

A BRIEF SKETCH OF
SYSTEMIC GRAMMAR
(1969)

I should like to describe to you in outline something of the work that my colleagues and I have been doing in the realm of grammatical description and theory. I hope to make six points about the grammar. The name “systemic” is not the same thing as “systematic”; the term is used because the fundamental concept in the grammar is that of the *system*. A system is a set of options with an entry condition: that is to say, a set of things of which one must be chosen, together with a statement of the conditions under which the choice is available.

First, then, the grammar is based on the notion of choice. The speaker of a language, like a person engaging in any kind of culturally determined behaviour, can be regarded as carrying out, simultaneously and successively, a number of distinct choices. At any given moment, in the environment of the selections made up to that time, a certain range of further choices is available. It is the system that formalizes the notion of choice in language.

The system network is the grammar. The grammar of any language can be represented as a very large network of systems, an arrangement of options in simultaneous and hierarchical relationship.¹ The network is open-ended. To the left of each arrow is the entry condition; to the right, joined by a brace, is the set of two or more options which make up the choice. So for example given the entry condition *clause* there are three simultaneous choices to be made: from transitivity, mood and theme. (For speech a fourth choice is added: information.) There are various ways in which selection in one option may serve as a condition of entry to another. In addition to the simple entry condition (if restricted then either intransitive or transitive) there are two types of

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minimal, for three reasons. First, any bracketing more than the necessary minimum is redundant, because the information it contains is recoverable from the systemic part of the description: its function is to show how sentences are related to one another and this is shown in terms of options. Second, the significance of the bracketing is that it indicates where a new set of options is open to the speaker: each node is the point of origin for a set of systems, so that again the determining factor is that of choice. Finally, non-minimal bracketing tends to be self-contradictory. The clause *John threw the ball*, minimally bracketed, is a three-element structure, and this represents its structure as the realization of options in transitivity, Actor Process Goal. If we then consider its structure as a message, assuming one possible reading in which *the ball* is marked out by intonation as *new* information and *John threw* as *given*, the clause will be structured into two constituents: Given (*John threw*) New (*the ball*); and if we introduce another dimension of structure, that of theme-rheme, we shall need a third analysis: Theme (*John*) Rheme (*threw the ball*), still in two parts but with the break at a different place. Thus any item may have not just one structure but many. Since there may be a number of simultaneous structures superimposed on one another in this way, minimal bracketing is the most neutral; in the present example, only a tree corresponding to the first bracketing is an adequate representation of all three.

Fifth, and closely related to the last point, is the question of labelling. There are two ways of labelling: according to structural function, and according to class. Functional labelling will indicate for example that the structure is one of Actor-Process-Goal, or Theme-Rheme, or Modifier-head and so forth. Class labelling will indicate such things as noun phrase, verb phrase, noun, verb, adjective or adverb. It is not always obvious what the difference between the two is. In terms of the present grammar, they are interpretable by reference to the underlying notion of choice. A class is a statement of 'choices now open'; for example the label "noun phrase" means that there are options of singular/plural, count/mass, specific/non-specific and so on. A function is a statement of 'choices already made': thus "subject" means that indicative has been selected, "goal" means that transitive has been selected, etc. The two types of labelling thus as it were face different ways in relation to the concept of choice. Since structure is fully predictable, being derived from the systemic representation, the primary labels used here are functional ones. But the analysis of structural function is componential; in *John threw the ball*, *John* has a

the options that have been selected in that sentence. Three, the structural representation of a sentence is derived by realization from the systemic one, so that the latter is the more abstract ("deeper"). Four, the structural representation is minimally bracketed. Five, the structural labelling is functional and componential, the element of structure being a complex of functions realizing different options. Six, the systemic and the structural descriptions are related by realization statements which show the structural contribution of the options in the grammar.

Notes

1. System networks for English (Kress 1976b) are included as an appendix to Section 1 of Volume 1 in this series.

languages, whether children or adults; and to use language effectively as a means of learning and in a variety of contexts of situation

- helping people to overcome language disorders, educational or clinical: 'slow learners', 'backward readers', aphasics, the mentally handicapped, etc.
- understanding the nature of discourse, and of functional variation in language (*register*); studying particular types of discourse (classroom, medical, etc.) for practical purposes such as the training of teachers and of specialists in the field
- understanding the nature of 'value' in a text, and the concepts of verbal art, rhetoric, and literary genres; gaining access to literature through the careful study of such texts
- using computers to analyse and generate discourse; developing a grammar for decoding and encoding, and a semantic representation to direct and interpret the grammar
- exploring a range of practical activities where language is involved: forensic issues, readability and complexity measures, communication in institutional settings and so on
- relating language to other semiotic systems and to the ideological patterns of the culture

This is a rather broad spectrum of doings, and it reflects the broad foundation on which systemic theory is built. The workshop brochure refers to the theory as being "neo-Firthian"; and although I have never used that label myself, I have always made it clear that the most important influence on my own thinking came from my teacher J. R. Firth. Those who know Yorkshire – once described by Mary Abercrombie as "the Texas of England" – will recognize the significance of the fact that we are both Yorkshiremen, and indeed grew up in the same home town (but in fact you do not need to have heard of Wharfedale in order to take this point – you only need to have heard of Whorf). It is from Firth, of course, that the concept of *system* is derived, from which systemic theory gets its name; and unlike most of the other fundamental concepts, which were common to many groups of post-Saussurean linguists, particularly in Europe, the system in this sense is found only in Firth's theoretical framework.

Firth himself always emphasized his debt to the work of others. Among his predecessors and contemporaries, he held Hjelmslev in particularly high regard (though he thought Saussure overrated); he spoke admiringly of Trubetzkoy, Benveniste, Whitehead, Wittgenstein;

But the one who had the most profound effect on my own thinking was a linguist whom of course I never met, Benjamin Lee Whorf. Whorf, developing concepts derived from his great predecessor Franz Boas, showed how it is that human beings do not all mean alike, and how their unconscious ways of meaning are among the most significant manifestations of their culture. Whorf's notion of the cryptotype, and his conception of how grammar models reality, have hardly yet begun to be taken seriously; in my opinion they will eventually turn out to be among the major contributions of twentieth-century linguistics.

Next I would like to mention five other scholars from whom I gained rich and, to me, new and exciting insights into language. Walter Simon, Professor of Chinese at London University, taught me what linguistic scholarship meant: to focus on language as an object of study, to take the text seriously, and to combine honesty with imagination in the construction of a theory. In China, Luo Changpei gave me a diachronic perspective and an insight into a language family other than Indo-European; and Wang Li taught me many things, including research methods in dialectology, the semantic basis of grammar, and the history of linguistics in China. When I first tried to teach linguistics, in a very disorganized way, David Abercrombie provided a model of how it should be done; he also provided a lucid and totally unbiased account of the principles of speech and of writing, and placed these studies in their historical perspective. Angus McIntosh demonstrated the scope and direction of a humanist linguistics, one that neutralized the opposition between arts and sciences; this he backed up in his own work by a farsighted commitment to a long-term programme of structured research (something I have never been able to achieve), which is now coming to a notable culmination.

At the risk of turning this into too much of a personal statement, I would like to round this part off by referring to some of my own contemporaries. I shall not try to make reference to those with whom I have been most closely associated in the work on systemic theory; it would take far too long to give even a remotely adequate account, and most are, happily for me, present on this occasion. But there have been a few other special acquaintances with whom I have interacted over the years, exchanging ideas when possible and always learning from them in the process.

Jeffrey Ellis was my first trackmate in exploring the (to me) unknown terrain of linguistics. Many years ago we wrote an article together, on temporal categories in the Chinese verb, which would have been my

English in the upper forms of high school. There were two of the team who participated from start to finish: David Mackay, and Peter Doughty. Peter Doughty brought a conception of English in secondary education which was so far ahead of his time that now, twenty years later, we are at last seeing some of his ideas introduced as innovations. David Mackay transformed an impoverished notion of 'reading' into a rich conception of language development in the infant and junior school; his work was followed up by the creation of the "Centre for Language in Primary Education" of the Inner London Education Authority, an institution which might justly have been named after him.

My concern here is with the systemic background; it would be impossible in this space to review work in systemic theory itself, which in any case is the substance of most of the present volume. But in order to bring the background up-to-date, let me refer briefly to three of the salient motifs of the past fifteen years which have provided part of the context for recent systemic work. These are: language and social reality, language and human development, and language in the machine.

George Herbert Mead (1932) regarded talk as one of the two forms of social action – the other one was play – by which an individual built up his identity; and in a series of penetrating and sympathetic studies Erving Goffman described the regulation and maintenance of this identity, under both normal and pathological conditions. Harvey Sacks came nearer to showing how language actually served these functions in a number of brilliant (but unpublished) *explications de texte*, which still however made no reference to the language system. Meanwhile Berger and Luckmann (1966) had described what they called the "reality-generating power of conversation". The work of Gunther Kress and his collaborators, in language and ideology (Kress and Hodge 1979; Fowler, Hodge, Kress and Trew 1979), and of Benjamin N. and Lore M. Colby, in the study of culturally pregnant texts such as religious narrative, have shown the potential of systemic theory as a theory of text and system for interpreting texts as ideological documents, bringing out their significance for the construction of the social semiotic.

Advances in developmental linguistics have introduced a new dimension into language education, especially in the early and middle childhood years. Educators such as Kenneth and Yetta Goodman, Jerome Harste and Martha King have been focusing explicitly on language development in their approach to reading and writing and to all aspects of the learning process, and Sinclair and Coulthard (1975) have shown how the linguistic analysis of the classroom throws light on

this is not to imply that the concept of a discipline is vacuous, but that a discipline is defined not by what it studies but by the questions it seeks to answer, so that in order to understand language, which is what the questions of linguistics are about (the noun *language* is of course a grammatical metaphor – Peter Doughty preferred to talk about *linguaging*, to show that our object of study is more process than entity), we have to study many other things besides, and hence a linguistic theory has to be a means of intersemiotic translation, interfacing with other theories of social meaning and so facilitating the input of findings from elsewhere.

The value of a theory lies in the use that can be made of it, and I have always considered a theory of language to be essentially consumer-oriented. In many instances the theorist is himself also and at the same time a consumer, designing a theory for application to his own task; in others he may be working together with a group of consumers, designing a theory for their particular needs. (Sometimes he may set up as 'pure' theorist on his own, without any particular consumers in mind; or thinking of a particular target group but without actually consulting them – the fate of "contrastive linguistics" is a good example of how this tends to limit the usefulness of the work.) Since there are so many tasks for which one needs a theory of language, any particular theory is likely to be, or very quickly to become, a family of theories – still on speaking terms, one hopes, and with a personal rather than positional family role system. This is why there is no orthodox or 'received' version of systemic theory, such as may arise with self-contained systems that are impervious to influences from outside, when some sort of 'standard' version comes to be defined by the stance adopted vis-à-vis certain issues that are identified from within.

Systemic theory is more like language itself – a system whose stability lies in its variation. A language is a 'metastable' system; it persists because it is constantly in flux. This does not mean that we cannot characterize a particular language, but that our characterization of it has to incorporate this feature. Similarly we can state certain essential characteristics of systemic theory (cf. Fawcett 1983). Let me try to enumerate some of those that are most central to our present theme.

1 A language is not a well-defined system, and cannot be equated with "the set of all grammatical sentences", whether that set is conceived of as finite or infinite. Hence a language cannot be interpreted by rules defining such a set. A language is a semiotic system; not in the sense of a system of signs, but a systemic resource for meaning – what I have often

an item, each of which relates it to a different set of other items, thus making a particular generalization of a paradigmatic kind. This may affect anything from an entire system – transitive and ergative interpretations of English transitivity would be a case in point – to a single instance, where alternative analyses can be suggested for some item in a particular text.

4 A fourth assumption of systemic theory is that language is functionally variable; any text belongs to some register or other. (Dialect variation is also functional, of course, as the symbolic vehicle of social structure; but the term “functional variety” refers to register). The different kinds of situation that collectively constitute a culture engender different kinds of text; but if we understand the semiotic properties of a situation we can make predictions about the meanings that are likely to be exchanged, in the same way that the interactants make predictions and in so doing facilitate their own participation. The notions of field, mode and tenor, together with the subsequent distinction into personal and functional tenor, provided an initial conceptual framework for characterizing the situation and moving from the situation to the text; and much current work in systemic theory is directed towards the construction of an adequate model of register and genre, taking into account the context of situation, the rhetorical structure of the text and the higher-level semiotics that make up the context of culture. This is an essential step in any adequate interpretation of language as a social semiotic, within the tradition that I referred to above as ‘ethnographic’ as opposed to ‘philosophical’ linguistics; but it also has important educational applications, for example in the development of children’s writing (Martin and Rothery 1980/1). In general, as remarked above, differences among different registers are likely to be found in the relative weightings assigned to different systems: the orientation towards different metafunctions and different options in semantics. In some instances, however, more clear-cut distinctions emerge; for example the different kinds of complexity associated respectively with speech and writing.

5 Systemic theory accepts the Saussurean concept of how the system is represented by the observed *actes de parole*. But, as I see it at least, this has to be interpreted as Hjelmslev interpreted it; first in the framework of system and process, where the process (text) *instantiates* the system, and secondly, with a distinction between instantiation and realization.

The latter refers to the stratal organization of the system (and therefore also of the process) whereby the expression is said to *realize* the content.

To take the latter point first: we assume that language is stratified. The number of strata ("levels", in Firth's terminology) that we recognize, and the kind of relationship between strata, will tend to depend on the questions we are asking and the problems we are trying to solve. For example, for certain purposes we may want to work with the Hjelmslevian model of content and expression, the only stratal boundary being the Saussurean line of arbitrariness; this is a way of pushing the grammar so far towards the interface as to incorporate the semantics within it. For other purposes, such as the study of language development, especially the move from protolanguage to language, we may want to interpret the lexicogrammar as a third, purely abstract, level of coding that gets 'slotted in' between the two interface levels of semantics and phonology. We may want to add other, higher-level strata to accommodate a theory of register, or to represent the knowledge base in a text generation program. It is the basic concept of stratification that is important.

Secondly, whereas Saussure, in separating *langue* from *parole*, drew the conclusion that linguistics was a theory of *langue*, systemic theory follows Hjelmslev in encompassing both. For a linguist, to describe language without accounting for text is sterile; to describe text without relating it to language is vacuous. The major problem perhaps is that of interpreting the text as process, and the system as evolution (its ontogenesis in the language development of children): in other words, of representing both the system and its instantiation in dynamic as well as in synoptic terms. Dynamic models of semiotic systems are not yet very well developed, and this is one of the problems that theorists of language now have to solve.

6 It is a general feature of semiotic systems that they develop and function in a context, and that meaning is a product of the relationship between the system and its environment – where that environment may be another semiotic system. For language, the context of the system is the higher-level semiotics which it serves to realize; hence it is the stratal representation that allows us to interpret the context of the system (Malinowski's "context of culture"). It is in this sense that semantics is an interface ("interlevel", in earlier terminology), namely when we are considering it as the relationship between lexicogrammar and some higher-level semiotic. The context of a text, on the other

theory to act on people. But thinking about language is also, of course, thinking about people, since there is no language other than is people's acts of meaning; so that action and reflection in linguistics are not very clearly separated activities. Just as, in the evolved adult language, mood and transitivity are mapped into a single clause, so that one cannot mean in one way without also meaning in the other, so in reflecting on how people communicate we are likely to be also acting on their communicative processes. It seems to me that this is a perspective which most systemicists share.

science from studying the models constructed in the name of philosophy of science, rather than from observing scientists at work. But these models are highly idealized; even when they set out to be descriptive (as opposed to normative) they present a picture that is far removed from scientific daily life. I share the view of colleagues such as Victor Yngve and Claude Hagège, that in so far as we want to emulate those working in the more established sciences, it is the working practices of the scientists themselves that we need to be aware of – how **they** construct theories to explain the phenomena **they** are studying. These are what count for us; not the philosophical interpretations of science, which are theories constructed to explain how scientists work (Yngve 1986; Hagège 1988).

As an illustration of this point, consider how linguists have constructed the notion of “counterexamples”. If anyone offers a generalization, others immediately start hunting after counterexamples, in the belief that this is how you test a hypothesis: if you find one counterexample you have demolished it, and it has to be abandoned. But this is an idealization; it is not how people actually work. What you do with a generalization is to apply it, and when you find it doesn’t work a hundred percent of the time (which it never will do), you try to improve it, to define the limits of its applicability, and seek further generalizations to back it up. (Grimm’s law was not abandoned; it was shown to apply only in certain cases, and then backed up by the addition of Verner’s law.) In order to escape from this trap, linguists have had to invent the concept of the “prototypical”. But they would never have needed such an escape hatch if they had not dug the hole for themselves to fall into in the first place.

I would like to enumerate, in this paper, certain principles and practices which I think are usually followed by linguists working in systemic-functional linguistics. These are not derived from any idealized model of scientific endeavour. They seem to me to correspond fairly closely to the sort of things that scientists do, and the general positions they adopt, in their everyday working lives. But I am not setting out to prove that linguistics, whether systemic or in any other model, is a science. My aim is simply to characterize how some linguists go about their work: what they adopt as their working principles. It is useful, I think, to try to make these principles explicit. (For the concept of ‘doing science’, see Lemke 1990a.)

1 Categories that are used in the analysis of language are general concepts which help us to explain linguistic phenomena. They are not “reified”: that is, they are not endowed with a spurious reality of their own.

So, for example, while *system* itself is a theoretical category, each instance of a system, such as *mood*, is a descriptive category; similarly, *option* (or *feature*) in a system is a theoretical category, while each particular instance of an option, like *indicative* or *declarative*, is descriptive.

Descriptive categories are thus of a lower order of abstraction. They can be defined in such a way as to make them subject to verification. For example, if in defining “passive” we include morphological criteria, saying that passive is distinguished from its alternative (“active”) by systematic variation in the morphology of the verb, then it becomes possible to say that a particular construction in a given language is not a passive, or that there is no passive in the given language at all. (Note that, if it is claimed that some descriptive category is a “universal” of language, such a claim can only be evaluated if there is some explicit formal definition of this kind. A universal feature is different from a theoretical category: it is a descriptive category that is being said to be present in every language.)

3 Within both these types, theoretical and descriptive, the categories are defined not individually but in relation one to another. For example, “Theme”, in English: this is defined not only in relation to Rheme (through the structural configuration *Theme* + *Rheme*) but also in relation to the category of *clause*, to other functions in the clause like *Subject*, to the system of *mood*, its various options such as *declarative*, and so on.

There is no ordering in such definitions; we do not **first** set up one set of categories and **then** derive other ones from them (we may have to express the description in an ordered way, since Chapter 1 has to precede Chapter 2 in the grammar book; but that is a question of presentation). The only ordering is that of delicacy: more specific categories depend on those that include them (i.e. that precede them in generality, as *indicative* precedes *declarative* and *interrogative*). But even this is not a definitional ordering. For example, *past*, *present*, *future* are defined as options in the English system of *tense*, which is a system of the *verbal group*. But, equally, the *verbal group* is defined as the entry condition to the system called *tense* whose options are *past*, *present* and *future*.

4 All descriptive categories are identified from three perspectives: those of (i) the higher level, (ii) the same level, (iii) the lower level. This is sometimes referred to as (i) “from above”, (ii) “from around” and (iii) “from below”. For example, in English the Subject is that which

Now consider the case of *comparative* description: that is, using the categories set up for one language as tools for exploring another. Here the direction of inquiry is typically reversed. Instead of beginning with a question seeking to explain the formal pattern in (iii), we begin with what was originally the answer to such a question, namely the functional generalization under (i). So, for example, if we are using the concept of Subject to investigate the grammar of Chinese, we don't say "Is there a nominal element in the clause that accompanies the Finite operator and also turns up pronominally in the tag?" – which would not be very helpful, since we would first have to find Finite operators and mood tags in Chinese before we could ask the question! We say "Is there a nominal element that has special status in the interpersonal function of the clause, as being the one on which the argument is made to rest?" The assumption is that, if there is any such element, it will be recognizable somehow or other (that is, identifiable from perspective (iii)), although not the way it is in English.

In other words, the comparison is made from the vantagepoint of perspective (i). We look at the meaning of some category in the language of reference, and then ask if there is any category in the language under description that has a comparable function taken in the context of the whole. Almost all descriptive work today is in this sense comparative; and this is reasonable, since there is no point in pretending, when we come to describe a language, that no other languages have been described before, or that we cannot learn anything from those that have. Ideally – but let me say clearly that this is not what is usually done! – each language should be described twice over: first comparatively, using categories drawn from other language as guides, and then *particularly* – entirely in its own terms, as if no other language had been described before. This is the only way to ensure that it will not be misrepresented. Historically, the second one was the way the ancient Indian and Greek grammarians proceeded; first they described the forms, perspective (iii), and then they questioned why these forms arose: why is this noun in this particular case? why are there two sets of forms for certain verbs? and so on. This was the origin of syntax. The reason why syntax never evolved in China is that Chinese has no morphology; so questions of this kind were never asked.

6 We have said that comparative description begins from the vantagepoint of perspective (i): we look for categories which are comparable when viewed "from above". But by itself this could be misleading. We do not, in fact, start out by trying to identify individual

measuring functional similarity across languages. The only principle is, that since there is a limit to the number of names that are available it seems sensible to reuse existing names if we can. (Of course there is no limit to the number of new names we could create; but they soon become an awful nuisance to remember.) The danger in this is that they have to be reinterpreted each time they are applied to a new language; and the best way of dealing with this situation, in my view, is to ensure that the metalanguage (the language of description) is always created in the language that is **under** description. Of course, we write grammars of Chinese in English; and we write grammars of English in Chinese. But the English term "Subject" will be prototypically defined according to the category of Subject in English; so the equivalent Chinese term *zhuyǔ* will be prototypically defined according to the category that it labels in the grammar of Chinese.

However, given the system as the fundamental category for comparison, we can develop a principled approach to the question of 'same or different'. Let us take a different example: say the category of passive in English, as a concept for explaining Chinese. We could reason like this. In any clause with two or more participants, there is a system in English whereby their textual status may be reversed: typically, this involves switching between thematic prominence (Theme) and informational prominence (New). Example: *the rain obscured my vision/my vision was obscured by the rain*, where the first has *the rain* as Theme and *my vision* as New, the second has *my vision* as Theme and *the rain* as New. We call this system "voice". In the voice system, one option is unmarked, the other marked; we call the unmarked option "active", the marked option "passive". The active voice assigns to the most "active" participant the status that is typically associated in the clause with that of Theme.

We can then compare this system with a system in another language, point by point: first the notion of a system with some comparable function of this *textual* kind, constructing the participants into different values in the message; then the scope of that system – which classes of clause possess the option; then the particular textual systems with which the choice is associated; the question whether there is also an experiential difference in meaning (as in English between Agent coded as Actor and Agent coded as Manner); evidence for the opposition of a marked versus an unmarked term and so on. It seems reasonable to label a system in another language which lies similarly at the intersection of transitivity and theme by the familiar name of "voice".

while the focus of information was most typically located at the end of the clause. Thus, if the speaker wants to focus the information on the Process he splits the verbal group into two parts, so as to get one part at the end of the clause; e.g. *you left the best part out*, instead of *you omitted the best part*, where the focus is marked and disturbs the required balance of information. Functionally, we can now compare this with the *ba* construction in Chinese: the pre-verb *ba* fulfils a similar function, that of getting the verb at the end of the clause, which in Chinese, as in English, is the typical location of the information focus. Hence Chinese *ni ba zuihao-di yi bufen wangdiaole*, rather than *ni wangdiaole zuihao-di yi bufen*. (Would we therefore give the same name to the two systems: the choice between (e.g.) *omit* and *leave out* in English, and that between a non-*ba* clause and a *ba* clause in Chinese? We might feel here that, although the two are similar from the vantagepoint of perspective (i), from the vantagepoint of (ii) and, especially, (iii) they are rather too different. As always, what matters is that we are aware of the relationship between them.)

9 The data on which description rests are real language texts, instances of spoken and written language. In my opinion, texts of spontaneous speech are the most revealing, because it is in spontaneous speech that linguistic systems are most richly explored and exploited, and the meaning potential put under the greatest pressure to expand.

It is now at last possible to assemble and process large quantities of natural text, in the form of a computerized corpus. Spoken language still takes a long time to collect and transcribe; but it is not impossible to include it, even if not in its most spontaneous form – the radio is a valuable source. Such corpuses have a dual function. On the one hand, they enable us to base the grammar on what people actually say and write, in real contexts of situation; this is a great deal more satisfactory than relying on our own invention. On the other hand, they enable us to undertake large-scale quantitative studies of grammatical patterns, and so to explain the grammar in terms of probabilities. Both these features, in my view, are fundamental to the future development of grammatical theory, and hence to the successful use of grammatical descriptions for applied purposes such as machine translation and language teaching (cf. Sinclair 1987; Halliday and James 1993).

10 Descriptive categories are set up to explain the phenomena that we find in languages. Hence they are described as explicitly as possible, in such a way as to link them clearly to their exponents. This does not

configurations, or *structures*, are realized, in their turn, as sequences of classes; and the cycle of realization relates one rank in the grammar to the next – for example, the rank of *clause* to that of *phrase/group*. Thus, the system of *theme selection* in English is realized as a configuration of Theme + Rheme; the feature *unmarked theme* is realized by mapping Theme on to some element that is realizing a choice in the system of mood (if the mood feature *declarative* is chosen, then on to Subject); the conflation Theme/Subject is then realized by the class *nominal group*.

In this way the abstract categories of the grammar are made explicit, through various cycles of realization. By using a computer for generating and parsing we can test how close to being explicit they actually are.

12 Realization also relates the categories of one level (stratum) to those of another. Hence, the categories of the lexicogrammar are related “upwards” to discourse-semantics and “downwards” to those of phonology.

Realization is probably the most difficult single concept in linguistics. It is the relationship of “meaning-&-meant” which, in semiotic systems, replaces the “cause-&-effect” relation of classical physical systems. Unlike cause, realization is not a relationship in real time. It is a two-way relationship that we can only gloss by using more than one word to describe it: to say that wordings (lexicogrammatical formations) *realize* meanings (semantic formations) means both that wordings *express* meanings and that wordings *construct* meanings.

The core of a language lies in its lexicogrammar, and specifically in the way meaning is constructed (or, better, *construed* – that is, constructed in the semiotic sense) as a metafunctional complex, ideational, interpersonal and textual (cf. Matthiessen 1989). Just as, in describing particular categories within the grammar, we approach them from three perspectives, so in describing the grammar as a whole (i) we relate it to what it *realizes* (what is “above” it), the semantics; (ii) we describe it as a system *in its own terms*, and (iii) we relate it to what it *is realized by* (to what is “below” it), the phonology. Again, the interpretation of the grammar of a language will always involve a compromise among these three perspectives.

13 Because semiotic systems are built on the relationship of realization they are potentially multistratal. Just as the lexicogrammar “realizes” the discourse-semantics, so the semantics in its turn “realizes” the context of situation and of culture.

there has to be a “science of language”, or a science of semiotic systems, just as Saussure was saying almost a century ago – but more urgently needed now, because semiotic systems are taking the place of physical systems as the model that we use to think about all the rest. But that is still some way off in the future.