

NEW DEVELOPMENTS IN SYSTEMIC LINGUISTICS

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Volume 2: THEORY AND APPLICATION

Edited by

Robin P. Fawcett and David Young



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Foreword

This book is the second of two volumes, which together give a picture of some of the major developments in systemic linguistics in recent years.

The contributions to the first volume, *Theory and Description*, could be described as being in the area of interplay between describing actual languages and theorizing about the nature of language. As I emphasized in the Foreword to that volume, systemic linguists work in a tradition in which there is a continual and powerful emphasis on the 'renewal of connection' (in Firth's terms) between theory and the nitty gritty of describing actual texts.

I am not suggesting that this emphasis on textual description is unique to systemic linguistics; it has its parallels in other schools, as for example in the emphasis on description in the American descriptivist school, and in recent decades in schools such as TAGMEMICS which derive from it. And more and more of the generation of scholars raised in the neo-Chomskyan tradition have in recent years been paying increasing attention to texts, with, as a rule, a resultant dissatisfaction with the more narrowly formalistic aspects of the theories developed in that school. But for systemic linguists 'renewal of connection' means more than this. This is because there is a second kind of 'renewal'; it is that which occurs when one takes a theory—or in practice a description of a language that has been made within the framework of some theory—and applies it to some problem extrinsic to linguistics. This is what the term 'applied linguistics' means. But the interesting fact is that there is no such thing as the simple, uni-directional 'application' of linguistics—or, probably, of any body of theory, in any area. The area of application—whether it be language teaching or any of the other wide range of areas illustrated in this volume—applies, in its turn, to the description of language being used and so in turn to the theory. Until we have finally 'got it right'—which is in any case a feeling of which we should be intensely suspicious—it will always be the case that any major attempt to apply a theory will result in 'misfits'—which may suggest modifications that are needed in the description and ultimately in the theory.

The emphasis in this second volume, then, is on the interplay between theory and application: hence the subtitle. The chapters of this book illustrate

something of the tremendous sweep of areas where systemic linguistics has been found useful and also the ways in which the work on trying to apply the theory have inevitably led to extensions and innovations. The contributors to this volume include many who are significant figures in the various areas of application included here, and some who represent the 'second generation' of systemic linguists, sometimes in the same person.

One major area of systemic linguistics that is currently a major focus of interest is unrepresented here: that of COMPUTATIONAL LINGUISTICS. There were originally to have been contributions from Christian Matthiessen and John Bateman, illustrating the application of systemic linguistics to computational models of language generation. Indeed, it is arguable that it is this area of application more than any other that is, at the present time, leading to innovations and developments at the highest theoretical level. Bateman and Matthiessen have been working on computational implementations of Halliday's version of systemic functional grammar, the structures of which are described in his *Introduction to Functional Grammar* (1985). Matthiessen has worked, with William Mann, on an English implementation ('the NIGEL grammar') at the University of Southern California, and Bateman on a Japanese implementation at the University of Kyoto. Such is the importance of this work, both for other work in computational linguistics and for systemic theory, that it has been decided to devote to it a third volume, to be jointly written by Bateman and Matthiessen. It will appear in the series, *Communication in Artificial Intelligence*, which is edited by Erich Steiner and myself and also published by Pinter. The title is *Text Generation and Systemic Linguistics: Experiences from English and Japanese*. Although it will appear in a sister series rather than in the present series, it should none the less be thought of as an integral part of *New Developments in Systemic Linguistics*. No picture of the theory and its applications would be complete without the inclusion of a chapter reporting work on the NIGEL grammar. With that important exception, then, the present volume illustrates well—though by no means completely—the immense variety of ways in which systemic functional grammar is being applied and developed in insightful ways in the late 1980s.

Robin P. Fawcett
Penarth, April 1988

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Introduction

Robin P. Fawcett

University of Wales College of Cardiff

David Young

University of Wales College of Cardiff

0.1 THE TERM 'APPLIED LINGUISTICS'

Too often the term 'applied linguistics' is taken to mean 'language teaching'—or, even more narrowly, teaching English as a second or foreign language. Yet there is an immense and ever-expanding range of possible areas of application of linguistics and in particular, as this volume illustrates, of SYSTEMIC linguistics. We need, however, to replace the concept of 'applied systemic linguistics' by 'interaction between a systemic model of language and a model of some other related phenomenon'; the traditional picture of 'taking a theory and applying it' is a false one, as the Foreword to this volume indicates. It would be equally false to assume, as is often done, that the concept of 'applied linguistics' can for all practical purposes be equated with language teaching. The teaching and learning of languages is only one of many such areas of interaction, though it is certainly an immense and important area, including as it does mother tongue as well as second and foreign language learning. It is perhaps because this area is the major provider of salaried employment that the equation—or near-equation—of applied linguistics and language teaching is so often made. This book in fact contains only one chapter (that by Melrose) that contributes to this field, although the influence of systemic functional ideas in general and of Halliday in particular in this field have been great. One thinks of the major contribution in teaching English as a mother tongue in the late 1960s and early 1970s in particular through the project *Language in Use*, and the debt acknowledged by speaker after speaker—many in the areas of second and foreign language teaching—to Michael Halliday at the 1987 AILA Congress in Sydney.

0.2 THE ORGANIZATION OF THIS BOOK

We have sought to illustrate the range of areas in which systemic linguistics has been found useful by giving the book many 'parts'—most of which in fact contain only one chapter—each being labelled with a generally recognizable name which indicates the area of application to which the chapter makes a contribution. In no sense are the chapters offered as summaries of systemic work in these areas; that would have been a different enterprise and a different book. What each chapter offers is a contribution of a piece of original work, using and typically expanding upon systemic ideas, in that area. In some areas the chapter reports detailed study, while in others a more prospective view is taken, and many include an element of both.

The book opens with two chapters on 'testing the theory'. The first, by Nesbitt and Plum, makes a significant contribution both to systemic theory and to the methodology available for SOCIOLINGUISTICS by making a quantitative analysis of patterns of grammar and discourse and incorporating the results in probabilistic system networks. In particular they investigate the variation of syntactic relations between clauses across different genres. The chapter by Benson, Greaves and Mendelsohn seeks to establish whether the tone system, one of Halliday's three major aspects of INTONATION, is central to the English language. It does this by examining the degree of similarity between the tone systems of two very different accents, Canadian and British English. (Others who could have contributed to applications of intonation include Elmanoufy, Halliday and Tench.)

These two chapters are followed by several which, while they can be seen as contributions to different areas of applied linguistics, have in common the fact that they are concerned with a broad area of linguistic research that nowadays is commanding much attention: the working out of an integrated model for the linguistic system and the functioning of language in its social context. One of the problems is that of deciding how many and what levels to recognize, and another is how the various levels should be integrated in a single model. Ventola's approach to the problem (called 'systemiotics') presents a multi-layered model which derives from the ideas of a group led by Jim Martin at the University of Sydney in the early 1980s (Martin 1985). In this approach 'genre' and 'register' are distinguished as two separate planes, above language itself, and each plays an important part. The ultimate goal is to show how the systems and structures of language function as 'realizations of social systems and structures'. This chapter may be seen as a contribution to APPLIED SEMIOTICS.

The present era in language teaching methodology takes as a major goal the teaching of language as communication. Melrose is interested in the application of integrated models of language to foreign language teaching. He was a member of the same group at Sydney as Ventola and his chapter presents a partly similar multilayered framework. This important contribution to EDUCATIONAL LINGUISTICS introduces modifications to the Martin (1985) model, including ones which are designed to take account of kinesic

factors in interaction. The chapter by Harris also deals with the generic properties of texts. She is concerned with the development of a model that is adequate for the analysis of long and complex texts—and in particular for texts such as those of the courtroom, which, she would claim, are of special ideological significance. This chapter also approaches the problem of the relationship between 'sub-genres'. Systemic linguistics has a particular contribution to make to IDEOLOGICAL LINGUISTICS, as is clearly shown by Chilton's *Language and the Nuclear Arms Debate: Nukespeak Today* (1985). (Other scholars with a particular interest in ideological linguistics include Fairclough, Kress, Lemke and Martin.)

Fawcett, van der Mije and van Wissen have developed a formal model, derived initially from a study of the language of children aged six to twelve, for the structure of EXCHANGES in the DISCOURSE component of the overall model of language. (The corpus is the Polytechnic of Wales' child language corpus, now available in a computer-readable, syntactically analysed form (Fawcett and Perkins 1980). In their model the familiar systemic concept of SYSTEM is supplemented by that of FLOWCHART relationships. The purpose is to generate structures with certain similarities to those found at the lexicogrammatical level, but at a level where there may be more than one participant in the communication process. (Others who have contributed to this area include Berry, Butler, Halliday, Martin and Ventola.) Steiner offers us an interesting application of systemic concepts to the area of COGNITIVE studies—starting, as with the last chapter, from a descriptive study of the language of children aged six to twelve. He tackles the problem of the integration of language with wider fields of human activity in a socio-psychological spirit. He is concerned with the planning of human activity of both a linguistic and a non-linguistic character and in this chapter he attempts to set up a single framework for describing this.

If language teaching is the area of 'applied linguistics' with the greatest number of salaried staff, the area with potentially the largest number of students is probably the application of linguistics to literary criticism. A recent volume in the *Open Linguistics Series* that illustrates the value of systemic linguistics in this area is Birch and O'Toole's *Functions of Style* (1988). Many systemic linguists have contributed to this area of application for many years, perhaps most notably Halliday, Hasan and O'Toole. One contributor to that volume is Butt, and his chapter in the present book must be taken as a representative of the many scholars who could have contributed to this area. Here, Butt is concerned with the function of language to construct reality, not only in interpersonal and affective modes but by the manipulation of ideational meaning. His exemplar is a poem by Wallace Stevens. He examines the encoding of representational meaning in the poem and shows how the semantics of the lexicogrammar 'extends the semantic potential of the poet. It is a level of "symbolic articulation" in its own right . . . The poem presents the reader with a number of ontological models and appears to argue about the status of these alternatives.'

LANGUAGE PATHOLOGY is an area which has been drawing on linguistics for some years, under the influence of the Quirk Report. The major source of

insights has been the well-known, descriptively-oriented grammars of Sir Randolph Quirk and his associates, culminating in Quirk *et al.* (1985). Systemic linguistics can be seen as the more 'theoretical' wing of the broad, Firthian tradition, of which the Quirk grammars are a part and it is good to find that systemic ideas—and even system networks themselves—have been found increasingly useful in the latest version. Crystal has made the greatest contribution to showing the relevance of linguistics to speech pathologists, but Gotteri, who has for some years been a teacher of speech therapy students, goes further and here advocates the application of specifically systemic principles to the field.

0.3 CONCLUSIONS: THE TIME PROBLEM

Any such book as this must necessarily be incomplete. One major gap, as is pointed out in the Foreword, is the lack of a chapter from the burgeoning field of COMPUTATIONAL LINGUISTICS (though some reference is made to this in the chapter by Fawcett, van der Mije and van Wissen). It is a thought that is both exciting and at the same time sobering that it would, in principle, be possible, if only the active scholars in the field were not as over-extended as they are, to produce entire books, such as those cited above, for each of the major areas indicated here of interaction between systemic linguistics and an area of 'application'. Here, then, it has only been possible to include a representative chapter for each of these many areas; many 'sub-areas' have had to be excluded.

Another major area of 'application' not covered here is that of CHILD LANGUAGE DEVELOPMENT. The major contributors in this area have been Halliday and Painter; for a recent and fascinating study of the initial stages of Clare Painter's insightful application and discussion of Halliday's ideas, see her *Into the Mother Tongue* (1984).

This book is not only incomplete in its coverage of areas of interaction. Many scholars who are active in the areas represented here—as well as scholars in those that are not—could have made valuable contributions, but have not. This is especially true of those areas where what is sought is a linguistics that is socially relevant. It is perhaps time to make the point that, as 'efficiency' in the somewhat dubious sense of a high staff-student ratio is increasingly sought in universities and polytechnics, research suffers. These days, scholars who perform their teaching and administrative work conscientiously and caringly have less and less time for carrying out the detailed research and—which is most relevant for present purposes—the writing of papers and books. No doubt the ideas will still come. Yet it is of limited value if they do not get worked through, written down and read. Our impression is that many scholars are reaching the point where there is insufficient time even for reading, let alone for writing. Yet they are complementary parts of a vital stage in the advancement of any area of study. Indeed, one of the reasons why several leading systemic linguists who could usefully have contributed to this book have not been able to do so is simply this: all of their available 'writing

time' was committed, at the time when this volume was being prepared, to contributions to other volumes. This has had the effect of making space for new writers, and it is a pleasure to be able to say that we feel that the book is as strong—and perhaps stronger—with the present company of contributors as it might have been if they had been replaced by more of the better known names in systemic linguistics.

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Part I

Testing the Theory

1 Probabilities in a systemic-functional grammar: the clause complex in English

Christopher Nesbitt and Guenter Plum

University of Sydney

1.0 INTRODUCTION

In this chapter, we report the results of a quantitative investigation of the relations which hold between clauses in complexes, in a sample of spoken texts which could be generally characterized as 'narratives'.¹ We are concerned to discover the relative frequency of occurrence of the different types of CLAUSE COMPLEX relations in text, the patterns of occurrence or distributions of relation types and how these patterns can be modelled with respect to the grammar as a whole. The quantitative analysis of grammar and discourse patterns has hardly begun but since language itself consists of patterns which can only be quantitatively delineated, studies of this type are central to the core questions of linguistics and important for many applications of linguistic science.

The focus of our investigation is on the analysis of clause complex relations. The clause complex, as the highest ranking grammatical unit, is set up to account for the functional organization of what would be called 'the sentence' in the case of written texts. The relations which hold between clauses, which structure them as complexes, are analysed according to two primary dimensions. First, the interdependency of clauses is analysed in terms of the categories of PARATAXIS and HYPOTAXIS. Second, the relations between clauses are analysed according to their logico-semantic type, the primary categories being projection and expansion.

We examine how the patterns of choice observed in text may be represented in terms of the grammatical system. We examine how the feature choices in networks may be weighted so as to represent their actual frequency of occurrence in text. We see the incorporation into grammatical descriptions of information on the actual patterns of choice realized in text as the

¹ We wish to thank the many people who have encouraged us in the work we present here. In particular, we wish to thank Michael Halliday, Jay Lemke, James Martin, Barron Brainerd and Ann Cowling for discussing with us various aspects of this chapter. Also we wish to thank other friends and colleagues who have taken the time to read this work in draft and to comment on it at length.

motivation for working towards the probabilistic modelling of language. This study of clause complex relations in English we present as a first step in this direction.

1.0.1 Choice grammar and probabilistic grammar

Choice and delicacy

In systemic-functional grammar, CHOICE is the basis for the modelling of language. Systemic theory is in fact a theory of language as choice. Such a theory takes paradigmatic relations as primary. Priority is given to paradigmatic relations, recognizing them as the underlying organization of language. Paradigmatic relations are relations of 'either this or that'. This is the meaning of 'choice' with respect to the grammar. And it is this notion of choice, paradigmatic relations of 'either/or', which is the organizing concept of the systemic-functional model of grammar.

With choice as the basis of our theory of language, grammar can be modelled as sets of possibilities, as a potential for making meaning. Choice of paradigmatic ('either/or') relations are formalized through the notion of SYSTEM. A system is defined as an entry condition together with a set of mutually exclusive options or features, one of which must be selected. The entry condition of a system is itself an option in a prior system. So the environment of choice is always that of choices already made. In this way systems form networks of systems organized according to the logical priority of certain options over other options.

This ordering of systems into a system of systems or a system network is according to the notion of DELICACY. A system is a set of mutually exclusive options with these options giving rise to further sets of mutually exclusive options. Delicacy accounts for this relation of logical priority between systems. The options within a particular system only become available once the entry condition of that system is satisfied, which is itself an option in a prior, less delicate, system of options. Delicacy is a scale of differentiation or of depth of detail. It is a matter of degree, the degree to which distinctions are made, from primary delicacy to the most delicate of distinctions (Halliday 1961: 272).

To illustrate the concept of delicacy, we present a highly simplified picture of the system of Mood in English in Figure 1.1. We have here three systems constituted by the options indicative/imperative, declarative/interrogative and WH/polar arranged according to the relative delicacy of the distinctions. The choice between the feature WH and polar only becomes available given the selection of the feature interrogative. Likewise the choice between the features interrogative and declarative is only available given the selection of

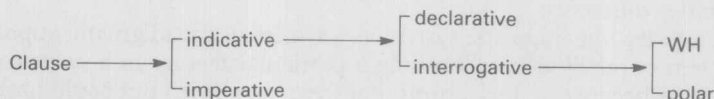


Figure 1.1 Relative delicacy in an idealized system of mood in English

indicative over the feature imperative. The logical priority of certain systems over other systems concerns the relationship of delicacy which holds between them.

Against the background of a theory of language as choice, the meaning of the PROBABILISTIC MODELLING of language comes into focus. Of central importance for the 'probabilization' of the grammar is the notion of system and the concept of delicacy. It is because the organizing principle of systemic-functional grammar is choice in the environment of choice that the probabilization of the grammar is a natural step leading to an enrichment of our understanding of language. To reiterate, the basic organization of language is paradigmatic relations of 'either/or', or, more simply, systems of choices. And it is through the probabilistic modelling of grammar that we may investigate the relation between systems of choice and patterns of typical choice.

Systems of choice are relations of the type 'either this or that'; patterns of choice are relations of the type 'more likely this/less likely that'. Recognizing that language is based on paradigmatic relations of 'either/or' leads one to recognize that overlaying such relations are relations of 'more likely/less likely'. It is in the description of these relations of 'less likely/more likely' that probabilities enter grammatical description. Such a position is stated clearly by Halliday (1961: 259): 'It is not simply that all grammar *can* be stated in probability terms, based on frequency counts in texts: this is due to the nature of text as a sample. But the very fact [. . .]—that there is a scale of delicacy at all—shows that the nature of language is *not* to operate with relations of "always this and never that"' (emphasis in original).

To enrich the grammar in this way, we need to weight statements of relations of 'either/or' in terms of the relations of 'more likely this/less likely that'. This can be achieved by ascribing probabilities to the features in systems. The probabilities ascribed to the features in a system describe the pattern of typical choice. Given a system *y/z* with an entry condition *a*, it can be read as follows: 'If feature *a* is present, then either *y* or *z* is also present with *y* more likely, equally likely, or less likely to be present than *z*', depending which is the case.

'Either/or' relations are the qualitative aspect of grammar while relations of 'more likely/less likely' are the quantitative aspect. Probabilization of the grammar is the incorporation of the quantitative aspect of grammar into grammatical description. Patterns of typical choice are as much part of the grammar of a language as are the choices themselves. Language is at the same time a system of quantitative difference and a system of qualitative difference. While language is a system of choice, it is also a system of variation. From the perspective of the system of grammar, systems of choice and patterns of choice are not essentially different. Qualitative differences shade into quantitative differences. Systems of qualitative difference are at the same time patterns of quantitative difference.

In summary, the linguistic system as a system of paradigmatic oppositions is a system of possibilities. Choosing a particular feature in a system means what it does because of the features that were not chosen but could have been chosen. This is the qualitative aspect of the system, the system of 'either/or'

relations. But the system is not only a system of possibilities, it is also a system of probabilities. The linguistic system as a system of probabilities is also a potential to mean. The choice of a particular feature also means what it does against the background of what are more likely and less likely choices. What is said is not only interpreted against a background of what could have been said but was not; it is also interpreted against the background of expectancies, against the background of what was more likely and what was less likely to be said. The grammar of a language is not only the grammar of what is possible but also the grammar of what is probable.

System and process

The integration of both quantitative and qualitative description in modelling language provides potential insight into the relation between system and process, and the process of language change. It provides the conceptual apparatus to investigate the dialectic between the linguistic system and linguistic process. The problem can be addressed as follows: 'To what extent do the quantitative patterns to be observed in linguistic process, the statistical properties of text, explain the qualitative patterns of linguistic difference?'

Systemic theory distinguishes two aspects of language: language as system—the potential to mean; and language as process or text—the actualization of that potential. The system is the potential which lies behind the actual as manifested in process or text. Linguistic process would be inexplicable and hence unimaginable without there being a linguistic system behind it (Hjelmslev 1953: 24).

Furthermore, in systemic theory, PARADIGMATIC relations, since they are the organizing principle of language, are taken as primary; while SYNTAGMATIC relations, since structure can always be predicted on the basis of the features chosen, are taken as derived. Syntagmatic relations or structure are derived since they are the result of the realization of particular choices of features in the system. The selection of features in the system determines syntagmatic structure. In this regard, systemic theory is akin to the theoretical schematization of Hjelmslev (1953).

Although we can focus on language either from the viewpoint of the linguistic system or of linguistic process, it is only by having both viewpoints in perspective at once that we can begin to understand how language changes and develops. Language is the interpenetration of system and process. As Hjelmslev (1953: 24) points out, textual process determines the system while the process itself only 'comes into existence by virtue of a system's being present behind it, a system which governs and determines it in its possible development'.

The linguistic system as a potential to mean is a resource which is continually being renewed. It expands and changes through linguistic process, the process of 'linguaging'. Every pass through the system, actualizing in structure the system potential, imperceptibly recasts it, as every pass through the system draws anew the pattern of typical choice, the quantitative pattern of 'more likely/less likely'. Only through this ongoing dialectic can it be seen that process determines system while the system

governs its possible development. It is through the incalculable passes through the system as instantiated in process that different patterns of 'more likely/less likely' emerge and that these quantitative variations accrue and amount to changes of qualitative import. It is through the probabilistic nature of the grammar that system and process are dialectically connected.

In this chapter, we examine a particular pattern of statistical association between certain grammatical features which throws light on how it is that the system of grammar may grow, functionally expanding as a resource for making meaning. This general process of the functional expansion of the linguistic system will be referred to as 'SEMOGENESIS' (Halliday 1985: 231, 251).

1.0.2 Probabilistic modelling of language in context

All language is language functioning in context. And all language is language systematically related to its context. Change the context in which language is functioning and the language changes. Language varies according to context and the variation is systematic and predictable. The role that the probabilistic modelling of language can play in this regard is to enable us to describe explicitly the covariation of language and context. This can be achieved through the concept of **PROBABILISTIC REALIZATION**.

Register theory has developed as an attempt to account for the systematic variation of language and context. From Malinowski's original conceptualization of context, through its later refinements in terms of the register categories of field, mode and tenor, there has been an ongoing development, distinguishing the relevant from the irrelevant features of context, moving from a concrete characterization of context to a more abstract schema of types, to a more thorough semiotic construing of context (see Firth 1935, 1950; Gregory 1967; Halliday 1978; Martin 1985). But what has remained central is that predictions can be made about the characteristics of the language that will occur on the basis of contextual features. And, conversely, it is the case that, given a particular text, on the basis of the linguistic characteristics it exhibits, predictions can be made as to the likely context to which it is functionally related. The relation of language and context is one of mutual predictability.

CONTEXT, like language itself, can be conceived of as a semiotic system in its own right, but as a semiotic system of a rather different kind since it is realized by yet another semiotic system. Not having an expression plane of its own, it is a 'connotative semiotic'. Its expression is through language. We could say that it has language as its phonology. But context, as a semiotic system, although of a different order to language, can also be formalized, like language, as systems of options ordered according to a scale of delicacy. In such a formulation, **REGISTER (FIELD, MODE, TENOR)** is also a plane of systemic oppositions. Similarly, **GENRE** can be formalized as a still higher order plane of systemic oppositions accounting for the generic variation of text (see Martin 1985). These proposals are part of the progressive elaboration of a contextual theory of language, building on a traditional tri-stratal model of language and on a