(3), 219-245.

National Library of Medicine. Index Medicus. Washington, D.C.

Navarro, V. (1976). Medicine Under Capitalism. New York: Prodist.

Newble, D., & Cannon, R. (1987). A Handbook for Medical Teachers. Lancaster, Boston: M.T.P.

Norris, C. (1993). The Truth about Postmodernism. Oxford: Blackwell.

Oster, S. (1981). The use of tenses in reporting past literature in E.S.T. In Selinker, Tarone & Hazeli.(Eds.), English for Academic and Technical Purposes (pp.76-90). Rowley, Mass: Newburg House.

Patel, A., & Creery, D. (1990). Pneumatosis intestinalis in AIDS: an unreported complication. British Journal of Clinical Practice, 44(11), 768-769.

Pecheux, M. (1982). Language, Semantics and Ideology. London: Macmillan.

Peng, J. (1987). Organization features in chemical engineering research articles. ELR Journal, 1, 79-116.

Pitcher, G. (Ed.). (1968). Wittgenstein: The Philosophical Investigations. London: Macmillan.

Popper, K. (1962). The Logic of Scientific Discovery. London: Hutchinson.

Poster, M. (1987). Foucault, Marxism, History. Cambridge: Polity Press.

Publisher's Note. (1990). British Journal of Clinical Practice, 44(12).

Rabinow, P. (Ed.). (1984). The Foucault Reader. Harmondsworth: Penguin.

Racevskis, K. (1983). Michel Foucault and the Subversion of Intellect. Ithaca: Cornell University Press.

Rang, H.P., & Dale, M.M. (1986). Drugs used in treating motor disorders: epilepsy, Parkinsonism and spasticity. In Pharmacology (pp.530-539). Edinburgh: Churchill Livingstone.

Reeves, C. (1990). Establishing a phenomenon: the rhetoric of early medical reports on AIDS. Written Communication, 7(3), 393-416.

Ricoeur, P. (Ed. J. Thompson). (1989). Hermeneutics and the Human Sciences. Cambridge: Cambridge University Press.

Ricoeur, P. (1974). Existence and hermeneutics. In The Conflict of Interpretations (pp.12-12). Evanston: Northwestern University Press.

Saussure, F. de. (1974). Course in General Linguistics. London: Fontana.

Searle, J.R. (1969). Speech Acts. Cambridge: Cambridge University Press.

Selinker, L. & Trimble, L.P. (1976). Scientific and technical writing: the choice of tense. English Teaching Forum, (October), 22-26.

Selinker, L., Tarone, E. & Hazeli, V.(Eds.). (1981). English for Academic and Technical Purposes. Rowley, Mass: Newburg House.

Sheen, A.P. (1982). Breathing Life into Medical Writing. St. Louis: Mosley.

Sheridan, A. (1980). Michel Foucault: The Will to Truth. London: Tavistock.

Shilling, C. (1993). The Body and Social Theory. London: Sage.

Silverman, D. (1987). Communication and Medical Practice. London: Sage.

Sinclair, J. McH., & Coulthard, M.(1975). Towards an Analysis of Discourse. Oxford: Oxford University Press.

Skinner, Q. (Ed.). (1985). The Return of Grand Theory in the Human Sciences. Cambridge: Cambridge University Press.

Smart, B. (1983). Foucault, Marxism, Critique. London: Routledge and Keegan Paul.

Smart, B. (1985). Michel Foucault. London: Tavistock.

Sontag, S. (1983). Illness as Metaphor. Harmondsworth: Penguin.

Sontag, S. (1989). Aids and Its Metaphors. New York: Farrar, Strauss and Giroux.

Spalton, D.J., Sever, P.S., & Ward, P.D. (1982). 100 Case Histories for the MRCP. London: Churchill Livingstone.

Staheli, L.T. (1985). Speaking and Writing for the Physician. New York: Raven Press.

Stein, M.D. (1985). Instructions for Authors in Biomedical Journals. Orlando: Academia Press .

Strong, P. (1979). The Ceremonial Order of the Clinic. London: Routledge.

Stryer, L. (1988). DNA: genetic role, structure and replication. In Biochemistry (pp.559-573). (3rd ed.). San Francisco: W.H. Freeman.

Stryer. (1988). Biochemistry. (3rd ed.) San Francisco: W.H. Freeman.

Stubbs, M. (1983). Discourse Analysis. Oxford: Basil Blackwell.

Swales, J. & Najjar, H. (1987). The writing of research article introductions. Written Communication, 4(2), 175-191.

Swales, J. (1981a). Aspects of Article Introductions. Birmingham, UK: The University of Aston Language Studies Unit.

Swales, J. (1981b). The Function of One Type of Particle in a Chemistry Textbook. In L. Selinker, E. Tarone, & V. Hazeli (Eds.). English for Academic and Technical Purposes (pp.40-51). Rowley, Mass: Newburg House.

Swales, J. (1986). Citation Analysis and Discourse Analysis. Applied Linguistics, 7(1), 39-56.

Swales, J. (1990). Genre Analysis. English in academic and research settings. Cambridge: Cambridge University Press.

Synnott, A. (1993). The Body Social: Symbolism, Self and Society. London and New York: Routledge.

Tadros, A. (1985). Prediction in text. Birmingham UK: The University of Birmingham, English Language Research.

Tarone, E., Dwyer, S. & Icke, V. (1981). On the use of the passive in two astrophysics journal papers. The ESP Journal, 1, 123-40.

Taylor, C. (1985). Philosophical Papers. Cambridge: Cambridge University Press.

Taylor, C. (1986). Foucault on Freedom and Truth. In D.C. Hoy, Foucault. A Critical Reader (pp. 69-103). Oxford: Basil Blackwell,

Taylor, C. (1989). Sources of the Self. Cambridge, Mass.: Harvard University Press.

Taylor, C. (1991). The Ethics of Authenticity. Cambridge, Mass: Harvard University Press.

Titmuss, R.M. (1970). The Gift Relationship. London: Allen & Unwin.

Tomlin, R.S. 1981. Clause-level syntax and information types in EST discourse (mimeo).

Trimble, M.T. & Trimble, L. (1982). Rhetorical-grammatical features of scientific and technical texts as a major factor in E.S.P. communication. In J. Hoedt et al. (Eds.), Pragmatics and L.S.P.: Proceedings of the 3rd European Symposium on (pp.199-217). Copenhagen. Copenhagen School of Economics.

Turner, B.S. (1984). The Body and Society: Explorations in Social Theory. Oxford: Basil Blackwell.

Turner, B.S. (1987). Medical Power and Social Knowledge. London: Sage.

Verity, C.M., Ross, E.M., & Golding, J. (1992). Epilepsy in the first 10 years of life: findings of the child health and education study. British Medical Journal, 305, 857-861.

Wadsworth, M., & Robinson, D. (Eds.). (1976). Understanding Everyday Medical life. London: Martin Robertson.

Waitzkin, H.B., Waterman, B. (1974). The Exploitation of Illness in Capitalist Society. Indiana: Bobbs-Merrill.

Warren, K.S. (Ed.). (1978). Coping with the biomedical literature explosion: a qualitative approach. New York: Rockefeller Foundation.

Watson, J. D. (1968). The Double Helix. London: Weidenfeld and Nicolson.

Weissberg, R. (1984). Given and new: paragraph development models for scientific English. TESOL Quarterly, 18, 485-500.

West, P. (1976). The Physician and the Management of Childhood Epilepsy. In M. Wadsworth, & D. Robinson, D. (Eds.). Understanding Everyday Medical Life (pp.13-31). London: Martin Robertson.

White, A., Harries, D., & Allen, S.C. (1990). Anorexia nervosa in the elderly: a case report and review of the literature. British Journal of Clinical Practice, 44(11), 630-631.

Williams, R. (1977). Marxism and Literature. Oxford: Oxford University Press.

Williams, R. (1983). Keywords. Glasgow: William Collins.

Williams, R. (1983). Towards 2000. Harmondsworth: Penguin.

Windgard, P. (1981). Some verb forms and functions in six medical texts. In English for Academic and Technical Purposes. Selinker, Tarone & Hazeli.(Eds.), 53-64.

Winkler, A.C., & McCuen, J.R. (1985). Writing the Research Paper: a Handbook. New York: Harcourt Brace Johanovich.

Wittgenstein, L. (1972). Philosophical Investigations. Oxford: Blackwell.

Wolin, R. (1986). Foucault's aesthetic decisionism. Telos, 19(67), 70-86.

Ziman, J. (1968) Public Knowledge. Cambridge: Cambridge University Press.

Zola, I.K. (1972). Medicine as an institution of social control: the medicalizing of society. Sociological Review, 20(4), 487-504.

APPENDIX A: Synopsis of nomographic texts (Chapter 7)

Four medical research papers (nomographic texts) were selected from the British Medical Journal (B.M.J.) volumes 304-305 (first two quarters of 1992). Selection was based on topical rather than structural criteria so that the formal basis of topics germane to the social sciences could be examined. The topics of these papers were as follows.

Text E: Epidemiological study

Verity, C.M., Ross, E.M., & Golding, J. (1992). Epilepsy in the first 10 years of life: findings of the child health and education study. British Medical Journal, 305, 857-861.

This text is a prospective study of the occurrence of epilepsy in a cohort derived from the 1970 British births survey, which was part of the child health and education study. 14,902 neonatal survivors were assessed at ten years to identify children with afebrile seizures, classify the seizures and document their progress in the first 10 years of life. Out of this group 84 children were identified as having afebrile seizures, and 63 were classified as having epilepsy. The seizures were classified into different types and the results claimed to be "probably representative of seizure patterns in the general population"(p.857).

Text F: Clinical trial

Greer, S., Moorey, S., Baruch, J.D.R., Watson, M., Robertson, B.M., Mason, A., Rowden, L., Law, M.G., Bliss, J.M. (1992) Adjuvant psychological therapy for patients with cancer: a prospective randomized trial. British Medical Journal, 304, 675-680.

This text assesses the psychological health of the patients in the study in separation from the concept of cure; and in so doing tantalizingly refuses to make a connection between cure and psychological well-being. The separateness and exclusivity maintained between categories such body and mind and the disciplines of physiology and psychology, are an essential part of the intellectual practice of medical report writing. The objective of the paper is "to determine the effect of adjuvant psychological therapy on the quality of patients with cancer"(p.675), carried out through a prospective randomized controlled trial. The outcome of the research agreed that the therapy "produces significant improvement in various measures of psychological distress among cancer patients"(p.675). While the effects of the therapy generally seemed to persist at eight weeks, there was some lack of persistence at the 4 month follow up. A 12 month follow up had yet to be carried out when the paper went to press. Measurement of the effects of the therapy upon the progress of the illness was not attempted.

Text G: Epidemiological study

European Study Group on Heterosexual Transmission of HIV. (1992). Comparison of female to male transmission of HIV in 563 stable couples in 316 stable couples. British Medical Journal, 305, 809-813.

This paper is the report of a study carried out by the European Study Group on the Heterosexual Transmission of HIV. It has as its objective, "to identify risk factors for heterosexual transmission of HIV and to compare the efficiency of male to female and female to male transmission"(p.809). The outcome suggests that the rate of male to female transmission of the disease was greater (20%) than the rate of female to male transmission (12%).

Text H: Clinical trial

Muijen, M., Marks, I., Connolly, J., & Audini, B. (1992). Home based care and standardized hospital care for patients with severe mental illness: a randomized controlled trial. British Medical Journal, 304, 749-54.

Text H compares "the efficacy of home based care with standard hospital care in treating serious mental illness"(p.749). Its analysis concludes somewhat tentatively, in line with current U.K. government policy, that home based care may offer some "slight advantages" over hospital based care. However, it is also careful to state at the end that the applicability of home care does depend on other factors which include staffing levels and resources(p.754).

APPENDIX B: Modified model for Article Introductions

Move 1 **Establishing a territory:**

Step 1 Claiming centrality

and/or

Step 2 Making topic generalizations

Move 2 **Reviewing items of previous research**

Move 3 **Establishing a niche:**

Step 1A Making a counterclaim

or

Step 1B Indicating a gap in the secondary source

or

Step 1C Raising a question about the source

or

Step 1D Indicating continuation of research tradition

Move 4 **Occupying the niche:**

Step 1 Outlining purposes

and/or

Step 2 Announcing present research

Step 3 Announcing principal findings

Step 4 Indicating research article structure

APPENDIX C: Methods Section (Text F)

S1. Subscale scores were analysed separately at two and four months.

S2. The analysis presented in Table IV compares treatments, using the change in scores from baseline values immediately before randomization.

S3. Confidence values for treatment effect were based on the t-distribution.

S4. p Values were computed using the non-parametric Mann-Whitney test.

S5. No adjustment was made to p values or confidence intervals to allow for the multiple comparisons performed.

S6. Analysis of covariance was used to investigate the possibility of different responses, to therapy in subgroups defined by sex, age (split at median), stage of disease, and concurrent chemotherapy.

S7. Numbers of patients receiving antidepressants were very small and could not affect the results.

APPENDIX D: Synopsis of idiopathic texts (Chapter 8)

Four medical case history reports were selected from Volume 44 of the British Journal of Clinical Practice (1990). Initially the British Medical Journal was scanned from 1990-1992 for case history reports, but it appeared that they had stopped being published in 1987. The 1990 volume of the B.J.C.P. from which the four case histories below were taken was also the last in which case histories were going to be published in that journal; and the December issue for that year (44,11) acted as a kind of clearing house for the backlog of papers submitted. From 1990 on, the B.J.C.P.'s editorial policy was to publish only epidemiological research papers. As with the nomographic texts, selection was based on cases featuring issues of topical interest for the social sciences which were presented in roughly equivalent formats. Papers were chosen and their order of examination arranged so that their sequencing was, as far as was possible, topically parallel to the sequencing of the epidemiological research papers.

Text I: Bwala, B.A., Gardner-Thorpe, C. (1990). Intractable epilepsy. British Journal of Clinical Practice, 44(3), 106-110.

The texts in this thesis have a certain preoccupation with epilepsy, due to the availability of suitable texts and the significance of earlier research, in particular the making available of the transcripts of interviews carried out by Pat West in his 1974 E.S.C.R. funded research into childhood epilepsy (West, 1976), as well as the historical interest of the site the epileptic patient has tended to inhabit, an ill-defined zone somewhere between mental and physiological illness.

Whereas the other three types of text that we examine which deal with epilepsy emphasize the ability of the medical sciences to treat the illness, this paper displays one patient for whom medical science could do little. It describes a 26-year-old woman who has had epileptic seizures since the age of five. She "was not suitable for neurosurgical intervention because of the diffuse nature of her seizure" and did not respond to "cerebellar stimulation" (p.106). Several different types of pharmaceutical treatments were tried, but these made no radical difference to her condition. In time she became "mentally retarded and appeared to have become educationally subnormal". This case displays something of the paradoxical status of the epileptic patient vis-a-vis physiological and mental illness.

Text J: White, A., Harries, D., & Allen, S.C. (1990). Anorexia nervosa in the elderly: a case report and review of the literature. British Journal of Clinical Practice, 44(11), 630-631.

Anorexia nervosa is classically seen as a slimmer's disease normally associated with young people and the pressures of a "consumer culture" on the construction of adolescent identity. Text J gives an account of the diagnosis of anorexia in an elderly woman. This paper looks at techniques of differential diagnosis, and argues that the occurrence of anorexia in the elderly is more common than has hitherto been acknowledged.

Text K: Patel, A., & Creery, D. (1990). Pneumatosis intestinalis in AIDS: an unreported complication. British Journal of Clinical Practice, 44(11), 768-769.

This is a short paper which reports a new complication, pneumatosis intestinalis, in a patient suffering from AIDS. Details of the condition, its diagnosis and its treatment are given. The patient died one month after being discharged from hospital.

Text L: Karni, A.M., Farah, S., Khadadah, M., & Al-Duwaisan, H. (1990). A unique case of Munchausen's syndrome. British Journal of Clinical Practice, 44(11), 699-701.

In a thesis which deals about the discursive construction of medical knowledge, it was impossible not to include this account of a "factitious illness". An 18-year-old Yemeni woman presented at Mubarek al Kabeer Hospital in Kuwait "with bleeding from many sites; repeated subcutaneous emphysema of the face, orbit and upper chest; ulcers on the tongue and dermatitis autogenica"(p.699). After a long period of time during which no conclusive diagnosis was made, she was caught trying to inject herself with air. After a show of aggression and a subsequent period of confinement in a psychiatric ward, the young woman eventually returned to Yemen. In the course of the investigation, her father had revealed that she was being forced to marry a suitor against her wishes.

APPENDIX E: Synopsis of Recontextualized Texts (Chapter 9)

Text M: Pharmacology

Rang, H.P., & Dale, M.M. (1986). Drugs used in treating motor disorders: epilepsy, Parkinsonism and spasticity. In Pharmacology (pp.530-539). Edinburgh: Churchill Livingstone.

In our continued examination of the production and reproduction of texts relating to our main theme of epilepsy, it was necessary to analyse also how this topic area was constituted in the medical textbook. Here, it is interesting that it features, along with the other key motor deficiency diseases in a chapter in a pharmacology textbook. Out of eight pages in the textbook which deal specifically with epilepsy, three talk about the illness itself, and five deal with the drugs that can be used to counter it. Thus it would appear that, rather than its treatment being subordinate to the condition, the condition has become subordinate to its pharmacological treatment. This chapter then goes on to examine Parkinsonism and spasticity.

Text N: Biochemistry

Stryer, L. (1988). DNA: genetic role, structure and replication. In Biochemistry (pp.559-573). (3rd ed.). San Francisco: W.H. Freeman.

Three other subject areas were chosen to represent the full epistemological scope of the first and second preclinical medical curriculum. Here, the description of DNA was a compelling choice, because of its centrality in the maintenance of the story of scientific progress after the Second World War. This has also been reflected in the literature of discourse analysis, since there has been a predominance of interest from discourse analysts (Swales, 1990, pp. 173-4) in Watson and Crick's definitive study on DNA and its incorporation into The Double Helix (1968). This textbook chapter also illustrates how their original paper has become incorporated into a textbook; although an analysis of their original paper is not our concern here.

Text O: Physiology

Guyton, A.C. (1991). Blood flow through the systemic circulation and its regulation. In Anatomy and Physiology (pp.451-460). (8th ed.) Philadelphia: Saunders.

Textbook texts were also intentionally chosen from different levels of difficulty to reflect the pedagogical as well as the epistemological scope of the medical curriculum. While physiology and anatomy are conventionally taken in the first preclinical terms, biochemistry is held over till the second, and pharmacology till the fourth terms of the pre-clinical part of the MCChB course (Glasgow University Course Compendium). Thus, the texts are simpler and shorter. Therefore, it was possible to include an entire chapter from a physiology textbook in our study. The division of the body into disparate systems is a key feature of the contemporary medical 'episteme', one that has only recently encountered resistance from the recuperation of 'holistic' forms of medicine from pre-rationalistic times. The systemic basis of modern medicine is a good instance in which the classification of the discourse of medicine into different disciplinary areas has been mapped onto an entire anatomy of the body, dividing it into the three great zones of the circulatory, nervous and musculo-skeletal systems.

Text P: Anatomy

Guyton, A.C. (1991). The skeletal system and its joints: 1. General structure; bone as tissue; the skull. In Anatomy and Physiology (pp.87-95). (8th ed.) Philadelphia: Saunders.

To complement the modern medical orientation of DNA, we have included a textbook account of the authochthonous systemic region of medicine, which is also the essential focus of study for the first year preclinical student: the skeletal system. Since this was a longer, more all embracing chapter, it was only possible to select the portions which dealt with the general structure of the axial and appendicular skeletons and the constitution of bone as tissue. The joints and the skull were left aside as discrete texts.

APPENDIX F: Sample Texts

Text G: Anal sex has been shown to increase the risk of male to female transmission in our and other studies. Although the role of sexual contacts during menses has been suggested, sample sizes in published studies on female to male transmission have not allowed examination of high risk sexual practices. Because HIV is more easily recovered from blood cells than from genital secretions a higher quantity of viral particles may be present in the vagina of HIV positive women during menses. It should be noted, however, that these high risk sexual practices (anal sex and sex during menses) were not essential for transmission. Indeed, 40 out of 82 infected women never practised anal sex and eight out of 19 infected men never had intercourse during their partners' menses (p.812).

Text O: The pressure in a blood vessel is the force that the blood exerts against the walls of the vessel. This force distends the vessel because all blood walls are distensible, the veins eight times as much as the arteries. Pressure also makes blood attempt to leave the vessel by any available opening, which means that the normally high blood pressure in the arteries forces blood through the small arteries, then through the capillaries, and finally into the veins. The importance of blood pressure, then, is that it is the force that makes the blood flow round the circulation (p.454).