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Book review

Review of: Halliday and Matthiessen: ‘Construing Experience through Meaning’

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Halliday and Matthiessen’s *Construing Experience through Meaning* (hereafter CETM) is an attempt to describe the organisation of English semantics. More precisely, it is an attempt to set out the abstract categories which speakers of English use in order to organise their experiences of the world. Halliday and Matthiessen approach this task by considering this abstract organisation to be one aspect of ‘meaning’ rather than a kind of ‘knowledge’. They use these terms to identify two metaphors that offer contrasting ways into the problem: whereas ‘knowledge’, as something that is discussed and described in areas like cognitive science, suggests structures and mechanisms that have an, at best, indirect relation to language, ‘meaning’ is itself a level of linguistic description — that is, a level that is approachable and understandable using the constructs and dimensions appropriate for linguistic theorising. This gives then the second part of the book’s title: *a language-based approach to cognition*. For Halliday and Matthiessen, ‘cognition’ can be approached beneficially by a thorough investigation of the development and organisation of meaning within the linguistic system and they show that many claimed properties of ‘knowledge’ and ‘thinking’ are in fact mechanisms provided by, and inherent to, language.

The book should therefore be required reading for those interested in the underpinnings of such notions as ‘cognitive structures’ and in the relations between language and thought — but it will not be simple reading. CETM is the first major descriptive exploration in print of the view of (experiential) semantics found in systemic-functional linguistics — a direction in linguistics concerned centrally with the

connection between language and its uses in society. Halliday, as the originator of the systemic-functional tradition in the early 1960s, and Matthiessen are currently two (probably *the* two) central figures in the continuing development of systemic-functional theory and so it is particularly useful to have the extensive discussion they present. But, that being said, it also contributes to the fact that this is no introductory work. At many points the book contains distillations of arguments and positions made in systemic theory and its application over the years and these are often sharply distinct to some current ‘mainstream’ received ideas in linguistics and cognitive science. Particular areas drawn on are earlier work on language development, on the historical development of technical registers in English and, most crucially, on the relation between grammar and semantics — which are both (following Firthian linguistics from the 1940s and 50s) considered as meaningful and inextricably related levels of linguistic description. For those not familiar with the approach to language — particularly to grammar — developed in systemic-functional linguistics over the last 40 years, the book will require a considerable investment in effort. To what extent that effort is worthwhile will depend on the interests and questions of the reader, and so in this review I will attempt to set out both the major background assumptions of the book and the kinds of questions for which its detailed study would be most rewarding.

The book contains material of three major kinds: first, the detailed description of the semantic organisation proposed; second, discussions and arguments concerning the methodology adopted for constructing

this organisation; and third, examples of *using* the semantic organisation for other purposes. Systemic-functional linguistics is most typically found in areas where linguistic descriptions are *applied* to some task — I deliberately do not write *applied linguistics* here since this is often conceived by its practitioners more narrowly than necessary; and, for this reason, Halliday and Matthiessen seek also to show that the semantic organisation they uncover facilitates application both inside and outside of linguistics ‘proper’.

The book is divided into five parts. Part 1 provides some background and ‘theoretical preliminaries’; Part 2 sets out the main descriptive content of the book — a broad semantic organisation of the meanings made in English, or *ideation base* as Halliday and Matthiessen term it; Part 3 provides one example of use of the ideation base drawn from Natural Language Processing, and in particular, from Automatic Natural Language Generation; Part 4 discusses alternative theoretical positions to meaning that have been proposed in linguistics and Artificial Intelligence, again using the ideation base to show weaknesses and gaps in those alternatives; and Part 5 brings the book to a close with an extended discussion of the role of language both for cognition and in the development of theories of cognition. An extensive bibliography and detailed index are provided (although I have seen at least one exemplar with a substantial chunk of the bibliography missing: pp. 631–638; this is particularly unfortunate as it includes all of the entries for works by Matthiessen that take the discussion in CETM further, so it would be worthwhile checking these pages are present before committing to a purchase!).

The different parts of the book consider sufficiently diverse topics that they probably already select different readerships. Halliday and Matthiessen note that the book grew ‘dialogically’ over a lengthy period, and the material selected for inclusion reflects this: the tasks discussed are tasks that the authors themselves have been confronted with over the years and so sometimes may not, to the distanced reader, appear to be the most logical of choices. For the reader solely interested in an account of the semantic classes and organisation of a language, Part 2 will be the main point of interest and the others may appear peripheral; for computational linguists working in natural language generation, Part 2 combined with Part 3 will be the focus,

while for cognitive scientists Part 5 is more relevant. Moreover, since the discussion is primarily concerned with English grammar, semantics and text, it is natural to ask of other languages — and here there is discussion (in Part 2) both of a similar approach to the ideation base of Chinese (which Halliday speaks fluently) and of cross-linguistic contrasts adopted in linguistics (in Part 4): these discussions will be of more interest to linguists concerned with language typology and variation. Of course, if one happens to be a reader with interests in several of these areas, then the overall relevance of the book is enhanced considerably.

Regardless of readership, however, there is one central dominant theme that runs through every aspect of the book’s discussion and which crucially informs the methodology adopted: this is the relationship between grammar and semantics. Halliday and Matthiessen argue that the relationship between grammar and semantics is essentially ‘natural’. This means that the organisations and constructs we find in grammar are echoed in, while themselves echoing, the organisations and constructs we find in semantics. A sharp contrast is therefore drawn between how, on the one hand, grammar (or as it is conceived in systemic-functional linguistics: *lexicogrammar*, so as to include lexical and grammatical information within a unified description) relates to the less abstract levels (or *linguistic strata*) of phonology and phonetics, and how, on the other hand, grammar relates to the more abstract stratum of semantics. The former relation is (by and large) ‘arbitrary’ in the sense made well-known by Saussure: we cannot draw many conclusions for lexicogrammatical or semantic organisation on the basis of the fact that one language selects the sequence of sounds ‘k-a-t’ while another might select the sequence ‘ne-ko’ when drawing attention to the four-legged tailed animal commonly kept as pets but which are not dogs; the relationship between phonetic ‘sign’ and lexicogrammar or semantics is largely arbitrary, or ‘conventional’. This arbitrariness is itself functionally motivated: if we could not create arbitrary labels for things, states, events, qualities then we would not have one of the basic resources necessary for human language — we would be limited to just those meanings that had some natural phonetic or gestural interpretation: probably a rather short list!

But when we move to consider grammar and

semantics, we do not need to maintain arbitrariness — indeed, quite the opposite is the case: in order to maintain both learnability and utility, semantics becomes in many respects a reconstruction based on the organisation of grammar. Semantics can be seen (metaphorically) as using the organisation of grammar as a foundation, a starting point, from which to begin its own life. Thus, while the combination of particular sounds to indicate some element of our experience is strictly conventional, the fact that an experience is decomposed by a grammar into a structured configuration composed of a process and some participants and circumstances is *not* arbitrary for our semantics. For example, in the clause:

<i>The boy</i>	<i>kicked</i>	<i>the ball</i>	<i>all day.</i>
Participant	Process	Participant	Circumstance

a ‘quantum of experience’ has been constructed semantically (or *construed*) as an event involving someone (the boy) who acts on something else (the ball) over some extended period of time (all day). This construal is motivated by the fact that it allows us to talk of the boy doing other things, of other kicking events, and of other things that happened to the ball: the grammar and its natural semantic interpretation therefore allow us to generalise over various dimensions of this and other experiences. The grammatical construction of the clause thereby echoes and supports the *semantic* interpretation by which the experience gains meaning.

This view of an intimate correspondence between grammatical patterns and semantic organisation is nowadays finding increasing support in virtually all flavours of linguistics. It is, however, taken considerably further in and by systemic-functional theory and understanding the consequences of this alone would repay much of any time spent working with the book. In contrast to several linguistic approaches where the relation between grammar and semantics is considered as ‘natural’, the view within systemic-functional linguistics is *constructionist* rather than *essentialist*: that is, grammar is natural not because it corresponds to an already developed model of experience, the cognitively constructed real world, but instead because it itself provides a tool for constructing that model of experience (CETM, p. 17).

The point of departure for CETM was already present in Halliday’s foreword to his *Introduction to Functional Grammar* (1985/1994) — the single most extensive and generally used introduction to grammatical analysis with the systemic-functional tradition. This book presents extensive examples of the functional analysis of English and is widely used by those concerned with analysing texts; it is certainly the place to start when questions are raised concerning the kind of grammatical analysis assumed by the discussions in CETM. Halliday writes there:

“*The adult language has built up semantic structures which enable us to ‘think about’ our experience — that is, to interpret it constructively — because they are plausible; they make sense and we can act on them. And the systems of meanings have in their turn engendered lexicogrammatical structures that are likewise plausible: hence we have verbs and nouns, to match the analysis of experience into processes and participants. . . . This is how children are able to construe a grammar: because they can make a link between the categories of the grammar and the reality that is around them and inside their heads. They can see the sense that lies behind the code.*” (Halliday, 1985, p. xviii)

This link between grammar and meaning then provides the methodological point of entry for CETM. Halliday and Matthiessen draw attention to many detailed *differences* in grammatical behaviour that can only be sensibly motivated by positing corresponding differences in semantic classes and organisation. In this respect, CETM is clearly offering a reappraisal, or rather a reaffirmation, of the position set out by Whorf.

A systematic presentation of the results of this investigation then provides the contents of Part 2 of the book. This consists of a detailed semantic taxonomy made up of less than 100 concepts that is meant to form the ‘most general’ categories available for organising experience. The very general concepts present in this taxonomy correspond to broad *grammaticised* meanings and are argued to provide an organisation into which any more specific categories, such as those found for particular words or lexemes, are expected to fit. This grammatical orientation in general is perhaps the single most distinctive feature

of the approach, but it is made even more distinctive by a focus on the *clause* as the most ‘most natural gateway’ to semantics. For Halliday and Matthiessen, and systemic-functional approaches at large, it is the clause where the relationships and categories employed come closest to those found in the semantics. Words are, in comparison (and for strongly motivated functional reasons), rather unrevealing concerning semantic organisation and Halliday and Matthiessen warn, as others have done, against drawing deep conclusions on the basis of the presence or absence of particular words or single grammatical patterns in a language; indeed, most criticisms of the Whorf hypothesis concerning the relation between language and thought rely on simplifications of this kind (cf. Pullum, 1991).

Halliday and Matthiessen take great pains to emphasise that the most revealing aspects of grammar are not to be found conveniently displaying themselves for all to see as word-endings, case markers, bits and pieces of morphemes lying strewn across the landscape like shards of ancient pottery. In their analyses they rely extensively on the Whorfian notion of *cryptotypes*, or ‘reactances’ in the grammar. These are ‘covert categories’ that are only visible given combinations of, often seemingly unrelated, grammatical phenomena. For example, the basic division adopted in systemic-functional grammar between distinct types of clauses concerned with different areas of meaning — the material (essentially ‘doings and happenings’), the communicative, the mental and the relational — are motivated not by any single simple aspect of their expression in grammar, but instead by the fact that they combine several distinct grammatical phenomena in distinctive ways. Thus if we combine different types of grammatical processes and simple present progressive, we obtain sentences that differ sharply in their acceptability and interpretation:

1. I am building a house. [material]
2. I am seeing a house. [mental]
3. I am being tall. [relational]

All have rather different interpretations not attributable to the tense selection alone. The more distinctive patterns of combination that are found, the stronger the evidence for underlying differences in

covert categories. This requires detailed grammatical analyses often of entire texts and in larger numbers.

In this respect, revealing the organisation of grammar, and consequently of semantics, is more like high-energy physics than it is like archeology. An extensive theoretical apparatus is required to set up the questions — in the case of CETM the framework of grammatical analysis — and the results are only visible in the observed interactions between grammatical phenomena, the tendencies of syndromes of varieties of grammatical forms occurring together or not, and in patterns of interactions in relative frequencies dependent on situation and text type. Some further consequences of this for the book are that appeal is often made to the detailed grammatical analysis of short pieces of natural text and dialogue; this brings the sometimes quite abstract discussion down to earth with a bump — but it also makes it clear that the semantic generalisations being pursued are rooted very much in actual language use and it is only in the analysis of such language use that the meanings that provide for our construction of the world are really made visible. Again, as Halliday explains in his earlier *Introduction to Functional Grammar*:

*“Only the grammatical system as a whole represents the semantic code of a language. For example, it would be pointless to take one feature of the grammar of English, such as the prevalence of phrasal verbs, or the intricacies of the tense system, and try to relate it to some non-linguistic aspect of European or English-speaking culture. But it is far from non-sensical to take one such feature, put it together with a large number of other very general grammatical features — for example the clause as an item of ‘news’ . . . , the location of ‘newsworthy’ information . . . , the meaning of effective voice in material processes . . . , the tendency to nominalize . . . , and others — and derive from these a chain of reasoning, showing first the reasons **within the grammar** why phrasal verbs are favoured in English . . . , and then taking the much wider canvas of which this forms one small part and relating it to the patterns of language use in our society, the historical changes that have taken place in the last 500 years, and the ideological*

systems that underlie them.” (Halliday, 1985, p. xxxi; *emphasis in original*)

While it might be “far from non-sensical” to approach the semantic code of a language in this way, this may also appear to many to be hopelessly ambitious: and yet this is precisely what Halliday and Matthiessen have now done in CETM. This could only be made to work, of course, given a vast background of preparatory work: the connections drawn within the grammar are only possible because of the decades of work in functional grammar that has teased them out; the historical perspective is added by detailed functional analyses of texts drawn from different time periods; the use of the language in English-speaking cultures is made available by extensive analyses of spontaneous spoken language in varying situations. It also depends crucially on the organisation of the model of grammar adopted for providing indications of semantic organisation: the finer and more semantically oriented the grammatical analysis of the clauses of a language is, the more discriminating a tool is available for showing the semantic code of that language. For this reason, the discussion of the book draws very heavily both on the kind of grammar presumed and on the categories and dimensions of organisation found in that grammar. This is also important for understanding the view of semantics proposed since systemic-functional linguistics claims that these basic categories and dimensions of description are applicable at all levels of linguistic theorising: grammar and semantics included. This range of work can only be hinted at within CETM itself and so the interested reader who wants to follow these directions in depth will have plenty of background reading to do; fortunately, in the area of grammar, there are now extensive introductions available (e.g., Butt et al., 1995) as well as detailed descriptions of the grammar of English used — most notably, for example, in Halliday (1985) and Matthiessen (1995). Detailed work on the book’s central claims must involve this literature, although this will not be necessary for an initial exposure.

CETM presents very much more, however, than a straightforward stocktaking of how our semantics is organised; and this is why its description occupies only one of the five parts of the book. Of almost

equal importance is how CETM sets out some of the consequences of the position it adopts on the crucial interreliance and interdependence of grammar and semantics.

Systemic-functional linguistics has always considered texts both as products and as processes — a text unfolds and develops its meanings as it proceeds from beginning to end. Meanings are therefore not static but unfold in time. There are, however, some very different ‘timescales’ that are relevant in the process of making meanings — in *semogenesis* as Halliday and Matthiessen label it — and these also come into the discussion of the development and organisation of semantics. For example, grammar does not spring into being fully formed in the life of an individual, but is learnt, built up over an extended period. Accordingly, the semantics also grows over this period — it does not suddenly appear fully-formed once the grammar is complete. Halliday and Matthiessen bring this dynamic, changing aspect of the semogenetic process into sharp focus, and it is only with this view that some of the most intriguing questions about the relationship of semantics and grammar can really be raised. Language learners are revealed to actively use their growing resources of grammatical potential to explore and expand their semantic potential. The grammar provides a developing model of the world (among other things) which has the crucial ability to model itself. The view of grammar as a meaning-making tool is a central tenet of the schools of linguistics out of which systemic-functional linguistics grew (e.g., Firth, Hjelmslev: cf. Steiner, 1983) and it is applied here to the full. Moreover, grammar does not stay unchanged over the life of a culture. The grammatical patterns employed in English texts have also changed and developed over the past 800 years and this has had similar consequences for the kinds of meanings constructed. Halliday and Matthiessen again demonstrate how these changes have themselves drawn on the language system as a tool for exploring and re-organising our experience of the world. Here, they show with particular reference to the rise of technical discourse in English how the meaning potential of the culture has been systematically extended in order to meet certain, very specific cultural requirements.

For me, it is this detailed consideration of the consequences of these two scales of temporal de-

velopment — the ontogenetic and the phylogenetic — that provide some of the most thought-provoking material in the book. The way language itself — as a socio-semiotic system — provides its own basis for expansion and growth leads in turn to the possibility of genuine explanation of the organisations we find in language. Language is shown not to be a reflection of something else — such as ‘underlying knowledge’ — but a creator and shaper of the meanings that we can make. This refines the Whorfian hypothesis considerably and shows it to be more than a just a ‘hypothesis’; the mutually defining relationship between grammar and meaning comes instead to provide the driving engine for the development of human meaning both for individuals and their cultures. Anchoring semantic development to a grammatical organisation that itself grows with the individual thus avoids the ‘chicken-and-egg’ arguments that typically accompany claims that language is important for knowledge and experience. Without the driving force provided by the ‘Whorfian’ engine, semantics appears like a rabbit out of a hat — with all the appeals to hidden, behind-the-scenes mechanisms that this makes necessary. With the engine in place, the growth of a rich semantic organisation responsive to the varying demands of situation and culture appears as a natural, almost inevitable result of individuals exchanging meanings within variegated cultures.

Given the dialogic nature of the development of the book, each of its parts can be seen as the beginning of a conversation and it is natural that in each of these parts there is much more to say than could be squeezed into an already rather long book. In some places this is more noticeable and necessary than in others. Both Part 3, on the use of the ideation base in natural language processing systems, and Part 5, the discussion of the role of language in cognition and its modelling in cognitive science, break off rather abruptly.

Part 3 describes in some detail how one would go about producing a situation-specific variant of the ideation base for particular domains — Halliday and Matthiessen adopt as examples two staples of natural language generation, recipes and weather forecasts. As would be expected from the methodology for the ideation base as a whole, the starting point in both cases is detailed grammatical analyses of the kinds of

texts that are found in these two domains. This is certainly useful, and would provide a good, practically-oriented piece of work for an introduction to constructing text generation systems; but the discussion does not take the reader much further towards seeing a completed computational system. Indeed, the reader might be forgiven for thinking that the discussion is purely theoretical, but there has in fact been practical work based very closely on the described methodology that has been used for both natural language generation and automatic analysis. Part 3 could have drawn more on this practical experience to anchor its discussion more convincingly.

Part 5’s discussion of the role of language in cognition and in theorising about cognition is, in contrast, definitely more theoretical. The final chapters gradually build up an argument that cognitive science as generally conceived is actually a limited re-expression of the folk model of cognition drawing on standard resources of technical discourse in English (and other languages). Halliday and Matthiessen are suggesting here that when the disguise of technical discourse is ‘unpacked’ (and they show exactly how to do this), the resulting model is actually an *impoverished* version of that already available in everyday discourse involving people thinking, remembering, reasoning, and the like. To my mind, CETM makes this argument very well; but what is less clear from the discussion is whether it makes any difference. Here again the discussion would have been very much more interesting if the next few steps in the exchange had been taken: what are the *consequences* for cognitive science for the practical investigation of the role of language in cognition given the demonstrated restriction? Again, a few more steps would need to be taken here to really bridge the gap between the CETM-model and discussion within cognitive science.

Other places where further discussion would be very welcome are less problematic. For example, the ideation base structure is likened to other current work both on linguistic and non-linguistic ‘ontologies’; indeed, one forerunner of the ideation base, the Penman ‘Upper Model’, was developed (also by Halliday and Matthiessen initially) for use in natural language generation and still plays an important role in several significant natural language generation

systems in use today (cf. Bateman et al., 1995). Halliday and Matthiessen explicitly compare their ideation base with other proposals for modelling meaning in Part 4, but only mention in passing some currently very significant developments in computational lexicology such as the Princeton WordNet. The rather more refined EuroWordNet structure (e.g., Vossen et al., 1997) does not get mentioned at all, which is a pity since a comparison between the clause-motivated organisation of the ideation base and the lexeme-motivated upper structure of EuroWordNet would have been interesting. In general, however, Halliday and Matthiessen exclude word-based approaches to semantics from their discussion. But ways in which such comparisons could be made are probably clear and so Halliday and Matthiessen can well afford to leave these for future exchanges.

Finally, it must be noted that the book is not particularly ‘reader-friendly’ and the ‘casual reader’ who wishes to open the book at random and receive pearls of wisdom will have a difficult time. CETM is strongly situated within an ongoing discourse of theoretical development within systemic-functional linguistics and is accordingly replete with the technical discourse of systemic-functional linguistics. This needs to be accepted from the outset and is, after all, no different from any other scientific work — it is only when that discourse is not that of the current mainstream that this tends to be overlooked and made a point of criticism. But it is only *because* this technical discourse is now in place that the next, ambitious step represented by CETM could be taken at all. The book therefore needs to be *read* — the terminological frameworks applied are introduced and developed as the book unfolds and this ‘semogenic process’ of meaning construction must be participated in by the reader if the meanings are to be followed. Failure to enter into this process is almost guaranteed to result in misunderstandings.

Nevertheless, this all being said, even the form of the book discourages casual encounters more than was really necessary. For some reason it was accepted by the publisher for publication more or less

as it came off the computer printer: its pages are A4 in size and printed double-spaced. This makes for a very unwieldy package — not the kind of book that slips easily into the pocket for a quick read on the bus (or plane unless excess baggage is not a problem). There are also lingering typographical problems, although these do not in general hinder comprehension (one exception being the running together of text columns on p. 51). I can only hope that subsequent editions will adopt a more professional presentational style that will at least make the initial conditions of opening the book and starting reading more inviting!

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