Modelling big texts: a systemic functional approach to multi-genericity

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0. The page

My computer screen is too small - it doesn't hold a page. Maybe this shouldn't matter, but it seems to. Maybe before personal computers I just got used to having a page to work on. I don't know. But I've been word-processing for several years now. I should be used to it. But I still miss having a page. I'm jealous of my friends and colleagues with portrait-size screens, though I don't envy them lugging them around. I want my page.

As a linguist interested in genre, I'm also worried about the page. Most of the texts my colleagues and I have been developing genre theory around fit snugly into a page (e.g. Hasan 1977, 1979, 1984, 1985, Martin 1985, Ventola 1983, 1984, 1987). Sometimes they are a little longer, but by choosing a smaller font we can squeeze them into a page. But what kind of a genre theory is this? Life is full of texts that are longer than a page. I'm surrounded by them. But when I sit down to work I still want my page.

These worries may not be unrelated. Is there then something natural about the page? Is the page more than a conveniently sized piece of paper, designed by printers and publishers to suit their enterprise? Is the page a unit of meaning in our culture? Is it after all quite natural for the texts we've been working on to sit comfortably on a single page?

In this paper an attempt will be made to theorize an answer to these concerns. It will be suggested that the genres systemic linguists have been studying intensively do have integrity, and that a model of longer texts can be provided by studying the ways in which these 'elemental' genres are combined into what will be termed here **macro-genres**. It will also be suggested that systemic grammar provides a rich model for theorizing the ways in which more elemental genres are combined.

1. A genre on a page

By way of illustrating the problem rasied above, consider text 1. Generically, this text is a historical recount (see Eggins et al. 1987/1993, Disadvantaged Schools Program 1991). Its function is to generalise across a set of experiences as they have evolved through time, in this case the history of international whaling. From an ideational perspective, this genre is organised around three stages: Orientation, Record and Re-orientation (see Plum 1988). This part-whole structure is represented as a constituency diagram in Fig. 1.

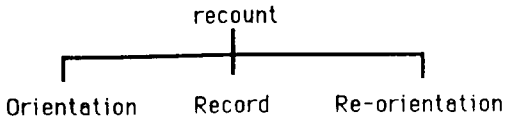


Fig. 1: The ideational organisation of text 1 (historical recount)

Even with its title, and with its stages functionally labelled, the text fits comfortably onto a page. The history of 1000 years of high-seas whaling is introduced, presented and then summarised. Systemic genre theorists have no worries here.

1. Title

Whaling [historical recount]

ORIENTATION

For one thousand years, whales have been of commerical interest for meat, oil, meal and whalebone.

RECORD

About 1000 A.D., whaling started with the Basques using sailing vessels and row boats. They concentrated on the slow-moving Right whales. As whaling spread to other countries, whaling shifted to Humpbacks, Grays, Sperms and Bowheads. By 1500, they were whaling off Greenland; by the 1700s, off Atlantic America; and by the 1800s, in the south Pacific, Antarctic and Bering Sea. Early in this century, the Norwegians introduced explosive harpoons, fired from guns on catcher boats, and whaling shifted to the larger and faster baleen whales. The introduction of factory ships by Japan and the USSR intensified whaling still further.

REORIENTATION

The global picture, then, was a mining operation moving progressively with increasing efficiency to new species and new areas. Whaling reached a peak during the present century. [W R Martin 1989:1]

Somewhat more sobering is the fact that this text is not alone. Its immediate environs include an ensuing paragraph on the history of shore-based whaling, a report on whales (the immediately preceding section) and a further historical recount on whaling management (the immediately following section). And these are just three of the six sections constituting a paper called 'Innovative fisheries management: international whaling' which is itself one of four papers included in the publication *International Fisheries Management Initiatives* (Bielak 1989[1]). This is a worry. As systemic linguists, it leaves us with no choice but to think grammatically. Reasoning from the grammar then, how do texts get bigger than a page?

[1] The overall structure of this document is reviewed in section 4 below.

2. Thinking grammatically

Note that our decision to think grammatically rests on the assumption that text and clause are symbolically related, following on from Halliday's 1981b, 1982 suggestions as to the various respects in which a text is like a clause (Martin in press). Exploring this symbolic relation is an important theoretical concern; our understanding of realisation as negotiation across levels will be considerably enhanced by investigations of this kind. Equally important are more practical considerations, such as the amount of knowledge about language teachers and their students need to share to promote literacy development (cf. Rothery 1989). The more work we can make our grammar do, the easier it will be for educators to bring semiosis to consciousness and to guide their students authoritatively in Australian classrooms (cf. Pike 1982, Pike and Pike 1983 on the importance of theoretical tools that can be re-deployed across a range of descriptive contexts).

2.1 Modes of meaning

Halliday (e.g. 1970a, 1974, 1978) offers a metafunctional interpretation of the organization of grammatical systems, recognising three major components: **ideational, interpersonal** and **textual**. Matthiessen [2] glosses the work done by these components in terms of the orders of reality they construe: for him, ideational meaning is concerned with construing reality proper, interpersonal meaning with social reality and textual meaning with the semiotic reality that manifests itself as ideational meaning and interpersonal meaning materialise themselves as text. Halliday 1974 offers a complementary glossing, with ideational meaning as the observer function, interpersonal meaning the intruder function and textual meaning the relevance function. These interpretations of the contextual significance of these language intrinsic metafunctions are summed up in Table 1; for discussion of the significance of a metafunctionally organised grammar for contextual theory, see Martin 1991a.

METAFUNCTION	'reality construal'	'work done'
IDEATIONAL (logical, experiential)	reality	(observer)
INTERPERSONAL	social reality	(intruder)
TEXTUAL	semiotic reality	(relevance)

Table 1: Metafunctions and orders of 'reality'

Alongside their relative systemic independence, the metafunctions give rise to different forms of structural realisation. Halliday 1974, 1979 and Matthiessen 1988 discuss the respects in which ideational meaning is oriented to a **particulate** form of realisation, interpersonal meaning to **prosodic** realisation and textual meaning to **periodic** realisation (cf. Pike 1982 on particle, wave and field perspectives in linguistic description). Here it is useful to break down the ideational metafunction into its experiential and logical sub-components, in order to distinguish between the part/whole form of particulate realisation associated with experiential meaning and the part/part form of particulate realisation associated with logical meaning. These associations between metafunctions and the types of structure which realise them are summed up in Fig. 2.

[2] This glossing was presented by Christian Matthiessen during lectures on systemic grammar at the Finnish Summer School of Linguistics at the University of Jyvaskyla in 1989.

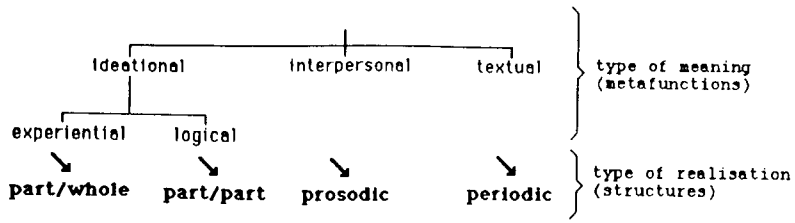


Fig. 2: Metafunctions and types of structure

While there are long standing descriptive traditions in linguistics as far as the representation of particulate structure is concerned (**constituency** representation for experiential meaning and **dependency** representation for logical meaning), representations for prosodic and periodic structures are less well developed. Partly for this reason, and partly to facilitate the co-ordination of clause structures deriving from different metafunctions, Halliday 1985a chose to represent clause rank interpersonal and textual structures in multivatiate terms, as if they were experiential ones. Halliday's 1985a deployment of univariate and multivariate representation is summed up in Fig. 3.

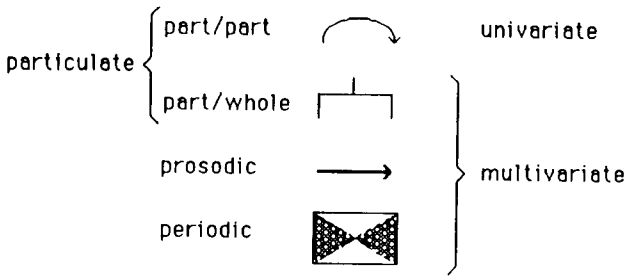


Fig. 3: Types of structure and forms of representation in Halliday 1985a

Since our purpose here is to use systemic grammar to reason about text, Halliday's rich 1979 presentation of metafunctions and types of structure will be preferred. The remainder of the paper will be organised around these grammatically founded modes of meaning, beginning with the prosodic (section 3), followed by the particulate (section 4) and the periodic (section 5). But first we will look at the nature of these modes of grammatical meaning in a little more detail, restricting the discussion in general to prosodic, particulate and periodic patterns of realsiation in the clause.

2.2. Interpersonal meaning — prosodic realisation

Prosodic realisation refers to the way in which a particular kind of meaning spreads out across a structure, colouring the unit as a whole. One clear example of this form of realisation is English TONE (see Halliday 1967, 1970b, 1985a), which unfolds in a continuous movement (rising, falling, rising then falling and so on) throughout a tone group. Similar patterns are found in grammar as well - in attitudinal nominal groups for example (see Poynton 1984) where positive or negative affect is realised continuously across adjectives and nouns (e.g. *you patronising sexist racist bougeois pig, my adorable sweet little bundle of joy*). A related form of opportunistic realisation is found in the clause with respect to the system of POLARITY, most noticably in non-standard dialects such as that spoken by the 'Marrickville mauler', boxer Jeff Fenech:

> "If you don't get no publicity you don't get no people at the fight," he said. "If you don't get no bums on seats you don't get paid...Anyway I enjoy it." (Fishman 1990)

In this dialect, negative polarity dictates that wherever indefinite deixis is found in the clause it will be realised by *no* (note that standard English prefers *any* in this environment). A model of this sprawling realisation is pesented in Fig. 4 (cf. *If you don't get any publicity for any fights in any papers from anyone ...* , using standard *any* forms to realise the prosody of negation).

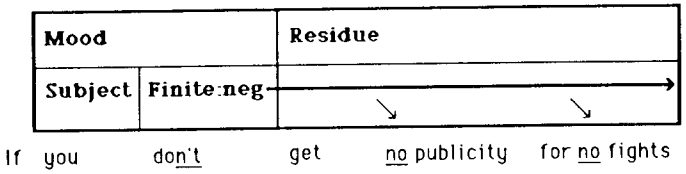


Fig. 4: Interpersonal meaning realised as a prosody - POLARITY

2.3. Ideational Meaning — particulate realisation

Ideational meaning involves a segmental construal of reality. Experientially, the segments are construed as parts of a whole, each with a distinctive role to play. Logically, the segments are construed as an open-ended series of steps, with 'parts' dependent on each other and in general playing a similar role (without the closure implied by the notion 'whole').

2.3.1 Experiential meaning — part/whole

Experientially, the English clause is a theory of goings-on and their parts. Integrating this segmentation is a theory of nuclearity, with a process and closely related participant at the centre, circumstantial relations towards the periphery, and other participant relations in between. This model of reality is outlined in Fig. 5 for part of the whaling recount introduced as text 1 above: *Early in this century the Norwegians introduced explosive harpoons...* (following Halliday's 1985a ergative interpetation of the English clause).

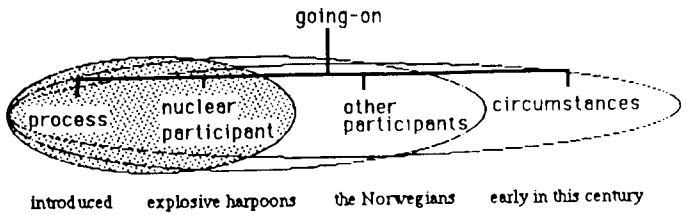


Fig. 5: Experiential meaning realised as parts and whole — TRANSITIVITY

Although we are restricting our discussion here in general to clause rank patterns, it is important to note that clause segments may themselves be construed as wholes with parts and that this pattern continues in grammar until the smallest units of meaning, the morphemes, are reached. This kind of extension is outlined in Fig. 7, where the clause's groups and phrases are broken down into their constituent parts. In systemic grammar this kind of segmentation proceeds in principle by rank, the details of which are being fudged over here.

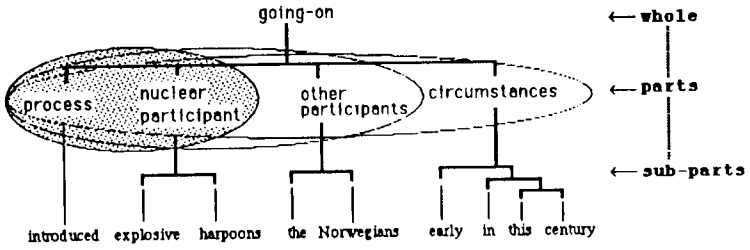


Fig. 6: Extending part-whole segmentation to lower ranks

As can be seen from Fig.'s 5 and 6 this experiential segmentation is in principle closed - there are a delimited number of segments at each rank in the grammar and a finite number of ranks. In order to overcome this closure, and renew its construal of reality, experiential meaning makes use of embedding, the process whereby wholes are included as parts. This synoptic strategy for elaborating meaning potential is illustrated in Fig. 7 for one textual variation on the example in Fig. 6: [[*What the Norwegians*]] *did was* {[*introduce explosive harpoons*]]. In this example two clauses, *what the Norwegians did* and *introduce explosive harpoons* , are embedded as Value and Token respectively in the relational identifying clause meaning 'x is represented by y'. This embedding expands the meaning potential associated with Value and Token, compared with that available in clauses like *The largest is the Sperm whale* where nominal groups (*the largest* and *the Sperm whale*) fill the Value and Token functions.

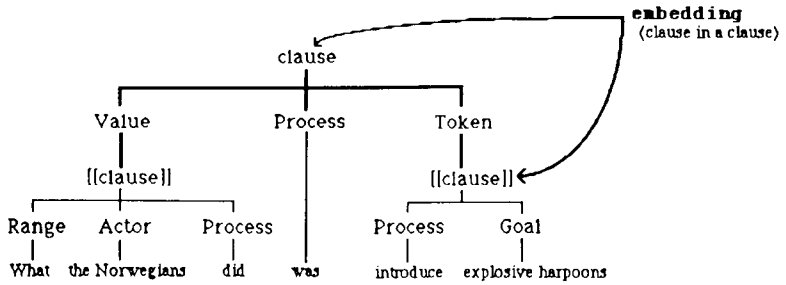


Fig. 7: Embedding - renewal of experiential segmentation at lower ranks

2.3.2 Logical meaning — part/part

Unlike experiential structures, the structures realising logical meaning are not in principle closed - precisely because they do not imply a whole. Rather they engender openness, a serialised progression from one meaning to the next, step by step, through interation. This form of realisation is illustrated in Fig. 8 for dependency relations between clauses in the clause complex. The ongoing interdependency in this case has to do with PROJECTION - with saying or thinking ensuing clauses into existence. Clause complex interdependencies of this kind lie at the frontier of grammar, interfacing directly with discourse relations. Because of this they will turn out to provide a very rich source of strategies for modelling combinations of elemental genres as macro-genres below.

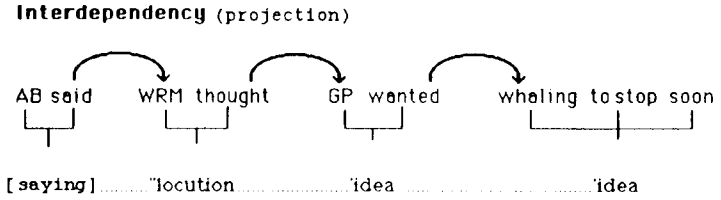


Fig. 8: Logical meaning in the context of PROJECTION — dynamic movement from part to part

2.4. TEXTUAL MEANING — periodic realisation

Textual meaning, as noted above, construes semiotic reality - it organises ideational and interpersonal meaning as coherent and relevant text (for discussion see Matthiessen 1992). In English, at clause rank, the textual metafunction typically accomplishes this by establishing complementary peaks of prominence at the beginning and end of the clause. Initial prominence is grammaticalized as Theme, the speaker's point of departure for the message; final prominence is constructed through intonation, with a tone group's major pitch movement confirming part of the message as New. This unmarked complementarity of Theme and New ("where I'm coming from"

over to "where you're going to") construes the clause textually as a wave of information, as outlined in Fig. 9. As we will see below, textual waves of this kind are a feature of higher levels of organization in text and the resulting **hierarchy of periodicity** (see Halliday in Thibault 1987:612) plays an important part in our interpretation of macro-genres.

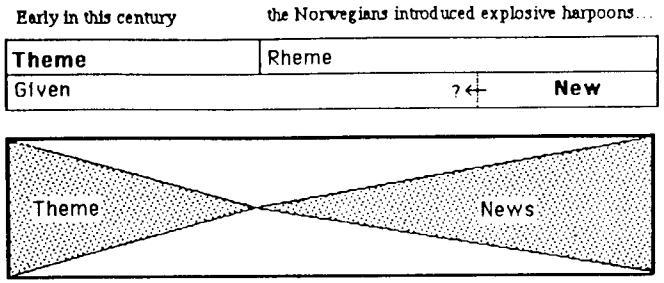


Fig. 9: Clause rank textual meaning as a wave (complementary pulses of prominence)

3. Interpersonal analogy — prosodic (amplification)

Turning from clauses to macro-genres, prosodic realisation most directly manifests itself through repetition. As in the grammar, the effect of the repetition is amplification of the interpersonal meaning in question. To see the effect of this pattern of realisation, consider text 2, the song 'The Way It Is' by Bruce Hornsby and the Range 1986 (for a related form of prosodic realisation in Bruce Springsteen's 'Born in the USA' see Cranny-Francis and Martin 1991). Musically and lyrically Hornsby's claim to fame depends on his ability to tap into the indulgent sentimental nostalgia that patriarchal men so commonly mistake for feelings. 'The Way It is' fits snugly into a liberal humanist discourse of this kind.

Experientially, the song consists of three exemplums, a kind of narrative whose social function is to comment moralistically on 'the way it is.' Plum's 1988 Incident ^ Interpretation structure thus recurs three times, with the chorus serving to interpret each Incident along similar lines. The effect of the repetition is cumulative, amplifying Hornsby's 'heart-felt' resignation. Third time round, his mild admonition "Don't you believe them" is removed; in America, that's just the way it is.

2. **'The Way It Is'** B R Hornsby **Exemplums** (x 3)

Standing in line marking time -	INCIDENT	[1]
Waiting for the welfare dime		
'Cause they can't buy a job		
The man in the silk suit hurries by		
As he catches the poor old ladies' eyes		
Just for fun he says "get a job"		
Chorus	INTERPRETATION	
That's just the way it is		
Some things will never change		
That's just the way it is		
But don't you believe them		
They say hey little boy you can't go	INCIDENT	[2]
Where the others go		
'Cause you don't look like they do		
Said hey old man how can you stand		
To think that way		
Did you really think about it		
Before you made the rules		
He said, Son		
Chorus	INTERPRETATION	
That's just the way it is		
Some things will never change		
That's just the way it is		
Ah but don't you believe them		
[instrumental break]		
{*That's just the way it is* x2}	{whispered}	
Well they passed a law in '64	INCIDENT (generalised)	[3]
To give those who ain't got a little more		
But it only goes so far		
Because the law don't change another's mind		
When all it sees at the hiring time		
Is the line on the color bar, no		
Chorus	INTERPRETATION	
That's just the way it is		
Some things will never change		
That's just the way it is		
That's just the way it is, it is, it is, it is...		
[instrumental fade]		

An initial attempt to model this notion of prosodic amplification is presented in Fig. 10. Provisionally then it would appear that one way in which texts get bigger than a page is through interpersonally oriented repetition, whose function is to adjust the volume of the proposals (for work on macro-proposals and interpersonal meaning see Martin 1992a), propositions, probabilities, usualities, obligations, inclinations, abilities, attitudes and polarities under negotiation.

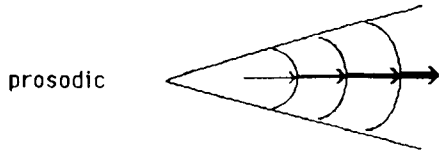


Fig. 10: Prosodic realisation as amplification in macro-genres

4. Ideational analogy (particulate)

4.1 Logical analogy — part/part (clause complex)

Halliday's analysis of clause complex relations is a very important resource for reasoning about macro-genres. Macro-genres are in fact proportional to clause complex structures in much the same way that more elemental genres are proportional to the clause:

macro-genre : clause complex ::
genre : clause

For Halliday 1985a the critical variables have to do with the nature of the interdependency between clauses (paratactic or hypotactic) and the kind of logico-semantic relation involved (projection or expansion). Sub-types of expansion and projection stand in marked and unmarked relations with parataxis and hypotaxis (Nesbitt and Plum 1988). Parataxis (equal status) is strongly associated with projected locutions and expanding extensions and elaborations; hypotaxis (unequal status) is strongly associated with projected ideas and expanding enhancements. These variables and unmarked associations are exemplified in Table 2; for further discussion see texts 3 and 4 below.

		Parataxis - equal status	Hypotaxis - unequal status
Projection	locution	He says "Get a job."	He said to get a job.
	idea	"That's the way it is", he believed.	He believed that was the way it was.
Expansion	extension	They were standing in line and marking time.	Besides standing in line they were marking time.
	elaboration	That's just the way it is: some things will never change.	That's just the way it is, which is too bad.
	enhancement	Did you really think about it and then make the rules?	Did you really think about it before you made the rules?

Table 2: Examples of hypotactic and paratactic expansion and projection (boxed examples represent unmarked associations of variables)

4.1.1 Projection

With projection, one clause instates another as a locution or idea (Halliday 1985a:196). Verbal processes, proto-typically verbs of saying, project **locutions** (constructions of wording); mental processes, proto-typically verbs of thinking, project **ideas** (constructions of meaning). As noted in Table 2, locutions are associated with parataxis (quoting), whereas ideas are associated with hypotaxis (reporting). Our problem here is to consider how one text can be seen to quote or report another.

4.1.1.1 Locution/wording (equal status)

As far as quoting is concerned, the analogy between clause complex and macro-genre is a straight-forward one. One text is quite commonly quoted by another. I will illustrate this here by quoting from myself (Martin in press c; in the spirit of Firth I will make no apology for this self-reference here); this quotation (text 3 below) includes in turn a quotation from Halliday; and Halliday's text in turn quotes through citation a number of examples of each type of expanding relation. Letting the names of authors stand for bodies of work instead of people (see Matthiessen in press b), this interdependency can be expressed as a clause complex as follows: "Martin says Martin says Halliday says English speakers say...". Note that verbal processes are **not** used to project the wordings in text 3; it is texts, not clauses, that are doing the quoting here.

3. Halliday's description of each relation, and examples of their realisation between clauses are reviewed below:

Elaboration (=)
"In ELABORATION, one clause elaborates on the meaning of another by further specifying or describing it. The secondary clause does not introduce a new element into the picture, but rather provides a further characterization of one that is already there, restating it, clarifying it, refining it..."

> That clock doesn't go; it's not working.
> She wasn't a show dog; I didn't buy her as a show dog.
> Each argument was fatal to the other: both could not be true.
> (Halliday 1985a:203)

Extension (+)
"In EXTENSION, one clause extends the meaning of another by adding something new to it. What is added may just be an addition, or a replacement, or an alternative..."

> I breed the poultry and my husband looks after the garden.
> I said you looked like an egg, sir; and some eggs are very pretty,you know.
> (Halliday 1985a:207)

Enhancement (x)
"In ENHANCEMENT one clause enhances the meaning of another by qualifying it in one of a number of possible ways: by reference to time, place, manner, cause or condition..."

> It's the Cheshire cat: now I shall have somebody to talk to.
> The three soldiers wandered about for a minute or two, and then quietly marched after the others.

(Halliday 1985a:211)

Fig. 12 offers an iconic representation of text combining through projection at the level of wording. Quoted text is usually clearly identified as such by various graphological conventions in writing, where this type of text combination is far more common than in speech. In spoken language, it is clauses rather than slabs of text that tend to be projected through quotation, since in most contexts very few texts can be reconstituted word for word. As the deixis (for PERSON, TENSE and TEMPORAL CIRCUMSTANTIALITY) of the quoted material maintains its original orientation, the projecting and quoted material can be said to have equal status (as with paratactically related clauses in a projecting clause complex). As far as I can tell, it is not possible for text to 'report' wording; hypotaxis is not opposed to parataxis at the level of macro-genres.

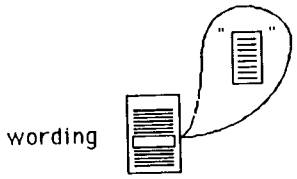


Fig. 12: Projected wording — combining texts by quotation

4.1.1.2 Idea/meaning (unequal status)

It might also appear at first that meaning cannot be reported at the level of macro-genres. If however we bring figures, tables, graphs, diagrams and so on into the picture, then the possibility of bypassing wording and reporting meaning directly seems a viable one. The drawing of projected wording in Fig. 12 for example transcends the grammar of English, making use of alternative forms of representation: a drawing of a page, including a schematic linear representation of text, with a box highlighting projected wording, with the quotation projected as a baloon, cartoon-style, alongside the page, with another drawing of a page inside the baloon, enclosed in quotation marks, and including further schematic representation of text. This form of diagrammatic representation might well be approached as a semiotic system in its own right, inviting deconstruction along the lines of suggestions by Kress and van Leeuwen (1990a, 1990b) for reading images. But seen from the perspective of language, the figure can be interpreted simultaneously as coding linguistic meaning - as a projection of the 'content' developed in section 4.1.1.1, bypassing its wording.

Another example of reported projection of this kind is presented in text 4 below, quoting again from Martin in press c. In this text, Halliday's clause complex analysis, which was projected as Table 2 above, is given an alterantive projection in the form of a system network. Once again, the projection itself constitutes a designed semiotic system, contrived by systemicists and deserving of analysis. At the same time, the function of system networks of this kind in systemic theory needs to be kept in mind - namely that of providing an alternative consolidating form of representation for meanings that have been discursively developed as text. It is this reporting function that is under focus here.

4. ... This is especially true with conjunctive relations, since it is in this area that Halliday 1985a:192-251 has elaborated his grammatical description to the point where very long passages of spontaneous spoken monologue are netted in. His clause complex analysis has in other words pushed grammatical description to new frontiers, and it is to the limits of these that this chapter first turns.

Halliday's 1985a:197 paradigm for clause complex relations is formulated systemically as Fig. 4.1, along with notational conventions for analysing the dependency relations involved. The network distinguishes both the type of interdependency (paratactic or hypotactic) and the kind of logico-semantic relation involved (projection or expansion).

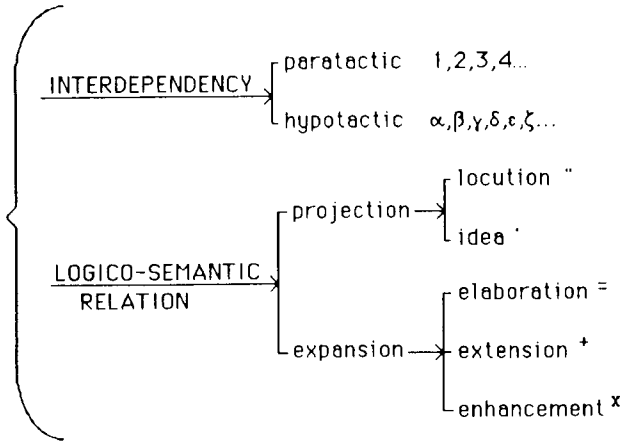


Fig. 4.1: Halliday's 1985a description of clause complex relations

This analysis is illustrated for text [4:1] below (taken from the research reported in Plum 1988)...

The notion of 'projected meaning' is projected as a diagram in Fig. 13 below. Once again, as far as I can tell, the opposition of parataxis to hypotaxis is not relevant at the level of macro-genres, so the question of quoting meaning does not arise.

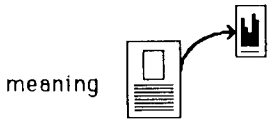


Fig. 13: Projected meaning - combining texts with figures, tables, diagrams etc.

Note again that the intepretation of projection being developed here in intended to complement, not to replace, readings of tables, figures, diagrams and so on as images (following Kress and van Leeuwen 1990a, 1990b). Treating these images as projected meanings allows us to focus on the semantic dependency between these images and the texts including them (which is of course mediated by the captions relating these projections to the texts projecting them, and any wording included in the images themselves); but the grammar of these images remains an important question in its own right. Because of their semantic dependence on projecting text, schematic images such as those considered here can be treated as dependent on their projected text - as with hypotactically related clauses in the clause complex. Less schematic forms of representation, such as photographs, are more questionably dependent in this way (although it might be argued that their surrounding text is generally replete with instructions as to how images, however 'real', should be read). We should also note here that texts in which most of the semiotic work is accomplished by images rather than verbal text have not been considered here. The relation of image to wording inside diagrams like Fig. 13 for example is the reverse of that between Fig. 13 and its projecting text. The whole question of interacting semiosis of this kind is something that is in need of further attention and has barely been touched on here. Fortunately, thanks Halliday 1985a and Kress and van Leeuwen 1990, the tools for deconstructing conversations between verbal and non-verbal texts are now firmly in place.

4.1.2 Expansion

With expansion, one clause expands another by elaborating it, extending it or enhancing it. Following Halliday 1985a:196-197, **elaboration** involves restating in other words, specifying in greater detail, commenting or exemplifying; **extension** involves adding some new element, giving an exception or offering an alternative; **enhancement** involves embellishing with circumstantial features of time, place, cause or condition.

Macro-genres developed through expanding relations, as we shall see, often afford the possibility of an alternative or simultaneous part/whole interpretation. Text 1 for example will be used in section 4.1.2.1 immediately below to illustrate elaboration, whereas in section 1 above the same text was given a multivariate Orientation ^ Record ^ Reorientation interpretation. In this case the readings are complementary: the univariate elaboration reading brings out the respect in which the stages in the recount paraphrase each other, while the multivariate reading brings out the intertextual relationship between this and other narrative-type genres (for which see Plum 1988, Rothery 1990).

4.1.2.1 Elaboration (equal status)

As just noted, elaboration will be exemplified here using text 1. In this text the title (*Whaling*) is first elaborated as a clause (*For one thousand years, whales have been of commerical interest for meat, oil, meal and whalebone.*); this clause is then unpacked in the remainder of the text's ititial paragraph as the history of whaling; this history is then re-packed as paragraph 2 (including the critical nominalisation *a mining operation moving progressively with increasing efficiency to new species and new areas*). Each of these steps in the text's development involves restatement as ideational meaning is explored at more and less specific levels of generality.

1. Whaling [historical recount]
=

For one thousand years, whales have been of commerical interest for meat, oil, meal and whalebone.
=

About 1000 A.D., whaling started with the Basques using sailing vessels and row boats. They concentrated on the slow-moving Right whales. As whaling spread to other countries, whaling shifted to Humpbacks, Grays, Sperms and Bowheads. By 1500, they were whaling off Greenland; by the 1700s, off Atlantic America; and by the 1800s, in the south Pacific, Antarctic and Bering Sea. Early in this century, the Norwegians introduced explosive harpoons, fired from guns on catcher boats, and whaling shifted to the larger and faster baleen whales. The introduction of factory ships by Japan and the USSR intensified whaling still further.
=

The global picture, then, was a mining operation moving progressively with increasing efficiency to new species and new areas. Whaling reached a peak during the present century. [W R Martin 1989:1]

When elaboration is deployed as waves of generality and specificity in this way, texts lend themselves to re-interpretation from the perspective of periodic structure and textual meaning. Following Martin in press b, c, d the first clause of text 1 can be treated as a hyper-Theme (point of departure for the text as a whole) and the last two clauses as hyper-New (distillation of the news developed through the text). Note that text 1 has now been deconstructed from the perspectives of particulate (including the distinct part-whole and part/part interpretations compared above) and periodic structure; all three readings are required in order to do justice to the text's experiential, logical and textual meaning. Metafunctional dialogism of this kind is an integral feature of the structure of macro-genres (for a very helpful discussion of metafunctional dialogism in the clause, see Matthiessen forthcoming).

hyper-Theme (clause Themes underlined)

For one thousand years, whales have been of commerical interest for meat, oil, meal and whalebone.

About 1000 A.D., whaling started **with the Basques using sailing vessels and row boats**. They concentrated on **the slow-moving Right whales**. As whaling spread to other countries, whaling shifted **to Humpbacks, Grays, Sperms and Bowheads**. By 1500, they were whaling **off Greenland**; by the 1700s, **off Atlantic America**; and by the 1800s, **in the south Pacific, Antarctic and Bering Sea**. Early in this century, the Norwegians introduced **explosive harpoons, fired from guns on catcher boats**, and whaling **shifted to the larger and faster baleen whales**. The introduction of factory ships by Japan and the USSR intensified whaling still **further**.

The global picture, then, was a mining operation moving progressively with increasing efficiency to new species and new areas. Whaling reached a peak during the present century.

hyper-New (minimal New in bold face)

A schematic outline of this textual strategy for deploying elaboration is presented in Fig. 14 . Periodic structure at the level of macro-genres will be further discussed in section 4.3 below.

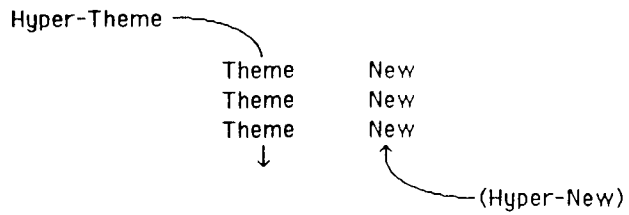


Fig. 14: Complementarity of hyper-Theme & hyper-New

4.1.2.2 Extension (equal status)

In order to illustrate extension (adding some new element, giving an exception or offering an alternative), we will move on to the environs of text 1, including the rest of its section, and consider the paper 'Innovative Fisheries Management: international whaling' as a whole. The paper begins with a title which is then unpacked in an introductory paragraph before being elaborated by the paper as a whole. This elaboration is itself divided into five section: i. Whales, ii. Whaling, iii. International Management, iv. The Current Scene and v. Relevance to Canadian Fisheries Management. Sections i, ii, iii and iv are inter-related by extension - a historical report on the current scene is added onto a historical recount on international management which in turn extends a historical recount on whaling which is itself an extension of a scientific report on whales.

These four sections are relatively independent of each other, and so can be treated as having equal status in the paper. The logic of their presentational sequence is textual rather than ideational; different sequences of presentation are possible with next to no repercussions for the wording of the individual sections themselves. The introduction to the paper, and sections i and ii are presented in full, along with the section headings and subheadings from the rest of the paper, as text 5 below. Halliday's notational conventions for expansion, presented in text 4 above, have been used to show the way in which elaboration, extension and enhancement have been used to develop the macro-genre (logico-semantic relations within sections have not been noted; for enhancement see section 4.1.2.3 below):

5. Innovative Fisheries Management: International whaling

=

There is much to be learned from the evolution of international fisheries management that is applicable to the devlepment of fisheries management in Canada. An interesting case is the management of whaling which I have had the opportunity to follow for a few decades. So, I have decided to focus on whaling as an example of innovative fisheries management, and summarize my perspective under the headings of whales, whaling, international management, the current scene, and some observations about its relevance to the development of Canadian fisheries management.

=

Whales [taxonomising report]

=

There are many species of whales. They are conveniently divided into toothed and baleen categories. The toothed whales are found world-wide in great numbers. The largest is the Sperm whale, which grows to about the size of a boxcar. Other species familiar to Canadians are the Beluga or white whale, the Narwhal with its unicorn-like tusk, the Killer whale or Orca, the Pilot or Pothead whale, which is commonly stranded on beaches, the Spotted and Spinner Dolphins that create a problem for tuna seiners, and the Porpoises which we commonly see along our shores.

There are fewer species of the larger baleen whales, that filter krill and small fish through their baleen plates. The largest is the Blue whale which is seen frequently in the Gulf of St Lawrence. It reaches a length of 100 feet and a weight of 200 tons, equivalent to about 30 African elephants. The young are 25 feet long at birth and put on about 200 lbs. a day on their milk diet. Other species are: the Fins which at a length of 75 ft. blow spouts of 20 ft., the fast swimming Seis, the Grays so commonly seen on migrations along our Pacific coast between Baja California and the Bering Sea, the Bowheads of Alaskan waters, the Rights, so seriously threatened, the Humpbacks enjoyed by tourists in such places as Hawaii and Alaska, the smaller Bryde's whales, and the smallest Minke whales, which continue to be abundant worldwide.

As with the growing interest in birding, increasing numbers of whale watchers can distinguish the various species of whales.

+

Whaling [historical recount]

=

For one thousand years, whales have been of commerical interest for meat, oil, meal and whalebone. About 1000 A.D., whaling started with the Basques using sailing vessels and row boats. They concentrated on the slow-moving Right whales. As whaling spread to other countries, whaling shifted to Humpbacks, Grays, Sperms and Bowheads. By 1500, they were whaling off Greenland; by the 1700s, off Atlantic America; and by the 1800s, in the south Pacific, Antarctic and Bering Sea. Early in this century, the Norwegians introduced explosive harpoons, fired from guns on catcher boats, and whaling shifted to the larger and faster baleen whales. The introduction of factory ships by Japan and the USSR intensified whaling still further.

The global picture, then, was a mining operation moving progressively with increasing efficiency to new species and new areas. Whaling reached a peak during the present century.

While this high-seas drama was unfolding, coastal, shore-based whaling developed around the world. In Canada, for example, it was native whaling for Belugas and Narwhal in the Arctic, and commercial whaling from northern Vancouver Island in the Pacific, and from Quebec, Nova Scotia and Newfoundland in the Atlantic.

+

International Management [historical recount]

...

+

The Current Scene [historical report]

...

x

Relevance to Canadian Fisheries Management [recommendations]

...

Demand Management

...

Management Processes

...

Information: ...
Partnerships: ...
Public participation: ...
Jurisdiction: ...
Perseverance: ...

4.1.2.3 Enhancement (unequal status)

Enhancement (embellishing with circumstantial features of time, place, cause or condition) is illustrated in text 6, a report on dog racing. The sport is defined, then briefly described, before moving on to a description of dog-racing tracks in the second paragraph. At this point the text changes gears; it stops its generic construal of dog-racing as a 'thing', and shifts to an explanation of the manner in which dog races occur. This activity is broken down, step by step, as a process, in the third paragraph by means of an explanation genre (see Christie et al. 1991). The report then resumes with generic description of betting as a thing (note that betting as a process is not explained).

6. [Report, enhanced by an Explanation]

Dog Racing, also called *greyhound racing* , is a sport in which greyhounds compete on an oval track. The dogs chase a mechanical lure that resembles a rabbit. The lure moves around the track on an electric rail. Dog racing developed from *coursing* , an ancient sport in which two dogs chased a live rabbit over an open field. A mechanical rabbit is also an effective lure because greyhounds chase by sight rather than by scent.

Most dog-racing tracks are 1/4 mile (0.4 kilometer) in diameter. Eight greyhounds compete over a distance of 7/16, 3/8 or 5/16 of a mile (0.7, 0.6 or 0.5 kilometer). Champion greyhounds run faster that 40 miles (64 kilometers) per hour.

x Before each race, the greyhounds are put into individual stalls in a starting box. The lure is then started around the track. When the lure is opposite the starting box, the doors of the stalls are opened, and the dogs are released. During the race, the lure is kept several yards ahead of the leading dog. The lure is moved out of sight of the dogs after they cross the finish line, and they stop running.

Dog racing is a popular sport in parts of the United States and several other countries. Fans bet on the grey-hounds through the pari-mutuel system. This system is also used in horse-racing (see HORSE RACING [Betting]). In the United States, bets on dog races total more than $1 billion yearly. George D. Johnson, Jr. [*The World Book Encyclopedia D* Volume 5. Chicago: World Book, Inc.]

Explanations typically appear as enhancing expansions of reports in just this way. Like other enhancing texts, explanations are generally dependent on the texts they expand. Text 6 for example is perfectly coherent without its enhancing explanation, but the same cannot be said for the explanation on its own (the phoric nominal groups *each race, the greyhounds, the lure, the track* for example all presume information from the preceding sections of the report). Similarly, the place at which the explanation occurs is important; it cannot be easily moved around as with the extending texts considered above (see further the discussion of the explanation in text 10 below).

In summary then, macro-genres are developed with respect to all five of the projection/expansion strategies noted by Halliday for the English clause complex: projected locution ("), projected idea ('), expanding elaboration (=), expanding extension (+) and expanding enhancement (x). While the distinction between parataxis and hypotaxis is not a systematic opposition at the level of macrogenres, projected locutions and expanding elaborations and enhancements have relatively equal status with the text initiating them (they can stand on their own), whereas projected ideas and expanding enhancements have a more dependent status with respect to the text that dominates them (they are not free standing elements). These part/part interdependency relations are symmbolised using a dependency arrow in Fig. 15 below, alongside Halliday's notational conventions for the logico-semantic relations involved.

Fig. 15: Part/part interdependency (with notation for projection and expansion variables)

4.2 Experiential analogy — part-whole

The notion of constituency has been very much over-used by linguists, even at the level of grammar where as we have seen it provides an important perspective on the experiential organization of the clause. It is probably also true to say that it has been overworked at the level of genre, where it afforded early break-throughs but has since tended to efface interpersonal, logical and textual considerations. The results of this have been even more serious for spoken than for written texts, since their dynamic nature is less amenable to the synoptic forms of analysis linguists have evolved over the millenia for language which is frozen on a page. Nevertheless, it is important to pursue the experiential analogy at the level of macro-genres since it does provide, especially in writing, an important perspective on the ways in which texts get bigger than a page.

The notion of multivariate part-whole staging has already been illustrated with respect to text 1 above - the historical recount consisting of the stages Orientation ^ Record ^ Reorientation[3]. As noted in section 2.3.1 the notion of parts and whole is complicated in the grammar by the fact that parts theselves may be construed as wholes with parts of their own (the notion of **rank**) and by the fact that wholes may take the place of parts in order for experiential meaning to renew its meaning potential (the notion of **embedding**). Here we will illustrate first rank and then embedding at the level of macro-genre.

4.2.1 Rank

The notion of layers of staging has been widely used in semiotic theory. Barthes for example discusses its application to narrative sequencing in the quotation below:

> "It (a sequence) is also founded *a maximo* : enclosed on its function, subsumed under a name, the sequence itself constitutes a new unit, ready to function as a simple term in another, more extensive sequence. Here, for example, is a micro-sequence: *hand held out, hand shaken, hand released* . This *Greeting* then becomes a simple function: one the one hand, it assumes the role of an indice (flabbiness of Du Pont, Bond's distaste); on the other, it forms globally a term in a larger sequence, with the name *Meeting* , whose other terms (*approach, halt, interpellation, sitting down*) can themselves be micro-sequences." Barthes 1977:102-103

His analysis involves three layers (or ranks): a meeting (or greeting) sequence which consists of five stages, the fourth of which is breaks down into three sub-parts:

> MEETING (greeting):
> approach ^ halt ^ interpellation ^ (hand held out ^ hand shaken ^ hand released) ^ sitting down

Layered staging of this kind is relatively unconscious and contrasts in this respect with the designed layering of other areas of human activity - for example professional tennis, where a season's play consists of a number of tournaments, tournaments of one or more matches, matches of three to five sets, sets of six or more games, games of four or more points, points of one or more strokes (beyond which point segmentation slips below consciousness again, unless it is made visible through coaching). Fig. 16 presents a constituency representation for just three ranks in this activity structure.

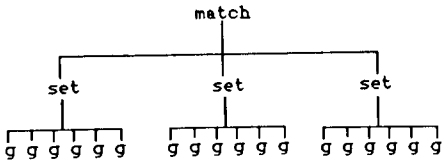


Fig. 16: Three layers of segmentation in professional tennis

[3] Martin (e.g. 1984, 1985/1989, 1986) has generally referred to multivariate generic staging of this kind as **schematic structure**; Hasan (e.g. 1985) uses the term **text structure** for the same phenomenon.

Another example of designed layering is presented in Fig. 17, adapted from Disadvantaged Schools Program 1988:39 (cf. their presentation of the genre as a cycle rather than a constituency tree, a more abstract notion of staging than linguists' constituency models allow). As with the consciously contrived activity of professional tennis outlined above, macro-genres of this degree of complexity require specialised institutionally based training on the part of participants, especially since the macro-genre outlined below takes several days teaching to enact. The texts realising these multi-layered macro-genres are too long to exemplify here. For a partial deconstruction of a text deriving from the curriculum genre under focus here, see Martin and Rothery forthcoming.

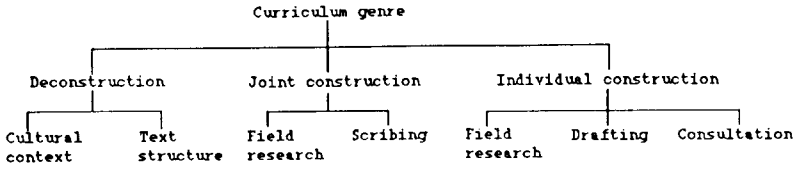


Fig. 17: Layers of staging in literacy oriented curriculum genres based on a functional model of language

It should perhaps be noted again here (cf. section 4.1.2 above) that multivariate structure of this kind can often be given a complementary univariate interpretation basd on the logico-semantic categories presented in section 4.1); each major stage in Fig. 17 for example, Deconstruction, Joint construction and Individual construction, is in some sense an elaboration of the next. Logico-semantic analysis however fails to bring out field specific genre agnation - the inter-relationships between this curriculum genre and other closely related curriculum genres (e.g. traditional or process approaches to teaching writing) and beyond this relationships with macro-genres used in other areas of the curriculum (such as the morning news genre discussed in Christie 1987; see also Gibbons forthcoming on instructional cycles and activity genres in the second language classroom).

4.2.2 Embedding (genre inside a genre)

The notion of inclusion has by and large been overworked when it comes to discussion of intertextuality, dialogism and genre-mixing. In order to sort out some of this imprecision a distinction between part/part expansion and embedding has been developed here. With embedding, a genre is made to function as one multivariate stage in the development of another; embedding is easiest to recognize when this stage is an obligatory element of structure.

Embedding of this kind is found in text 7 below (from Mann and Thompson 1992). Generically this text is a solicitation - a macro-proposal designed to raise money for Zero Population Growth, an American organization concerned with over-population. Experientially it consists of an Involvement stage designed to get the attention of readers, a Product stage giving particulars of

the service offered, and an Appeal section directly soliciting money from potential benefactors[4]. What is interesting in text 7 is that the Involvement stage is itself realised by another genre, a news story, with its own experiential structure Lead and Background. This renewal of meaning potential in the solicitation genre's first stage is outlined in Fig. 18.

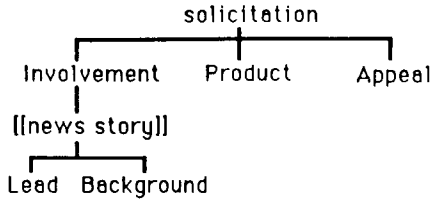


Fig. 18: Embedding in text 7 (news story embedded in solicitation)

Detailed analyses of text 7 from a number of different analytical perspective are included in Mann and Thompson in press. The text is presented only in broad outline here, divided into the generic stages summarised in Fig. 18 above.

7. **Involvement** [[News story genre]]

Lead

At 7:00 a.m. on October 25, our phones started to ring. Calls jammed our switchboard all day. Staffers stayed late into the night, answering questions and talking with reporters from newspapers, radio stations, wire services and TV stations in every part of the country.

Background

When we released the results of ZPG's 1985 Urban Stress Test, we had no idea we'd get such an overwhelming response. Media and public reaction has been nothing short of incredible!

At first, the deluge of calls came mostly from reporters eager to tell the public about Urban Stress Test results and from outraged public officials who were furious that we had "blown the whistle" on conditions in their cities.

Now we are hearing from concerned citizens in all parts of the country who want to know what they can do to hold officials accountable for tackling population-related problems that threaten public health and well-being.

Product

ZPG's 1985 Urban Stress Test, created after months of persistent and exhaustive research, is the nation's first survey of how population-linked pressures affect US cities. It ranks 184 urban areas on 11 different criteria ranging from crowding and birth rates to air quality and toxic wastes.

The Urban Stress Test translates complex, technical data into an easy-to-use action tool for concerned citizens, elected officials and opinion leaders. But to use it well, we urgently need your help.

> Our small staff is being swamped with requests for more information and our modest resources are being stretched to the limits.

Appeal

Your support now is critical. ZPG's 1985 Urban Stress Test may be our best opportunity ever to get the population message heard.

With your contribution, ZPG can arm our growing network of local activists with the materials they need to warn community leaders about emerging population-linked stresses before they reach crisis stage.

Even though our national government continues to ignore the consequences of uncontrolled population growth, we can act to take positive action at the local level.

Every day decisions are being made by local officials in our communities that could drastially affect the quality of our lives. To make sound choices in planning for people, both elected officials and the American public need the population-stress data revealed by our study.

Please make a special contribution to Zero Population Growth today. Whatever you give -$25, $50, $100 or as much as you can - will be used immediately to put the Urban Stress Test in the hands of those who need it most.

A summary of these part/whole strategies for developing macro-genres is presented in Fig. 19 below, including simple staging (a single layer of multivariate structure such as that proposed in Fig. 1 for text 1 above), layered staging such as that suggested for one curriculum genre in Fig. 17 and layered staging with an embedded genre as outlined in Fig. 18 for text 7.

Fig. 19: Part-whole configurations — simple staging, layered staging and layered staging with embedding

5. Textual analogy (periodic)

[4] I am indebted to Christian Matthiessen, who is in turn indebted to Ruqaiya Hasan, for the schematic structure of this solicitation genre.

The notion of textually inspired periodic structure has already been introduced in section 4.1.2.1, since the textual metafunction makes use of elaboration to construct waves of prominence at the level of macro-genres. In borrowing this ideational resource the textual metafunction can be seen to function at this level in much the same way as it operates in the grammar. The clause *What the Norwegians did was introduce explosive harpoons* was analysed experientially in Fig. 7 above, by way of introducing the notion of grammatical embedding; it was mentioned in passing there that this clause was a textual variation on *The Norwegians introduced explosive harpoons* . The textual effect of the relational identifying process used in this variation is to divide the clause's experiential meaning clearly into two parts, Theme -*What the Norwegians did* and New - *introduce explosive harpoons* , with the Token elaborating the Value. This pattern of experiential meaning in the service of the textual metafunction is outlined in Table 3. Elaboration is used in precisely the same way to construct a wave of information in text 1.

What the Norwegians did **was** **introduce explosive harpoons**

Value	=	Token	experiential
Theme ⟶	Rheme		textual
Given	⟵	**New**	

Table 3: Textual deployment of 'elaboration' at clause rank

As noted in section 4.1.2.1 text 1 begins with a hyper-Theme (the Topic sentence of traditional composition teaching): *For one thousand years, whales have been of commercial interest for meat, oil, meal and whalebone.* This hyper-Theme makes precise predictions about the pattern of clause Themes which follows (it predicts the text's method of development in Fries' 1981/1983 terms): *about 1000 A.D.; as whaling spread to other countries; by 1500; by the 1700s; by the 1800s; early in this century; while this high seas drama was unfolding* [5]. This pattern of anticipation and thematic fulfillment is outlined in Fig. 20 below.

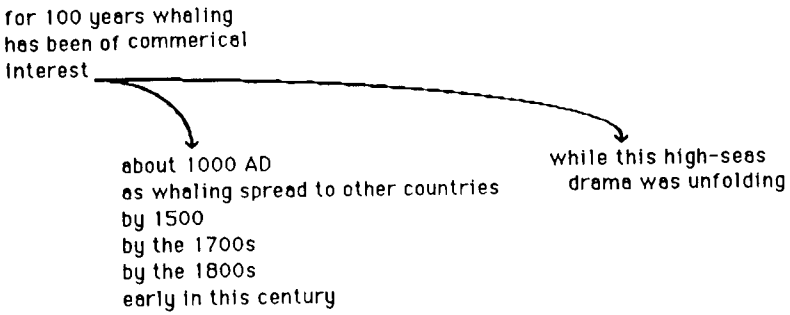


Fig. 20: Hyper-Theme and method of development in text 1

[5] The analysis has been extended here to include the text's third paragraph, presented in text 5 above.

At the same time, text 1 can be read retrospectively, in terms of its hyper-New: *The global picture, then, was a mining operation moving with increasing efficiency to new species and new areas.* The text's hyper-New has the complementary function of consolidating what Fries calls a text's point - the information it constructs as news. The relevant hyper-New/New proportionalities are as follows:

> with increasing efficiency :
> with the Basques using sailing vessels and row boats; explosive harpoons, fired from guns on catcher boats; still further ::
>
> to new species :
> the slow-moving Right whales; to Humpbacks, Grays, Sperms and Bowheads; to the larger and faster baleen whales ::
>
> and new areas :
> off Greenland; off Atlantic America; in the south Pacific, Antarctic and Bering Sea

The way in which text 1's hyper-New accumulates and consolidates news is outlined in Fig. 21. The consolidation makes the point of text 1 portable, enabling it to participate in higher-level waves of information in the paper as a whole.

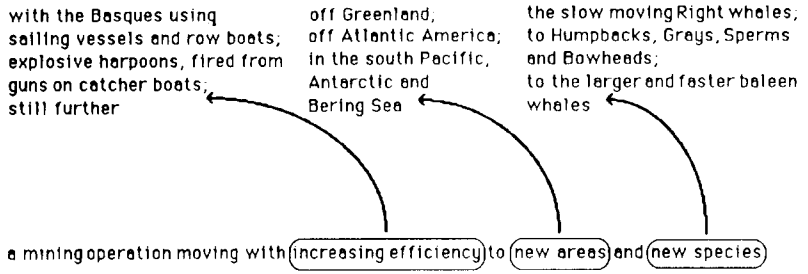


Fig. 21: Hyper-New and point in text 1

Higher levels waves of information are a very important structuring principle, especially in written macro-genres. Martin's paper for example is introduced by Bielak, the program chairman; Martin in turn introduces the staging of his macro-genre (see text 5 above); and he introduces his whaling recount as we have seen. This hierarchy of introductions can be interpreted textually as a hierarchy of Theme:

> PREDICTION (levels of theme):
>
> In the same spirit, the Fisheries Committee Chairman, Dr. Robert Martin, has, on behalf of the CWF, invited some very distinguished speakers from across Canada to tell you something about innovative fisheries management being practised in their next of the woods. (Bielak's Introduction to the papers; 1989a:v)

So, I have decided to focus on whaling as an example of international innovative fisheries management, and summarize my perspective under the headings of whales, whaling, international management, the current scene, and some observations about its relevance to the development of Canadian fisheries management. (Martin's Introduction to his paper; 1989:1)

For one thousand years, whales have been of commercial interest for meat, oil, meal and whale-bone. (Martin's introduction to his whaling Recount; 1989:1)

At the same time the publication as a whole is structured with respect to a hierarchy of News. Martin consolidates the point of his whaling recount (*a mining operation...*), and then draws directly on this consolidation in his recommendations (*the whaling experience of mining whale resources...*)[6]; later in his program Chairman's synthesis, Bielak consolidates the point of Martin's paper as a whole:

CONSOLIDATION (levels of news)

The global picture, then, was **a mining operation** moving progressively with increasing efficiency to new species and new areas. (Martin's summary of his whaling Recount; 1989:1)

In spite of **the whaling experience of mining whale resources** until innovative approaches could be applied to whaling management, we continue to mine our high seas fisheries resources. (Martin's invocation of his whaling Recount in his recommendations; 1989:3)

Dr. Martin's presentation on international whaling gave us food for thought. Despite strong science which indicated a clear need for the protection of various whale species, the environmental movement was the key catalyst in focussing public attention on the issues, and this only after fifty years. (Bielak's summary of Martin's paper in his Program Chairman's Synthesis; 1989b:27)

The point being developed here is that textual meaning construes semiotic reality with respect to a hierarchy of periodic structure. The complexity of this hierarchy is in principle dependent simply on the amount of semiotic reality being organized: the more meanings made, the more elaborate the levels of periodic structure needed to make them digestible as read and retrievable when stored. A very partial gesture is made towards this texturing principle in Fig. 22 below.

[6] For discussion of the ideological implications of this kind of field shifting consolidation, see Martin 1986.

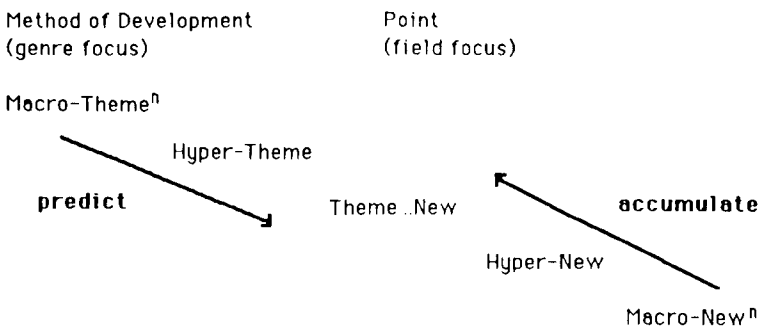


Fig. 22: Prediction, accumulation and waves of texture in macro-genres

Applying this framework to the whole of Bielak 1989, gives us the picture in Table 4, beginning with the outermost wave and working in. Periodic structure within the papers has not been included here.

Layers of 'Theme'	**Layers of 'News'**
Table of Contents	Biographies (of authors)
Introduction (Bielak)	Program Chairman's Synthesis (Bielak)
Martin's Introduction	...his concluding 'Relevance to fisheries management'
Griggs' Introduction	...his concluding 'Problems & future directions'
Beamish's introduction	...his summary
Cote's Introduction	...his 'Conclusion'

Table 4: Waves of Theme and new in Bielak 1989

It is important to note in passing that the periodic structure just outlined is masked by particulate organisation of the publication as a whole as summarised in its Table of Contents. The overall particulate structure is as follows, presented here by way of contrast with Table 4:

Editor's Note (Bielak)
x
Introduction (Bielak)
=
Innovative Fisheries Management: international whaling (Martin)
+
Innovations in Fisheries Management on the West Coast (Griggs)
+
Innovations in Fisheries Management in Central and Northern Canada (Beamish)
+
Innovative Fisheries Initiatives in Eastern Canada (Cote)

Tables [1-5]
=
Program Chairman's Synthesis (Bielak)
+
Biographies [Martin, Griggs, Beamish, Cote, Bielak]

Simply to complete the picture here it is also worth noting that professional scientific drawings of fish and whales are included on every odd numbered page of the publication as a whole and on its front and back covers. None of these is specficially projected by the text itself, although species 'relevant' to the discussion are included in each section (i.e. whales in Martin's paper, fish elsewhere). The fact that these drawings are not projected, and are realised continuously through the text, indicates that their function is interpersonal rather than ideational - decorative rather than instrumental in *Innovative Fisheries Management Initiatives* (Bielak 1989).

By way of summing up this section, an iconic representation of thematic prediction and consolidated news is offered in Fig. 23. Note that the figure does not capture of notion of hierarchic periodicity, which as we have seen is an important texturing principle in macro-genres.

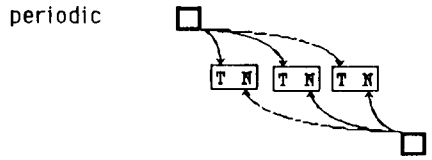


Fig. 23: Prediction, accumulation and periodicity

6. Contextual conditioning (dynamic open system)

Like all evolved systems, including semiotic and non-semiotic ones, genre is a dynamic open system (see Lemke 1984). As such it is metastable (cf. Mathiesius 1964 on static oscillation), something that can only be achieved through continual exchange of information with the environment. It is through this ongoing exchange that systems evolve.

Seen from the perspective of metastability, the resources for generic development outlined in section 3, 4 and 5 above can be re-interpreted as generic resources for adjusting social processes to their environment. Expansion resources in particular are especially valuable in this respect. To illustrate contextual adaptation of this kind, consider text 8 below (section i of text 5 above). This text is a scientific report written by a marine biologist which constructs an uncommon sense classification of whales. The occasion of this report is the 1989 meeting of the Canadian Wildlife Federation; the report is part of a paper constituting part of a panel of presentations concerned with innovative fisheries management. The Canadian Wildlife federation by and large is an organisation of anglers, hunters and other 'harvestors' who are in general concerned with managing the environment as a renewable resource. The overall thrust of the panel's recommendation is that Canadain freshwater fisheries should be developed for recreational rather than commercial fishing purposes.

8. Whales Report (Canadian Wildlife Federation Meeting)

There are many species of whales. They are conveniently divided into toothed and baleen categories. The toothed whales are found world-wide in great numbers. The largest is the Sperm whale, which grows to about the size of a boxcar. Other species familiar to Canadians are the Beluga or white whale, the Narwhal with its unicorn-like tusk, the Killer whale or Orca, the Pilot or Pothead whale, which is commonly stranded on beaches, the Spotted and Spinner Dolphins that create a problem for tuna seiners, and the Porpoises which we commonly see along our shores.
+
There are fewer species of the larger baleen whales, that filter krill and small fish through their baleen plates. The largest is the Blue whale which is seen frequently in the Gulf of St Lawrence. It reaches a length of 100 feet and a weight of 200 tons, equivalent to about 30 African elephants. The young are 25 feet long at birth and put on about 200 lbs. a day on their milk diet. Other species are: the Fins which at a length of 75 ft. blow spouts of 20 ft., the fast swimming Seis, the Grays so commonly seen on migrations along our Pacific coast between Baja California and the Bering Sea, the Bowheads of Alaskan waters, the Rights, so seriously threatened, the Humpbacks enjoyed by tourists in such places as Hawaii and Alaska, the smaller Bryde's whales, and the smallest Minke whales, which continue to be abundant worldwide.
x
As with the growing interest in birding, increasing numbers of whale watchers can distinguish the various species of whales. (Martin 1989:1)

Of special interest here is the enhancing final paragraph, which on the face of it seems out of place in this report. Synoptically speaking, embellishing the report with this comparison between bird watching and whale watching is unpredictable; certainly it adds nothing to the classification of whales constructed in the two preceding paragraphs. Ecologically speaking however, given the social context of this report, the enhancement is more than appropriate. It makes an important connection between the recreational use of whales and birds, which is of considerable relevance to the panel's recommendations for the future of freshwater fisheries. Indeed, this enhancement is strongly predicted throughout text 8, where technical nominal groups are elaborated wherever possible to make connection with the more familiar everyday experiences of this audience of non-scientists:

the Sperm whale, which grows to about the size of a boxcar
the Beluga or white whale,
the Narwhal with its unicorn-like tusk,
the Killer whale or Orca,
the Pilot or Pothead whale, which is commonly stranded on beaches,
the Spotted and Spinner Dolphins that create a problem for tuna seiners,
the Porpoises which we commonly see along our shores
...

The text in other words exploits the openness inherent in the semiotic system of genre from which it derives. For another example of this kind of environmental response, consider text 9, from a junior secondary science textbook. Generically this text is an explanation, which is itself enhancing part of chapter-long taxonomising report on micro-organisms. Before concluding the explanation is itself embellished with a comment one effect of the life cycle of the malaria parasite - tourists' need for special medication when visiting 'malaria' countries. This enhancement is ecologically motivated by ideological tensions within science education in general, one response to which has been to publicly rationalise science as useful and relevant.

9. Malaria parasite explanation (Junior Secondary science textbook)

[One such protozoan is the malaria parasite, the cause of malaria fever in man and other warm blooded vertebrates (Figure 8.4).] x The parasite enters the red blood cell where it feeds and grows until it fills almost the total volume of the cell. It then divides into a number of offspring. When the cell breaks up, the young and various waste products are set free into the circulating blood of the infected person. These toxic wastes cause an attack of chills and fever. The offspring next enter new red blood cells and repeat the above story producing new batches of offspring. In this way there are soon produced millions of parasites which destroy a large percentage of the red blood cells.

If a mosquito bites and sucks blood from an infected person, the cycle in continued. In the stomach of the mosquito, a special type of sexual reproduction takes place, producing an active worm-like form of protozoa. They wriggle through the mosquito's stomach wall where wort-like lumps containing the protozoa form. They then divide in two to form thousands of slender offspring which move to the salivary glands of the mosquito and are injected into the wound when the infeced mosquito bites a man. The parasites then invade the red blood cells, and the cycle is started again. x **Tourists visiting 'malaria' countries take tablets before, during and after their trip to prevent infection by this most serious disease.** (Shea 1988:131, from Heffernan and Learmonth 1982a)

As far as genre evolution is concerned (cf. Kress 1985/1989a:85-95; 1989b), what is at issue is the long term impact of enhancements of this kind on taxonomising reports and life-cycle explanations. Are these embellishments more than nonce adjustments - more than occasional contextually specific negotiations between genres and their environment? Does metastability lie in the direction of generic inertia and the effacement of expansion of this kind? Or is the environment of these texts such that adjustments of just these kinds will systematically recur? Does metastability lie in fact more in the direction of evolution and the synoptic incorporation of these manoevres as predictable multivariate stages in the experiential structure of the respective genres? Whatever the answer to these questions, it is clear that metastability is driven by ideological tensions within a culture, and between cultures and their other than semiotic environments. The dynamic openness inherent in genre as system is fundamental to the resolution of these tensions, keeping in mind that resolutions will be themselves immediately involved in on-going negotiations with tensions of other kinds.

7. Macro-genres

In this section we will summarise the strategies proposed above to explain the ways in which texts get bigger than a page. In addition we will briefly review some of ways in which these strategies are distinguished graphologically in written texts.

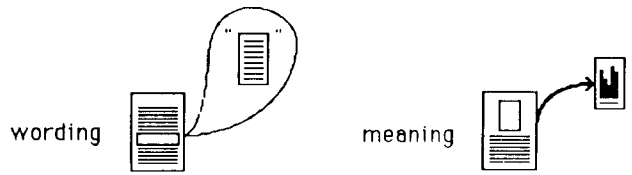
Ideational strategies involve projection and expansion. With projected wording, one text is quoted by another. The quoted material is typically formatted differently from the quoting text - in quotation marks if not too long, indented and placed in a separate paragraph if long, possibly using a different type-face, with specialised lay-out if the text is projected as a document and so on. The source of authored material will also be given, in one step, by means of footnotes, or in two steps, usually including name and date in the projected or projecting text and elaborating this information subsequently in lists of references or bibliographies. With projected meaning, the 'content' of the projecting text is 're-grammaticalised' as an alternative form of semiosis - as a graph, figure, table, drawing etc. These projections will be elaborated by titles and numbers in order to clarify their intertextual dependence on the verbal semiosis projecting them. In books the names of these projected meanings are often accumulated in lists of figures and tables for the volume as a whole.

Turning to expansion, one text develops another through elaboration, extension or enhancement. With extension, one text is appended as an addition or alternative to another. Extension tends to be directly reflected in the organisation of macro-genres into paragraphs, sections, chapters and so on. Sections and chapters will be elaborated with titles and headings, which are themselves accumulated in a Table of Contents. Enhancements, perhaps because of their more dependent status, do not appear to be strongly foregrounded by graphological conventions.

Graphologically, it would appear that part/whole structures are treated in the same way as part/part extensions. If following Halliday (1985a:240-248; 306-307) or Martin (1992b, in press) we re-address part/whole multivariate configurations as synoptic forms of expansion, then our ideational strategies for developing texts as macro-genres can be summarised as in Fig. 24 below.

Ideational strategies

Projection



Expansion

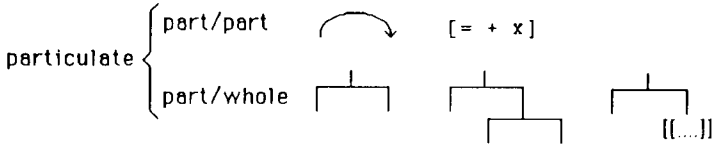


Fig. 24: Ideational strategies for the development of macro-genres

Interpersonally, macro-genres develop through the amplification of mood, modalization, attitute and so on. 'Radical' texts sometimes make use of iconic formatting (e.g. size of font, bold-face, outline, shadow etc.) to highlight the relevant repetition. Any attendant semiosis (e.g. music, paralanguage, kinesics, dance etc.) typically resonates with interpersonal crescendos or diminuendos generated by the verbal text. An iconic representation of this amplfication strategy is offered again here, by way of summary, in Fig. 25.

Interpersonal strategy

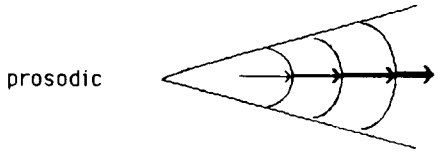


Fig. 25: Amplification as a resource for developing macro-genres

Textually, macro-genres organise themselves with respect to pulses of informational prominence. The most relevant aspect of graphology is the use of titles and headings to name sections of text or projected meanings (i.e. tables, figures etc.). In addition, levels of periodic structure imply a culminative form of realisation, so that the beginning and end of each layer in the organisation of a text is especially significant from the perspective of textual meaning. An iconic representation of this periodic strategy is offered again here, by way of summary, in Fig. 26.

Textual strategy

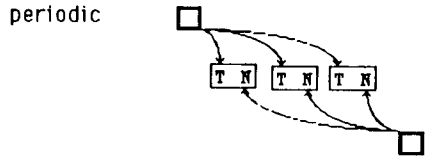


Fig. 26: Prediction and consolidation as waves of texture

As a final note, it is important to recognize that projected wordings and meanings are related to projecting texts through expansion as well as projection. The projected meanings in diagrams for example typically elaborate their projecting verbiage, reformulating verbiage as image. The simultaneity of these expansion and projection principles is outlined in Fig. 27[7].

[7] Textual macro-structure is subsumed under expansion in this diagram, to capture the way in which it deploys elaboration to establish periodicity.

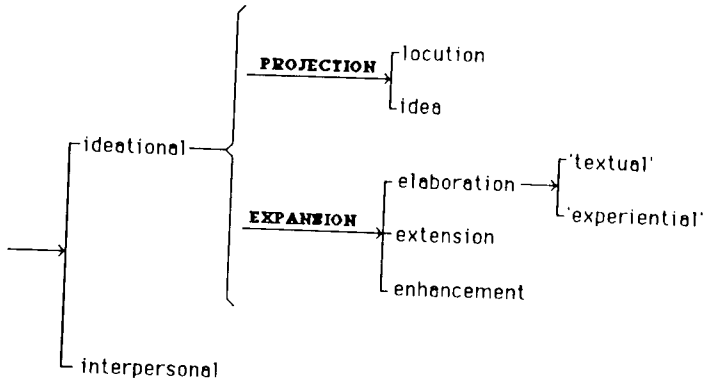


Fig. 27: Expansion and projection as simultaneous ideational principles for genre extension

8. The ecology of genre (after Shea 1988)

At this point it may prove useful to illustrate the deployment of some of the strategies outlined in Fig.'s 24, 25 and 26 above in a text that is bigger than a page. The text chosen for this purpose is the chapter 'Living things too small to see' from Heffernan and Learmonth 1982a. This chapter was analysed in detail in Shea 1988, whose groundwork is being reformulated here. Only ideational strategies, projection and expansion, will be considered.

Working in from its outer layers of development, this chapter opens, like others in the textbook, with a List of Aims, which is immediately elaborated in an Abstract. The Abstract is then elaborated by the body of the chapter, which consists of reports on Protozoa, Bacteria and Viruses; these three main reports are then elaborated by Revision Questions. This outer scaffolding can be summarised as follows:

List of Aims
=
Abstract
=
Protozoa
+
Bacteria
+
Virus
=
Revision Questions

The three reports constituting the body of the text each begin with what Shea calls a Cue (in each case here realised by a Heading); the Cue is then elaborated by a report on protozoa, bacteria and viruses respectively, each of which is in turn elaborated by Revision Questions. This layer of the text's development can be outlined as follows (Shea uses the term Taxonomic Segment for the descriptive body of these taxonomy oriented reports):

Cue (heading - Protozoa)
=
Taxonomic Segment (protozoa)
=
Revision Questions
+
Cue (heading - Bacteria)
=
Taxonomic Segment (bacteria)
=
Revision Questions
+
Cue (heading - Virus)
=
Taxonomic Segment (viruses)
=
Revision Questions

Further exploring the first report on protozoa shows that the descrption of protozoa in general is itself elaborated by a report on types of protozoa. This report beings with its own Cue (the heading Types of Protozoa), which is elaborated by four reports focussing on flagellates, pseudopodia, ciliates and sporozoans:

Cue (heading - Protozoa)
=
Taxonomic Segment (protozoa)
=
Cue (heading - *Types of protozoa*)
=
Taxonomic Segment (flagellates)
+
Taxonomic Segment (pseudopodia)
+
Taxonomic Segment (ciliates)
+
Taxonomic Segment (sporozoans)
=
Revision Questions

A closer look at this protozoa section reveals a dependent enhancing explanation inside the description of protozoa in general, and one or more further explanations inside each of reports focussing on subtypes of protozoa (the sporozoans report, including its explanation, will be followed up below):

Cue (heading - Protozoa)
=
Taxonomic Segment (protozoa)
...x Explanation...
=
Cue (heading - *Types of protozoa*)
=
Taxonomic Segment (flagellates)
...x Explanations...
+
Taxonomic Segment (pseudopodia)
...x Explanations...
+
Taxonomic Segment (ciliates)
...x Explanation...
+
Taxonomic Segment (sporozoans)
x Explanation **[malaria]**
=
Revision Questions

Unfortunately there is no space here to pursue the description of this macro-genre in similar detail. An schematic analysis of the complete chapter at the level of macrogenre is presented below. Note that the chapter includes short biographies of three scientists famous for their work controlling harmful protists: Jenner, Lister and Fleming. These biographies are boxed in and quoted as a separate document by the main body of text. In addition the chapter projects eight figures.

List of Aims
=
Abstract
x Exposition (protista kingdom)
=
Cue (heading - Protozoa)
=
Taxonomic Segment (protozoa)
...x Explanation...
=
Cue (heading - *Types of protozoa*)
=
Taxonomic Segment (flagellates)
...x Explanations...
+
Taxonomic Segment (pseudopodia)
...x Explanations...
+
Taxonomic Segment (ciliates)
...x Explanation...
+
Taxonomic Segment (sporozoans)
x Explanation **[malaria]**
=
Revision Questions
+
Cue (heading - Bacteria)
=
Taxonomic Segment (bacteria)
...x Experiment (heading - **Experiment 8.1** *Growing Bacteria*)...
=
...Taxonomic Segment (autotrophs)
+
Taxonomic Segment (heterotrophs)... "[3 biographies]
+
...Cue (heading - *Useful Bacteria*)
=
Taxonomic Segment
...x Explanations...
+
Cue (heading - *Bacteria and disease*)
=
Taxonomic Segment
...x Explanations...
=
Revision Questions
+
Cue (heading - Virus)
=
Taxonomic Segment (viruses)
...x Explanation...
=
Revision Questions
=
Revision Questions (whole chapter) "[Figures 8.1-8.8] throughout...

Generic development is this kind obviously places tremendous demands on young readers, many of whom require considerable support from secondary teachers when being apprenticed into discourse of this kind. In recent years many schools have responded to this challenge by avoiding it completely - by eliminating textbooks from the curriculum and replacing them with the odd page of xeroxed material (i.e. fragments of macro-genres) and oral presentations. This makes the job of learning to handle written dsicourse of this kind even more difficult for students, who are furthermore dependent on materials of this kind as models of factual writing (Wignell 1987); factual writing is after all not taught in most Australian secondary schools and so students are forced to learn it themselves, largely by copying directly from textbooks or equally complicated

research materials. In short, removing models of macro-genres from secondary classrooms is no solution to the reading and writing problems encountered by many students. It simply effaces the co-textual and intertextual strategies reviewed in this paper from the curriculum.

In closing then, let's look in a little more detail at the discursive manouevres that are being obscured, focussing on the sporozoans report in the Heffernan and Learmonth chapter outlined above, and considering its explanation in particular (previously presented as text 9 above). This report is presented as text 10 below. Text 10 arises as an extension of the immediately preceding report on ciliates. It begins with a generic description of the class, which is then elaborated through exemplification - the malaria parasite. This parasite is no sooner introduced than the report shifts gears into an enhancing explanation which deals with its life cycle. The explanation begins with the part of the life cycle that takes place inside humans; this is then enhanced with respect to the part of the life cycle that takes place inside mosquitos. This explanation is then enhanced with a comment on the relation between this life cycle and preventive medicine, before the text moves on to an elaboration through revision questions. The text, scaffolded with respect to these developments, unfolds as follows:

10. ... [preceding report]

+ [extending to the 4th class of protozoans]

The fourth class of protozoans, called sporozoans, is all parasitic. To complete their life cycle, these parasitic protozoa often have to live in two different animals. They usually cannot move about by themselves. These protozoans cause disease in many types of animal, including man.

= [elaborating by exemplifying the 4th class]

One such protozoan is the malaria parasite, the cause of malaria fever in man and other warm blooded vertebrates (Figure 8.4).

x [enhancing by explaining the malaria parasite life cycle - humans]

The parasite enters the red blood cell where it feeds and grows until it fills almost the total volume of the cell. It then divides into a number of offspring. When the cell breaks up, the young and various waste products are set free into the circulating blood of the infected person. These toxic wastes cause an attack of chills and fever. The offspring next enter new red blood cells and repeat the above story producing new batches of offspring. In this way there are soon produced millions of parasites which destroy a large percentage of the red blood cells.

+ [exhancing by continuing the malaria parasite life cycle - mosquitos]

If a mosquito bites and sucks blood from an infected person, the cycle in continued. In the stomach of the mosquito, a special type of sexual reproduction takes place, producing an active worm-like form of protozoa. They wriggle through the mosquito's stomach wall where wort-like lumps containing the protozoa form. They then divide in two to form thousands of slender offspring which move to the salivary glands of the mosquito and are injected into the wound when the infeced mosquito bites a man. The parasites then invade the red blood cells, and the cycle is started again.

x [enhancing with a comment on malaria prevention]

Tourists visiting 'malaria' countries take tablets before, during and after their trip to prevent infection by this most serious disease.

= [elaborating to revision questions]

...

As far as science is concerned, the positioning of this life-cycle explanation is very important. Control of the parasite and prevention of disease depends critically on knowledge of the place of the parasite in the order of living things, which knowledge is being constructed by the chapter overall. The scientific taxonomy being constructed is presented in Fig. 26 below. Written scientific English has evolved over the centuries to efficiently document and construct knowledge of this kind (see Halliday 1988, 1990, Wignell et al 1987/1990, Martin 1989, 1990, Halliday & Martin 1993 for discussion). Students who cannot read scientific English cannot learn science; and students who cannot write scientific English cannot prove publicly that they have learned science and have little hope of eventually participating in its ongoing development. For similar reasons, across disciplines, the effacement of macro-genres is currently a literacy crisis in Australian secondary education.

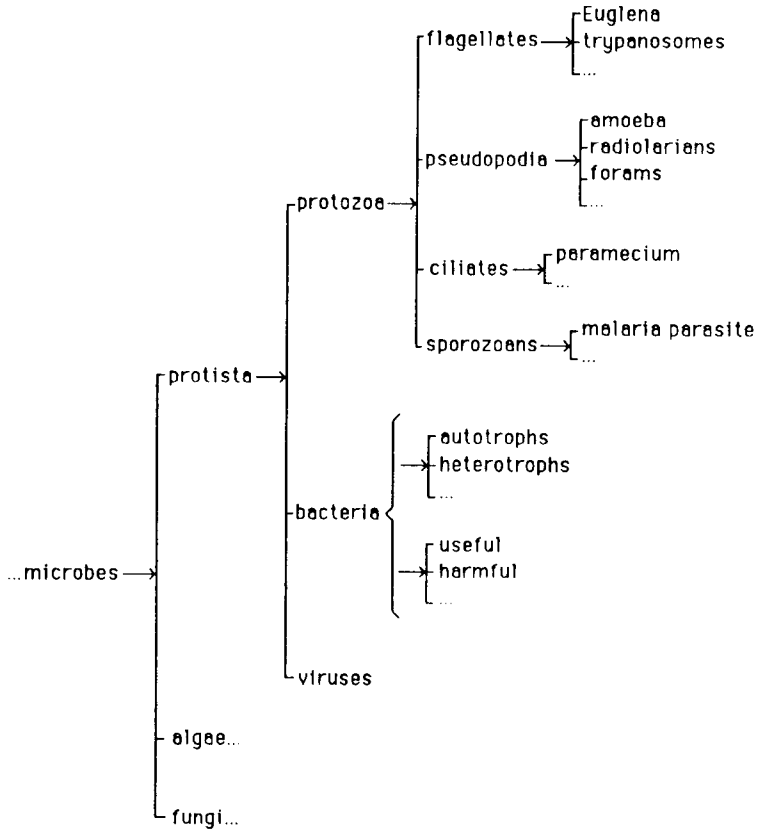


Fig. 26: Taxonomy of microbes established in 'Living Things too Small to See' (organising principle for Chapter 8 - Macro-Report)

9. Applications

What about these students who have not mastered the discourse of macro-genres. How do they write? And what can be done about it? Martin 1985/1989 introduced the following example of geography writing from a Year 10 geography class in one Sydney secondary school; the text is quite typical of writing by migrant students at the point of completing their education in Australian schools. The original text was written as a single paragraph in response to the question 'Why are governments necessary? Give reasons for your answer.'

11. (ORIGINAL 'SPOKEN ENGLISH' VERSION; 'writing as you speak')

a. I think Governments are necessary
b. because if there wasn't any
c. there would be no law
d. people would be killing themselves.
e. They help keep our economic system in order for certain things.
f. If there wasn't no Federal Government
g. there wouldn't have been no one to fix up any problems that would have occured in the community.
h. Same with the State Government
i. if the SG didn't exist
j. there would have been noone to look after the school,
k. vandalism fighting would have occured everyday.
l. The local Government would be important to look after the rubbish
m. because everyone would have diseases.

This text is written in a non-standard dialect of Australian English. Note however that revising its 'grammar, punctuation and usage' as in 11' below does not improve its texture.

11'. ('WRITTEN ENGLISH' VERSION; revising 'grammar, punctuation & usage')

a. I think Governments are necessary
b. because if there weren't any
c. there wouldn't be any law:
d. people would be killing themselves.
e. They help keep our economic system in order for certain things.
f. If there weren't any Federal Government
g. there wouldn't be anyone to fix up any problems that occur in the community.
h. It's the same with the State Government -
i. if the State Government didn't exist
j. there wouldn't be anyone to look after the schools;
k. vandalism and fighting would occur everyday.
l. The local Government is important to look after rubbish,
m. because otherwise everyone would have diseases.

For improvements of this kind the student in question needs further resources. The ideational, interpersonal and textual strategies for develoing texts as macro-genres provide one set of tools that could be used to intervene in writing of this kind.

To begin, elaboration could be used to construct an introduction and conclusion for the text; and extension could be used to distinguish its three arguments. The text is re-scaffolded along these lines as 11", where conjunctions have been added to reinforce the expansion suggested. Note that to this point the experiential meaning of the text has not been changed; the texture of the text has simply been reworked.

11". (RE-ORGANISED VERSION; revising theme and conjunction)

a. I think Governments are necessary at *different levels* for **a number of reasons.**
b. They make laws, without which people would be killing themselves,
c. and help keep our economic system in order.
=
d. **To begin**, the Federal Government fixes up problems that occur

in the community.

+

e. **Similarly,** the State Government looks after schools,

f. preventing vandalism and fighting.

+

g. **Finally** the Local Government is important to look after rubbish:

h. otherwise everyone would have diseases.

=

i. **As a result of these factors,** Governments at *several administrative levels* are necessary.

Beyond this there are many directions in which to go. The text's three extending segments stand in need of elaboration. One or more of these could be enhanced with an explanation focusses on processes of government. As the text developed there might be occasion for projected wordings or meanings of appropriate kinds. The question of waves of texture could be further addressed (elaboration has already provided the text with culminative peaks of informational prominence). And the text's adequacy as a piece of written argumentation (i.e. exposition) could be explored: how effective is it's Thesis, Arguments and Re-iteration? How well does it make its case? And so on.

Politically, resource oriented teaching of this kind may prove a useful counter-balance to reductive interpretations and implementations of genre-based literacy pedagogy. At their worst, these interpretations and implementations reduce the pedagogy to a prescriptive concern with experientially derived part/whole staging. Reductivity of this kind is particularly common when the pedagogy is abstracted from its foundation in a functional model of language and a language based theory of learning (for an insider's review of more than a decade of research using a functional theory of this kind see Martin 1991b). Modelling complementary particulate, prosodic and periodic structures dynamically as a set of resources for developing text may also prove useful in generalising literacy skills across instutitional contexts, something which is difficult to achieve when focussing attention on the discipline sensitive aspects of the more elemental genres.

Nor is it simply beginner's discourse that is at issue here. Over the years for example I have been extremely puzzled by some of the oral presentations given by large numbers of academics at national and international conferences. How can it be that after twenty, thirty or forty years in the trade someone can deliver a paper which is unintelligible to large sections of a sympathetic audience? One obvious factor here is mode: many academics read aloud papers that have been written for publication and which have not been written to be read aloud (a year of script writing should perhaps be prescribed). In reaction to this, one solution Christian Matthiessen and I have been exploring over the years[8] involves producing a lenghty handout which consists almost entirely of headings (i.e. an outline of the particulate structure of the text) and projections (i.e. quoted texts and attendant figures, tables, graphs etc.). Delivering a handout of this kind generates spoken language, not writing, at the same time as the handout synoptically scaffolds the ideational organisation of the 'talk' for listeners. As far as we can tell, the results of this selfconsciously designed macro-genre are effective, in relation to both students and colleagues. Perhaps the moral here is that we are never too old to learn from our deconstructions of semiosis as a resource.

10. Conclusion

[8] Personal computing (including word processing and drawing programs), it should be noted, has greatly facilitated this approach.

In this paper a provisional defence has been constructed for the integrity of the page. Basically it has been suggested that the genres which systemic and educational linguists have been examining now for some years are in some sense elemental, and that longer texts are best understood as developments of these. Drawing on the grammar, a model of the ways in which macro-genres are developed out of elemental genres was proposed, making use of the various structuring devices associated with ideational, interpersonal and textual meaning.

In terms of consciousness, the more elemental genres like report, procedure, explanation, exposition, anecdote, exemplum, recount and so on probably represent units of meaning that are naturally facilitated; like grammar, they sink from consciousness once their structure is learned. With macro-genres on the other hand, some degree of consciousness or next to consciousness probably always remains. It takes planning and/or specialised institutionally based training to manage the longer texts, and it is hard work writing or talking them - to get good at them, you have to hang around. Along with this goes the more dynamic nature of the macro-genres. It is easy to see how they have been developed once they're there; but it is not so easy to predict where they are going before they start. Thus the appropriacy of the notions of strategy and resource, and big genres' frustration of the notions of prescription and rule. This is not to argue, I should add, that more elemental genres should be approached from the perspective of prescription and rule; strategy and resource are critical notions there as well. But it remains true that the synoptic predictability of elemental genres invites pedagogic abuse and critical misunderstanding in a way that is subverted by macro-genres.

Finally it is worth noting that the orientation to textual analysis adopted here has been an ecological one. The elasticity of text is something that can only be explored by considering i. the environment in which a text occurs, including its co-texts, ii. the semiotic system from which it derives (i.e. the systemic account of texts which are immanent, and so relevant, but not materially around), iii. any attendant semiosis of a non-verbal kind and iv. any repercussions for the non-semiotic environs in which we as a species are struggling to survive (accepting of course that these environs can only be explored if semiotically construed). In Australia, progressive education has done a tremendous disservice to an ecological perspective of this kind by systematically effacing the contextual environment of the page - eliminating its co-text and reducing its contextual relevance to questions of personal experience and common sense. The time for modernist initiatives of this kind and the kind of distribution of literacy they entail has passed. In a post-modern era, an environmentalist, not an idealist perspective is required - precisely the kind of perspective a functional model of language affords.

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Geoffrey Sampson, *Schools of linguistics: competition and evolution.* (Hutchinson University Library.) London: Hutchinson, 1980. Pp. 283.

Schools of linguistics is a valuable survey of 20th century linguistic theory. Beginning with a discussion of 19th century historical linguistics, Sampson goes on to discuss the following 'schools': Saussure, the Descriptivists (including American structural linguistics from Boas to Harris), the Prague School, TG Grammar and Generative Phonology, Relational Grammar (embracing Hjelmslev and Stratificational Linguistics) and the London School (covering Firthian, Neo-Firthian, and Systemic approaches). In addition Sampson includes a chapter on the Sapir-Whorf hypothesis which does not, as one might at first have expected, deal with American anthropological linguistics as a school. No survey of this kind could fail to be stimulating, but Sampson has produced a very readable and at times provocative book as well. It updates and treats at a more advanced level much of the material presented in Dineen 1967, while avoiding the often abstruse and needlessly technical account in Davis 1973. As such, *Schools of linguistics* should prove a useful addition to reading lists at the advanced undergraduate and postgraduate levels.

Linguists familiar with Sampson's linguistic views will not be surprised to find schools presented very much from a 'generalist' as opposed to a 'particularist' perspective (to use the terms from Sampson 1975:4). That is, if we divide linguists into those with a philosophical/psychological world view (the phoneme-to-neuron or phoneme-to-reality group) and those with a descriptive/ethnographic orientation (the phoneme-to-culture or phoneme-to-social-reality group), then Sampson falls rather extremely into the former category. At the beginning of *The form of language*, for example, Sampson thanks Chomsky 'for CREATING the subject' (1975:viii; emphasis added) on which he has written; and in *Liberty and language* (1979:9) he describes himself as linguistically speaking more Chomskyan than Chomsky (politically of course the two are polar opposites). Given this orientation, it is somewhat ironic that one's two lasting impressions of *Schools of linguistics* have to do with: (i) the very critical (I should perhaps say 'irreverent') stance adopted with respect to TG Grammar and Generative Phonology, both schools with

a strong philosophical/psychological orientation; and (ii) the very friendly stance adopted with respect to the Prague and London Schools, whose ethnographic orientation is well known. Unfortunately this friendly stance does little to mitigate, and functions almost as an apology for, the anti-ethnographic bias which leads Sampson to gloss over social and functional interpretations of language in several chapters.

In this review I will concentrate on redressing Sampson's generalist stance, being rather too much in sympathy with his approach to Chomskyan linguistics to argue against it. I will comment in detail only on the chapter dealing with the London School, leaving it to members of other schools to address exhaustively any injustices done to them.

In Chapter 1, 'Prelude: the nineteenth century', Sampson reviews those developments in 19th century historical linguistics which set the stage for Saussure's synchronic revolution. The account is less chronological than that of Robins 1979 and ignores the work of von Humboldt, which had little impact in this period. Sampson focuses in particular on three areas: the development of the concept of sound laws out of work on formal correspondences within the historical-comparative paradigm; the conception among workers in the field of their research as science; and the search for a theory of language change, particularly along the lines of a Darwinian model. With the ascendancy of the neo-grammarian movement, sound laws were conceived as exceptionless rule-governed processes, and historical linguistics as the science which studied them. But the neo-grammarians' insistence on language change originating in the individual, and their focus on the data of language change, led to an often caustic rejection of theorising about language change in general. It is Sampson's thesis that it was this lack of a satisfactory THEORY of language change which made the 20th century ripe for Saussure.

In Chapter 2, 'Saussure: language as social fact', Sampson discusses naturally enough the legacy of Saussurian dualisms – synchronic and diachronic, syntagmatic and paradigmatic, and langue and parole. For Sampson the key issue appears to be to what extent language can be characterised as a social as opposed to an individual fact. Saussure's concept of langue as an aspect of collective consciousness, in Durkheim's sense, stands of course in sharp contrast to a philosophical/psychological view of competence as something in people's heads, and is thus something of a challenge to Sampson's generalist orientation. Unfortunately, Sampson's focus on this issue is at the expense of an adequate discussion of Saussure's concept of the sign, whose arbitrariness was for Saussure the underpinning of those dualisms noted above. Culler 1976, in a far more satisfying treatment, notes that for Saussure it was the arbitrariness of the sign which ensured that the neo-grammarians' sound laws operate blindly. And it is this arbitrariness which leads Saussure to treat language as form not substance; and if as form, then as a set of paradigmatic and syntagmatic relations, interlocking and constituting a single 'état de langue'. Sampson's slight treatment of the sign would be harmless enough

if Saussure's own formulation of the concept could be simply taken for granted in 20th century linguistics. But there is every reason to believe that it cannot. For Saussure both signifiant and signifié were arbitrary – the sign orders both a conceptual and an acoustic morass. Modern linguistics has always been comfortable with the idea of an arbitrary signifiant, but the idea of an equally arbitrary signifié has never been widely accepted. Indeed, Sampson seems not really to appreciate Saussure's position on the arbitrariness of the signifié, attributing to Putnam a long argument having to do with just this fact. Almost incredibly, in the middle of this argument, Sampson points out that 'PART OF the concept of "beech" is "not elm" and vice versa' (52; emphasis added) without even mentioning Saussure's discussion of value, content and signification. All this has the effect of completely undercutting Saussure's interpretation of language as a semiotic system, and for Saussure's contribution to structuralism outside linguistics readers will have to look elsewhere.

In Chapter 3, 'The Descriptivists', Sampson turns to Bloomfieldian linguistics. Boas is introduced as the father of American structuralism, and his attention to linguistic relativity (looking at each language in its own terms) is briefly reviewed. Sampson then turns to the question of the Bloomfieldians' attitude to behaviourism and discovery procedures. He interprets the positivist orientation of Bloomfield's work as healthy as far as phonology, morphology and syntax were concerned, but as naive once meaning was considered. And he criticises the Bloomfieldians at length for failing to develop a theory of language because of: (i) the attention given to discovery procedures; and (ii) their exaggerated stance with respect to linguistic relativity – namely that languages vary without limit and unpredictably (a position which is in fact attributed by Joos 1957:96 to Boasian linguistics; I know of no references to any American linguist actually arguing for this position). In this Sampson accepts and further reifies the straw Bloomfieldian man set up by Chomskyans to promote their revolution.

I would like to make two criticisms of Sampson's interpretation. First, it is important, as Gleason 1975 points out, to distinguish between heuristics and theory, where heuristics refers to a set of analytical techniques and theory to an interpretation of the results of these. Now Bloomfieldians avoided the term 'theory'; but it would be wrong to characterise their interest in discovery procedures as a simple interest in heuristics. As Gleason suggests, the Bloomfieldians' term for heuristics was 'short cuts', and for them theory was in fact the discussion of discovery procedures. To my mind there is nothing inherently atheoretical about working on discovery procedures. Indeed Chomsky's (1957) abandonment of the search for their formalisation was not at all a shift from an interest in heuristics to one in theory, but a shift in what he thought linguistic theory should be about. In fact, Chomsky admits openly that the goals he sets for linguistic theory are weaker than those pursued by the Bloomfieldians (for Chomsky a theory chooses between descriptions, it does not generate

them). I see no reason why the Bloomfieldians' concern with ways of 'automatically' deriving a description from a corpus cannot be interpreted as a rich and exciting theoretical interest, one that might eventually explain HOW a child learns a language, or HOW people 'parse' a sentence in conversation (no matter how often a generativist claims neutrality in his use of the term 'generative', his productive bias is clear). Sampson's dismissal of Bloomfieldians as atheoretical is surely misguided.

Second, and more seriously, Chapter 3 has nothing whatever to say about anthropological linguistics after Boas. Sapir's name does not even appear, and there is no reference to the contribution he and his students made to American structuralism. What seems to be going on here is that Sapir and his followers have become discredited in modern linguistics because of their ethnographic concerns (in this Chomskyans simply follow in the neo-Bloomfieldians' footsteps; note the insulting patronising notes by Joos after Sapir's article in his 1957 collection). Once discredited, their contribution to 'generalist' linguistics is completely ignored (in this, post-1957 characterisations of the Bloomfieldian period are remiss, where the Bloomfieldians themselves were not; see for example Harris's reviews of the works of Newman (1944), Hoijer (1945), and Sapir himself (1951)). It is disheartening that Sampson has allowed his anti-ethnographic bias to so pervert the history of American structuralism; especially so when it is clear that workers in the Sapir tradition could hardly have been but sympathetic to Sampson's criticism of the Bloomfieldians' behaviourist approach to meaning, their focus on discovery procedures, and so on. One wonders how an article such as Sapir's 'The psychological reality of the phoneme' (1933) could fail to count as linguistic theory, even in Sampson's understanding of the term. Hymes & Fought 1975 provides an essential antidote to this chapter.

As one might expect, given this second point, only a final paragraph is devoted to the work of Pike and tagmemics in general. The title of Pike's *Language in relation to a unified theory of the structure of human behavior* (1967) is apparently enough to guarantee his exclusion from Sampson's book. But, as with Sapir and his students, an interest in ethnographic linguistics does not guarantee the irrelevance of Pike's descriptive and theoretical contributions to general linguistics. Pike was heavily involved in many of the late Bloomfieldian debates – the question of grammatical prerequisites to phonological analysis comes easily to mind. Moreover, in several crucial respects, Pike's model of language differed from that of the neo-Bloomfieldians: distinct phonological, grammatical, and later discourse hierarchies were proposed; nodes on constituency trees were labelled for both function and class (the tagmeme); the binary segmentation of IC analysis was not followed, and so on. Sampson is wrong to dismiss such factors as superficialities (he himself argues for the need for a phonological hierarchy (1970)) – try for a moment to imagine, philosophical issues aside, the shape of Chomsky's grammar had it derived from tagmemic rather than mainstream neo-Bloomfieldian descriptions. I will return to Sampson's treatment (or rather the lack of treatment) of continuity in American linguistics in considering Chapter 6.

In Chapter 4, 'the Sapir-Whorf hypothesis', Sampson examines the interrelatedness of language, thought, and reality. The relation between language and thought has been a particularly vexing one for modern linguistics. Several prominent 20th century linguists, whether basing their argument on the arbitrariness of the signifié as in the case of Saussure and Hjelmslev, on linguistic relativity as in the case of Sapir and Whorf, or on the basis of rejecting the duality in the first place as in the case of Firth, have argued that it is a logical consequence of their perspectives that language determines or is thought and conditions or is our perception of reality and not vice versa. This is a strong and fascinating claim, and one that many linguists shy away from, so strong is the contrary common sense view implicit in western ideology. Sampson approaches the question from a philosophical/psychological perspective, discussing to what extent language can be said to determine both how we think and what we perceive. He dismisses an example of purportedly illogical thinking attributed by Lévy-Bruhl to the Bororó on the basis of their claim that they are red parakeets (when they patently are not by all appearances) and goes on to discuss the work of Berlin & Kay 1969 on colour terms. I personally find such a discussion of Whorf unproductive – if Whorf IS right, we will never know it. This is presumably what Sampson has in mind in describing the hypothesis as trivially true at best. Interpreted from the point of view of ethnographic linguistics, however, I think the hypothesis does have empirical content. In this interpretation it is the relation between language and social structure (or culture, if you will) which is at stake. And Whorf's own stress on the idea of HABITUAL behaviour and his frequent references to FASHIONS of speaking are evidence that this interpretation is tenable. On this reading the hypothesis refers to a conspiracy of covert meanings (see in particular Whorf 1956:158) reflecting ways of analysing and reporting experience which have become fixed in the language. This is not to say that we cannot turn language back on itself and escape through a conscious act of semiotic reconstruction (this presumably is just what we academics are paid to do), but rather to argue that most of the time we ARE at the mercy of an ideology the language encodes. The work of Bernstein (1971, 1973, 1975) and his colleagues provides some evidence for the hypothesis (there are striking parallels between the reactions of philosophical/psychological linguists to Bernstein and Whorf) and Fowler et al. 1979 and Kress & Hodge 1979 present further elaboration. In concluding this chapter Sampson appears to grant the validity of an ethnographic interpretation of Whorf but sees little significance in it in light of 'the ability that individual men possess to break conceptual fetters which other men have forged' (102). His generalist orientation to the individual as opposed to the social is, as ever, clear.

Chapter 5, 'Functional linguistics: the Prague school', is perhaps the most satisfying in the book. It provides a clear and sympathetic account of the school's functional orientation to language. For the Prague School, a functional orientation to language manifested itself in three ways. First of all, there was a concern with paradigmatic relations – the function of a linguistic unit within the system. This characterised both Trubetzkoy's work on phonology and Martinet's functional interpretation of language change. Second, there is the question of the function of linguistic items in a text. The school's work on functional sentence perspective is crucial here. Sampson notes Mathesius's introduction of the concepts of theme and rheme which formalised this functional perspective in their work on syntax. Mathesius, in his use of the terms, is unfortunately responsible for the confusion of theme and rheme with 'given' and 'new' in much later work, and it would have been helpful if Sampson had cleared up this problem with reference to Halliday instead of exacerbating it by writing that passive is not the only way of adjusting functional sentence perspective: 'it is possible to mark *John* as rheme rather than theme in *John kissed Eve* by STRESSING it' (105, emphasis added). Third, there was the function of text in context. Sampson mentions Bühler's classification of speech functions, and then refers to the Prague school's concern with stylistics and register. Sampson notes that a concern with stylistics is outside the scope of his book but some discussion of the concept of foregrounding as developed by Mukařovský 1977 would have been useful since it is this concept which makes explicit the linguistic manifestation of verbal art, distinguishing the linguistic approach to literature from that of other disciplines. After a discussion of Jakobsonian universals, Sampson ends the chapter on a rather curious note, discussing Labov's work on language and social context. There is something distinctly odd about this particular allocation of linguists to schools. But it is no doubt explained by the fact that in spite of having dismissed sociolinguistics as peripheral and outside 'core' linguistics as defined from the generalist perspective (10), Sampson cannot avoid incorporating somewhere in his book the invaluable methodological and descriptive contributions of the variationists.

Labov's demonstration of the feasibility of studying sound change in progress is of course of great significance in modern linguistics and bears critically on the neo-grammarians' conception of sound laws and how they work, on Saussure's discussion of langue and parole, on Sapir's notion of drift, on Chomsky's idealised speaker, on the kind of data linguists should be analysing, and so on. As such, the work of Labov and his colleagues surely provides the clearest possible vindication of a descriptive/ethnographic perspective in linguistic theory. That Sampson relegates his discussion of the work of Labov, the Sankoffs, Bickerton, Bailey and their students to four pages in this chapter is one of the two most serious failings of the book (the other being Sampson's treatment of Hjelmslev, which will be discussed below). Sampson himself seems uncomfortable with the philosophical/psychological interpretation of sociolinguistics as the study of the correlation between language and sociology rather than the mutual determination and explanation of one by the other. Hopefully variation theory will receive recognition with the chapter it deserves in future editions of the book.

In Chapter 6, 'Noam Chomsky and generative grammar', Sampson turns to the work of Chomsky with respect to TG grammar (generative phonology is considered in Chapter 8). Sampson briefly introduces readers to Chomsky's formalisation of syntax in generative rules and then presents a critique of the linguistic theory which Chomsky bases on this formulation. Although attracted by Chomsky's theory of language universals (or what it is about language that can't be explained and is therefore innate), Sampson expresses serious reservations about the impact of this theory on linguistic research. His main complaint is that while Chomsky's formalisation of syntax as a finite system of rules generating an infinite set of sentences made an empirical approach to syntax possible for the first time, his rationalist orientation to intuitions as the data which linguists describe has made research anything but scientific. In Sampson's view this problem is compounded by Chomskyans' tendency to express universals in terms of a notation system which does not permit other than the predicted patterns, with the ever-present danger that what cannot be described will not be observed. It is of course part and parcel of all linguistic revolutions to redistribute the concerns of theory and heuristics, in the sense of the terms used earlier. Chomskyans' use of intuition and their focus on universals can be seen in this light as a legitimisation of certain Bloomfieldian heuristics (i.e. short cuts having to do with tendencies in language and the use of intuition in analysis; cf. Gleason 1975). But in Sampson's view the advancement of intuitions and universals to the status of theory is premature and has been lethal. He argues for a return to the empiricist methodology of the Bloomfieldian period and a reorientation within linguistics to the description of languages on their own terms, so that a viable theory of universals can eventually be constructed. It is hard not to be sympathetic with this position.

One of the refreshing aspects of this chapter is the attention Sampson gives to socio-political aspects of the competition between and evolution of schools. Such is the force of personality in academe, and the importance of being in the right place at the right time, that real progress is made only over the centuries (or even millenia as in the case of Pāṇini). The power of Chomsky's polemics, and the eclipsing stance adopted by him and his followers to even those linguists to whom they owed the greatest debt, has probably not been in the interests either of scholarship or productive debate. Although he does criticise the Chomskyan school for its egocentricity (especially in Chapter 8), Sampson himself does little to bring out the continuity between Chomsky and neo-Bloomfieldian linguistics. One feels for the first time in the book that differences between schools have been emphasised at the expense of

historical relationships. Chomskyan linguistics could only be the (albeit rebellious) child of neo-Bloomfieldianism. To take just two examples, Chomsky's argument for the necessity of transformations depends entirely on his implicit assumption that the only kind of syntactic analysis which can be formalised in a generative way is IC analysis; similarly the Bloomfieldians' preoccupation with the problem of just how morphemes could be described as CONSISTING OF phonemes is clearly reflected in the lack of attention given by generative phonology to a phonological hierarchy, syllable structure, and prosody in general.

Linguistics who believe with Postal 1972 that TG grammar uncovered more facts in its first twelve years of research than could fit into a dozen works like Jesperson's seven-volume *Modern English grammar* will not like this chapter but will certainly enjoy Newmeyer 1980, which ups the ante, claiming that more has been discovered 'in the last 25 years than in the previous 2500' (250).

In Chapter 7, 'Relational Grammar: Hjelmslev, Lamb, Reich', Sampson turns to a consideration of what is generally known as stratificational linguistics. Hjelmslev is dismissed in a page and a half as 'abstruse', 'airy fairy', and guilty of the dilettantish and aprioristic theorising for which he criticised others (Sampson is virtually Bloomfieldian in his anti-theory polemics here). Hjelmslev is apparently included as worthy of mention simply because Lamb has made so much of his very Saussurian concept of language as a network of relationships. I am at somewhat of a loss as to how appropriately to respond to Sampson here. It is true that Hjelmslev is difficult. Exemplification for many of his ideas must be provided by the reader. He does not directly attack many of the ideas of his contemporaries. Nor are there any well-known descriptions deriving from his theory. But Sampson's reaction is undergraduate at best; in a book of this kind one expects an attempt at interpretation in place of so shallow a treatment. My own reaction to Hjelmslev on reading him some ten years ago was like Sampson's: but with each subsequent reading I have become more convinced of his status as the leading theoretician of the century. The proof of the pudding will be in the eating, as Sampson puts it; and in the long run I think Sampson will be more embarrassed by this page and a half than by any other section of *Schools of linguistics*.

A review is no place to do justice to Hjelmslev's ideas. Readers interested in his work will find in Halliday's systemic/functional grammar a far more Hjelmslevian theory than that articulated by Lamb, incorporating Hjelmslev's formulation of system manifested in process, with system interpreted paradigmatically and process syntagmatically, and language treated as the expression plane of higher-order semiotics. Unfortunately Sampson does not understand the work of either linguist well enough to note the connections. Readers interested in Hjelmslev's development of Saussure's thinking are best referred to the *Prolegomena* itself. Hjelmslev's reinterpretation of 'rapports associatifs' as systems with a limited number of terms and renamed 'paradigmatic relations' is a crucial

contribution. In addition, his formulation of the concept of double articulation (for which Martinet is known) is an invaluable clarification of Saussure's discussion of the sign, Hjelmslev providing a clear theoretical interpretation of stratification in language at a time when Bloomfieldian morphophonemics wrestled aimlessly with the relation between morphemes and phonemes. This work is fundamental to any understanding of the relationship between language and other semiotic systems in our culture and as linguistics crawls out of its philosophical/psychological shell Hjelmslev will in time no doubt be recognised as the genius he was. In the meantime one can only apologise on behalf of the contemporary linguistics ideology which underlies Sampson's reaction.

The rest of the chapter is more than responsible. Sampson sets out clearly the advantages and disadvantages of stratificational linguistics as he sees them. On the plus side he notes: (i) the relative simplicity of relational network notation in terms of the number of symbols used; (ii) the practicality of measuring the overall simplicity of a grammar using this notation (simplification in one part of a TG grammar generally leads to a complication elsewhere, making simplicity next to impossible to measure); (iii) the recognition of strata with distinct inventories and tactic patterns, permitting a clear statement of the differences between phonological, morphological, grammatical, and semological patterns; (iv) the neutrality of relational network notation with respect to speaking or listening (as workers in Artificial Intelligence have discovered, one main problem with TG grammars is that you cannot run them backwards); and (v) Reich's (1969) prediction of the ungrammaticality of centre embedding (which can be blocked only in an ad hoc way in TG grammar and must then be ignored as a performance feature). Sampson has two major reservations about relational network grammar. The first has to do with his feeling that it cannot be used to generate structures, such as relative clauses, involving what he terms structure dependency. I do not think that Sampson's doubts are at all well founded here. Relational networks have since the late 1960s included downward ordered or brackets which make their tactic patterns comparable in generative power to a context-sensitive PS grammar. These can be used to suppress the realisation of a potential constituent under conditions specified by enablers (see Lockwood 1972:section 3.4). I can see no problem in wiring a tactic pattern which permits the realisation of a constituent in a relative clause only if it is not coreferential to the head of the construction. Indeed, stratificational grammar is in a far better position to do this than many TG grammars, in that its semology includes information about the identity of participants in a given text, providing the necessary conditioning information for the rule. Sampson's second reservation has to do with the fact that relational network notation can be used to describe semiotic systems other than language and thus runs the danger of not showing how language differs from other human activities. Sampson is surely being inconsistent here. In the preceding chapter he criticised the incorporation

of universals into TG notation on the grounds that it was premature and precluded potentially significant observations. Any notation system which can be used only to describe language runs a similar danger in showing language to be more different from other semiotic codes than it actually is. For an illuminating discussion of language in relation to other sign systems see Hjelmslev 1961:section 21.

Two final comments before turning to Chapter 8. First, Sampson could have made more of the continuity between stratificational and Bloomfieldian linguistics. He does note that stratificational grammar constitutes a generative formalisation of Item and Arrangement descriptive linguistics in contrast to the Item and Process formalisation of TG grammar (the third model of Hockett 1954, Word and Paradigm, is, incidentally, formalised generatively in systemic linguistics, although Sampson does not note this in Chapter 9). But Hockett's crucial 1961 paper which outlines the stratificational solution to the problem of Bloomfieldian morphophonemics is not mentioned. More discussion of continuity of this and other kinds would have been helpful, especially since the design of the chapter makes it seem as if stratificational grammar derives principally from Hjelmslev when in fact it is a fundamentally post-Bloomfieldian theory. Second, Sampson regrettably makes no reference at all in the chapter to the work of the Hartford stratificationalists on discourse. Unlike Lamb, whose focus has been principally on phonology and morphology, Gleason and his students approached the question of stratification from the point of view of the relation between discourse and grammar (see Gleason 1968, Gutwinski 1976). Their work on the discourse structure of texts in various non-Indo-European languages led to a stratified model of language in which the text was the basic semantic unit, represented in a reticulum including information about participant identification and conjunction. Sampson presumably views text-linguistics as outside linguistics proper and ignores their work on triple articulation here. Such a posture is untenable even for a grammarian, given a language like Kate, whose narrative tests are described by Gleason 1968 as consisting of a single clause complex with portmanteau morphemes realising reference and conjunction between each clause. On the whole, more attention could have been given to how stratificational linguists argue for the necessity of strata. Linguists seem generally to agree that languages consist of sounds, wordings (and perhaps meanings as well). But they do not agree on where the boundaries between strata fall. Indeed, Chomskyan linguistics has by virtue of the power of its mutation rules completely obscured the boundary between morphology and phonology (witness the argument of Halle 1959 against the phoneme) and the boundary between syntax and semantics (it would not be too far-fetched to argue that in its twilight years generative semantics obliterated the boundary between language and the world; cf. Newmeyer 1980: Chapters 5 and 7).

In Chapter 8, 'Generative Phonology', Sampson discusses the Chomskyan approach to phonology. Sampson's feeling is that apart from the personalities involved, all that generative phonology has in common with TG Grammar is an interest in universals. While it is quite true, as Sampson points out, that one thing generative phonology does not do is generate all and only the well-formed sequences of phonemes in a language (their Bloomfieldian preoccupation with the relation between morphemes and phonemes distracts them from this), I would have thought that the main thing that TG Grammar and Generative Phonology share is a generative formalism involving unrestricted rewrite rules with the power to reorder, delete, and to generally mutate in any way a string of symbols. Much more of their ethos flows from the power of these rules than Sampson seems willing to admit.

Sampson begins with a brief introduction to the concept of distinctive features, deriving from Jakobson, and introduced to generative phonology by Halle. I have always found puzzling the argument that once distinctive features are introduced, the phoneme is no more than a handy abbreviation for use in transcription. Hjelmslev's distinction of system and process is relevant here. Distinctive features represent the paradigmatic oppositions which characterise the phonological system of a language; phonemes are the syntagmatic units which constitute the process on the expression plane. Both features and phonemes are units – they differ simply in terms of whether one is describing language from the point of view of chain or choice. In this connection note, for example, that no systemicist would argue that, because his network generates a set of features underlying a clause in a derivation, clauses do not exist! Clauses simply realise features, just as phonemes do. The main problem here seems to derive from a Bloomfieldian obsession with looking at language in terms of composition. Thus a phoneme is interpreted as consisting of distinctive features rather than realising them. The dilettantish theorising of 'a certain style of Continental scholarship' (167) might have helped American linguistics here.

Sampson goes on to discuss the number and types of features proposed and whether features are binary, in light of universal claims made by generative phonologists on behalf of their features and their binariness. Halle's (1959) dismissal of the phoneme is reviewed: the question of whether simplicity alone should be used to eliminate such a unit from linguistic theory aside, Sampson points out that Halle's treatment is not really a simplification – it requires that the level of phonemics be replaced by that of a universally motivated level of systematic phonetics. Sampson then criticises the tendency for generative phonologists to include the phonological history of a language in their descriptions as synchronic fact. His general point is that generative phonology typically posits far more of the history of languages as synchronic and far more of the phonology of a language as innate (or universal) than is warranted. Some discussion of developments in natural phonology in the 1970s would have been useful to amplify this skepticism. The chapter ends on

a political note: Sampson is as puzzled intellectually by the success of generative phonology as he was of TG grammar and looks for some explanation beyond the quality of the ideas involved. His somewhat whimsical conclusion is that generative phonology has been successful largely because Americans are bad at phonetics and secondarily because it is fun to perform facile diachronic analyses of morphophonemic alternations in a language to be included in one's synchronic account. At moments like this one longs for a truly socio-political account of 20th century linguistics and it is hard not to agree with Sampson that competition between schools is far less a battle of ideas than is commonly imagined.

In Chapter 9, 'The London School', Sampson turns his attention to Firthian linguistics. The treatment is very friendly, surprisingly so in light of Sampson's generalist stance, and clears up a number of misconceptions deriving from such chauvinistic and eclipsing works as Postal 1964 and Langendoen 1968. Sampson begins by commenting briefly on the works of Sweet and Jones in phonetics before introducing Firth, the founder of the London School. Sampson's presentation of prosodic analysis is excellent. Firth's system/structure phonology is clearly described and Sampson draws a number of useful comparisons with the Bloomfieldian phonology Firth and his colleagues reacted against. The presentation is refreshing and essential reading for those introduced to Firth's work through the likes of Langendoen 1968. Sampson expresses two reservations about prosodic analysis. First there is the problem of abstraction. He sees a danger in setting up prosodies whose realisation is not a 'natural' class, which danger is enhanced by Firthians' practice of being rather inexplicit about the phonetic realisation of some of their prosodies. In this respect prosodic analysis is more Hjelmslevian than Bloomfieldian phonemics, interested in phonology as an abstract formal system rather than as a principle for reducing languages to writing. However both Firth's 'renewal of connection' and Hjelmslev's principle of 'appropriateness' were designed as constraints on abstraction, which contraints linguists of all schools have been very slow to formalise. Sampson's second reservation has to do with Firth's claim that it is part of the meaning of an American to sound like one. This makes sense or no sense depending on how one defines meaning and for Firth the purpose of linguistics was to make statements of meaning which describe the way in which people use language to live. Defined in this way, Labov's work on the social significance of phonological variation would seem to vindicate Firth.

Sampson's treatment of Firth's description of meaning as function in context is more problematic. Not only does he fail to give an accurate presentation of Firth's views, but he presents them in terms of two points of view that Firth was at pains to argue against. The first of these involves Sampson's tacit acceptance of a number of dualisms which Firth explicitly rejected: word and idea, language and thought, expression and content (note Sampson's distinction (227) 'between what one says

and how one says it'). In other words, he accepts the idea that sentences and the like have meaning; for Firth, sentences mean but they do not have a meaning. The second involves Sampson's implicit acceptance of the basic meaning of a sentence as a truth-functional relation between that sentence and some possible world (note his reference (227) to the 'propositional meaning' that a logician would see in a sentence). Thus it follows that *The farmer killed the duckling* is meaningful because one can imagine a world in which it would be true; for Firth one essential part of a linguistic analysis of meaning involves a description of the context in which an utterance functions. It follows that if it lacks this implication of utterance, a sentence cannot be meaningful. In Hjelmslev's terms, meaning can only be discussed with reference to process (or text) in context; system as such has no meaning. Firth's approach to meaning certainly is 'bizarre', as Sampson puts it, if one accepts the duality of content and expression and goes on to analyse meaning referentially as the relation between this content and some world. But seen in its own terms, Firth's approach is perfectly coherent.

Even setting aside these deeper issues for a moment, Sampson's description of Firth's approach to meaning is a complete misrepresentation. Firth made it absolutely clear on several occasions that the central purpose of his theory was to break meaning up into a series of component functions. These component functions include: context of situation, collocation, syntax (including colligation), and phonology. In spite of this Sampson describes collocation as an approach which led Firth 'to EQUATE the meaning of a word with the range of verbal context in which it occurs' (226; Sampson's emphasis but I would have added emphasis if he had not). And context of situation is taken as implying that meaning 'is TO BE INTERPRETED AS acceptability or appropriateness' (226; emphasis added). Firth's famous metaphor of light being dispersed through a spectrum is obviously lost on Sampson. Readers interested in a more sensitive introduction to Firth's technique of semantics are referred to Monaghan 1979. The best example of a Firthian approach to colligation, which Sampson does not discuss, is Allen 1956. Mitchell 1957 illustrates Firth's contextual approach applied to a buying and selling situation type.

Having dismissed Firth's approach to meaning Sampson skips over the work of neo-Firthian linguists on scale-and-category grammar, collocation, and register, and goes on to focus on systemic linguistics. Sampson looks only at systemic grammar, ignoring the work of systemicists on phonology (especially intonation), discourse, register, codes, language development, stylistics, and applied linguistics (including both mother-tongue and second-language teaching), most of which is presumably defined by Sampson as outside core linguistics. This would perhaps be forgivable were it not for the fact that, in the Firthian view of many systemicists, language – even grammar itself – cannot be properly described without taking these functions into account (Sampson makes no

attempt to discuss the functional orientation of the school, which has extended much of the thinking of the Prague School). For something of the true descriptive/ethnographic flavour of systemic research see Halliday 1975, Halliday & Hasan 1976, Halliday 1978 and Halliday & Martin 1981.

Sampson gives a fairly clear presentation of the paradigmatic orientation of a systemic grammar, from which its name derives. Very little attention is paid to the question of how systems are realised – how language is manifested as text, in Hjelmslev's terms. Halliday has been notoriously inexplicit about this, it is true, but Hudson 1971 provides a clear exposition of how systems generate grammatical structures. This lack of attention to realisation (in both Halliday's work and Sampson's account) makes the theory seem more exotic and inaccessible than necessary. Most linguists find it difficult even to think of language in terms of system rather than structure – more than one systemicist has to his chagrin found linguists reacting to his networks as tree diagrams at a funny angle. Sampson's lack of attention to Halliday's functional analysis of English clauses and groups also has the disadvantage of failing to publicly embarrass linguists like Simon Dik, who in his *Functional grammar* (1978) acknowledges none of the work in systemic linguistics whose findings he has presumably rediscovered for himself.

Sampson's criticisms of systemic grammar raise a number of interesting points, many of which have been hotly-debated issues at the systemic workshops which have been held annually in Britain since 1974 (the 1982 workshop moves for a year to Toronto, Canada). He first raises the question of whether there is a stratum of system networks underlying those normally proposed for lexico-grammar (in his dualistic terms, whether semantics and syntax are isomorphic). This strikes me as a straightforward empirical question having to do with whether or not system networks and realisation rules have enough generative power to simply state everything there is to say in closed systems outside phonology. As such it is a rather global issue, not one which can be settled on the basis of one or two examples such as those Sampson proposes. Still less progress can be made if, accepting the dualism of content and expression, one restricts one's definition of content in such a way that the distinction between finite and nonfinite clauses in English is said to have no particular meaning (one wonders how many hundreds of years it will be before Firth's rejection of these dualisms and Saussure and Hjelmslev's discussion of the arbitrariness of the signifié have any major impact on linguistics). A number of papers referring to the issue of stratification are included in the forthcoming collection by Halliday & Fawcett.

Sampson then goes on to criticise the concepts of rank and delicacy as used by Halliday in particular. I am surprised by his outright rejection of the concept of rank, given his interest in constituency as the basic defining property of human language (1975, 1979, 1980). Any grammar incorporating a concept of rank makes stronger claims about constituency

in language than an IC-based one and would thus seem more appealing to a generalist. My feeling is that Sampson's problem here has to do with a preoccupation with syntagmatic patterns in discussing constituency. The concept of rank embodies an empirical claim about the way in which systems cluster paradigmatically in terms of their dependence on or independence of each other. How many ranks a language has, and the number of ranks at which a given unit enters into systemic oppositions, are descriptive questions. For example, Chinese, like other isolating languages, does not distinguish words and morphemes; French, like other syllable-timed languages, does not distinguish syllable and foot. The strongest universal claim that can be made is that all languages have two ranks on each stratum. Turning to the question of the number of ranks at which a given unit must be described (the problem of 'total accountability', as it is termed in systemic linguistics), once again this is a purely descriptive question. An utterance like *Run!* clearly must be described at clause, group, and word ranks if the semantically significant oppositions it realises are to be described; a conjunction such as *because* on the other hand can be generated directly from clause complex systems – it does not enter into oppositions at other ranks. Again languages differ in the number of ranks a comparable unit is relevant to: in English, for example, an argument can be advanced for the recognition of verbal groups, while in an essentially agglutinating language like Tagalog clause and word systems are adequate to generate the comparable unit. I have every confidence that when linguists who have based their description of syntax on IC analysis turn their attention to the paradigmatics of grammar, if ever they do, they will boldly pronounce the concept of rank as a powerful new constraint on PS grammars (we can be equally confident that no reference will be made to tagmemics or systemic linguistics, such is the state of scholarship in our times, as Sampson quite rightly suggests (258, n.17)).

Halliday's concept of delicacy is less easy to defend, especially in the highly provocative formulation whereby he characterises a grammar as an infinite system generating finite texts. But on a weaker reading delicacy provides a valuable challenge to the traditional bricks and mortar view of grammar and lexis in western linguistics. This view depends on a strong syntagmatic orientation and views syntax as the glue which binds words together in sentences. It is this view which underlies both transformational and lexicalist approaches to grammatical description, where the first generates the structures, then adds in the words, while the second starts with the words and adds on the structures. The alternative systemic view is that lexis is most delicate grammar – that the difference between words and structures is one of general vs specific semantically-significant opposition. Interpreted paradigmatically, this means that as system networks progress from left to right in delicacy their features come increasingly to be realised through lexical items rather than structural configurations. Hasan's paper in the forthcoming Halliday & Fawcett collection exemplifies this principle. It is worth noting in passing that such a formulation

does not exhaust the lexico-grammatical description of lexis for Halliday, who retains Firth's concept of collocation, thus treating the acceptability of *a strong cup of tea* and the unacceptability of *a powerful cup of tea* (cf. Sampson, 227) as a lexico-grammatical fact. Note as well that in this view the concept of open and closed class items is replaced by that of those entering into collocational patterns in text and those lacking this mutual expectancy.

Sampson's major reservation about systemic linguistics has to do with the 'role that intuition appears to play in systemic analysis' (234). I find the objection an odd one in that it confuses heuristics and theory. No linguistic theory that I know of has succeeded in incorporating the whole of heuristics in theory – that is, in formulating a set of discovery procedures which will generate grammars out of data (Chomsky has not helped us towards this goal by flatly denying that it is possible). All linguists make use of intuition in constructing their analysis. The crucial question, it seems to me, is not whether intuition is used, but whether intuitions count as data. In TG grammar they do; in systemic linguistics they do not. Systemicists, like Firthians before them, have more than any other school (except perhaps more recently Labov and his colleagues) insisted that it is texts in their social context which constitute the data for which they must account. Firth's concept of 'renewal of connection', the neo-Firthians' 'exponence', and systemicists' 'realisation' are all explicitly oriented to ensuring that Firthian descriptions account for language in use. If systemicists have been at times slow to make explicit the exponence of their descriptions it is because their goals are so much broader than those of other schools. If they have been reluctant to use simplicity as a criterion for deciding between descriptions, it is because they are uninterested in providing descriptions of small arbitrary pieces of language – there is no point in ranking minigrammars in terms of simplicity, since simplification in the short term may lead to complexity overall. Of course these tendencies have been bad PR in an age when it is better to be explicit and trivial than inexplicit and comprehensive. But hopefully, in the long term, the political price will have been worthwhile.

Before concluding I would like to make two political comments. The first is rather fanciful, but will serve I hope to underline the philosophical/psychological bias from which *Schools of linguistics* was written. Imagine that in a couple of generations the descriptive/ethnographic tradition in linguistics achieves hegemony in our discipline. (This will be necessary if linguists are to survive in their present numbers. One wonders how long the Thatchers, Reagans, and Frasers of our world will fund a discipline whose leaders publicly assert that linguistics is useless; see Chomsky 1981a for a recent unequivocal statement. Sampson himself regards applied linguists as a group of charlatans who have duped governments into wasting tax-payers money by supporting them (11).) Imagine then the contents of a book about 20th century linguistics written in that period:

1. Saussure: language as social fact
2. Boas, Sapir, & Whorf: anthropological linguistics in America
3. The Prague School: functional linguistics
4. Pike: language in relation to a unified theory of human behaviour
5. Labov: the study of language in social context
6. Halliday: language as a social semiotic
7. Bernstein: socialisation, language, and education
8. Text-linguistics: Bible translation; cohesion; European approaches
9. Artificial Intelligence: teaching computers to talk
10. Applied Linguistics: contextual theories of language learning
11. Stylistics: foregrounding and connotative semiotics

Biased? Perhaps. But no more so than *Schools of linguistics*. In the Introduction to his *Form of language* Sampson, quoting Mao, and commenting on generalist as opposed to particularist linguistics, suggests as a principle for the conduct of intellectual affairs that a hundred flowers blossom, a hundred schools of thought contend (1975:11). Such is the force of ideology in linguistics that the weeds comprising our ethnographer's imaginary history wither and die at Sampson's hand.

My second comment is unfortunately not fanciful and has to do with two examples of what I consider the essential political irresponsibility of philosophical/psychological linguistics. In 1979 Sampson published a book, *Liberty and language*, in which on the basis of his interpretation of linguistic semantics he argues for a form of ultra-Thatcher-Reaganism, which he refers to as liberalism (in doing so he advocates, among other things, the abolition of public education at ALL levels: primary, secondary, and tertiary; an end to social security payments of all kinds; the deregistration of all trade unions; and so on). A year later Chomsky allowed a piece of his writing on civil liberties to appear as the introduction to Faurisson's neo-fascist volume (1980), which claims that Hitler's racist holocaust never in fact took place. It strikes me as a sad comment on philosophical/psychological linguistics that: (i) it is compatible with political views as different as those of Sampson and Chomsky; and (ii) it somehow encourages the publication of the documents noted above. Chomsky adamantly refuses to apologise for his publication, arguing (1981b) that everyone has a right to be heard and that anyone who challenges this idea is worse than Faurisson. Sampson 1980 makes no attempt to qualify the politics of *Liberty and language*. But Chomsky has allowed his name to be used (and because of his fame that of linguistics as well) by people whose politics he abhors. And Sampson has provided plenty of ammunition for a Razor Gang which in Australia has in the past year threatened the careers of several applied linguists and which has virtually abolished applied linguistic research with its dismantling of the Curriculum Development Centre, the Educational Research and Development Committee, and its more general cuts in education funding. I do not think that ethnographic linguistics would tolerate either of these actions.

It takes very little in the way of semiotic analysis to recognise that the Introduction to a book is the syntagmatic slot which realises the feature [praise]. It takes very little in the way of register and code analysis to realise that the group of 'tyrants' in Canberra that marry our sisters and rule our lives (1979:212) are just part of the realisation of an ideology based on power and deriving from the material distribution of wealth in western society (the idea that small government will destroy this ideology is absurd). I am convinced that as linguists we can be useful, we can be relevant, and we can be politically sensible. Philosophical/psychological linguistics has done no greater disservice to our discipline than to deny these responsibilities.

It should be obvious from the above that *Schools of linguistics* is an extremely stimulating book to say the least. Because of its scope it is not an easy book to review; but it must have been all the more difficult to write and we are indebted to Sampson for a well-written contribution to the history of our discipline. I don't think that many linguists will LIKE the book. Sampson's approach is too original (I should perhaps say too iconoclastic) for that. Generalists are likely to be dismayed by the irreverence of Sampson's discussion of Chomskyan linguistics. Particularists are likely to feel that far too little attention has been paid to the problem of language and social man. Nonetheless I feel confident in predicting that no one will be bored and that we will all have learned something from the book about why we think the things we do (without even at times knowing that we think them).

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Frederick T. Newmeyer, *Linguistic theory in America: the first quarter-century of transformational generative grammar*. New York: Academic Press, 1980. pp. xiii + 290.

There will no doubt be some who will object to the title *Linguistic theory in America*, and claim that the subtitle is a more accurate description of this book's contents: *The first quarter-century of transformational generative grammar*; but at least the clarification does appear, there. Perhaps there will even be some who will quibble at the use of the word 'first', with its implication of further quarter-centuries to come. Given the very promising recent models of Bresnan (1978) and Chomsky (1981), it seems a reasonable implication for generative grammar, though perhaps more dubious for transformational generative grammar.

Chapter 1 deals with 'the state of American linguistics in the mid 1950s' – just before the arrival of the so-called Chomskyan Revolution, which is dealt with in Chapter 2. Chapter 3 follows the changes from *Syntactic structures* to *Aspects*. Chapters 4 and 5 recount the great schism of the late 1960s and early 1970s between Generative Semantics and Interpretivist Theory. Chapter 6 is on 'Syntax in the 1970s: constraining the syntactic rules'. Chapter 7 deals with matters, such as pragmatics, which have often been regarded as being on the border between formal grammar and something else, and Chapter 8 concludes the book with an account of recent developments, including Trace Theory, Relational Grammar and Montague Grammar. The book therefore brings the account remarkably up-to-date in relation to its date of publication.

The author, very modest in his self-assessment, testifies that he 'contributed several uninfluential publications in defense of a deep-structure model of grammar' during the early 1970s. He confesses that as a participant ('however noncentral') in the history that forms the subject of the book, he could be charged with bias. His defence is that it gives him an 'inside view', which perhaps balances the other danger. Certainly he gives a masterly account of his chosen topic: glass-clear, impressively comprehensive, and very accurate. Even if his modest assessment of his own contribution to linguistic theory is judged correct, he has produced a work of outstanding quality in this history, a work which few could hope to write with such command and perspicacity.

He points out in the Preface that he does not intend the book to be an introduction to linguistics – a wise judgement; but it is a superb source-book for the history of linguistic ideas in the twenty-five years that it covers, and could be used to great advantage with senior students who needed to be filled in on some of this background.

It is clear that Newmeyer admires Chomsky, and he shows enjoyment of the near-legendary tales about him. Not that he presents anything that is not accurate; the facts themselves are myth-like. He draws together some fascinating details about Chomsky which are by now widely known. In the late 1940s he was working as an undergraduate on a grammar of Hebrew, a task which had been suggested to him by Zellig Harris. He immediately found himself approaching the task in the framework of generative grammar, working almost entirely by himself. Newmeyer comments that 'there is no evidence that Harris . . . even looked at it.' Apart from Henry Hoenigswald, he goes on, 'few linguists were then even willing to call what he was doing "linguistics" '. It is fascinating to view this early phase of Chomsky's career with the benefit of hindsight, and even more fascinating to find him, a few years later, hawking his work around and failing to get it published. *The logical structure of linguistic theory* elicited a rejection from MIT Press 'practically by return mail' (35). Easy now to smile at their lack of perception, but it would be a brave person who would claim he would have known better, at that stage of history.

This is one level at which the book can be enjoyed, then, the level of reminiscence and musings about human behaviour. It does not make up a large proportion of the book, and there are many more demanding matters to be pursued, but it is certainly not without its interest, and is well done.