ESL Classroom Dynamics: Towards a Discourse-Processing Interpretation

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A consistent trend in theory and research on second language learning has been toward greater emphasis on the analysis of elements of background knowledge and discourse rather than on sentences. Two major kinds of approach, textual and ethnomethodological, can be identified within the context of this general trend. An outline of these approaches is presented, together with discussion of their major strengths and weaknesses. Some implications for ESL research, theory, and practice are reviewed. It is proposed that ESL classroom dynamics may be understood in terms of representative discourse-worlds and that responsibility for classroom discourse analysis should be encouraged in both ESL teachers and their students.

Over the past few years of theory and research in language learning and psycholinguistics, there has been a consistent trend towards emphasizing the centrality of higher levels of linguistic knowledge in language processing—knowledge, for example, about the varying functions and registers in social situations, and about language itself. Perhaps the most significant general shift in thinking about language behaviour resulting from these research trends is identified in our realization that almost all communicative activity (including that which takes place in the L2 classroom) is tied in important ways to these various kinds of background knowledge used in language processing. It is in the search for greater definition and more accurate characterization of these elements of background knowledge that research into discourse processing finds its focal point, and, while recent work is not necessarily inconsistent with much of the valuable earlier research at the sentence level, it is the higher order constructs, such as *schemata* and knowledge *frames*, rather than sentence elements, which are now seen to "drive the language system."

If the foregoing is a reasonable general characterization of the shifting tide of theory and research, it does not, however, adequately reflect the range of approaches being taken to modelling discourse processes, nor does it reflect the particular problems which each analytical approach faces. Before any well-founded suggestions can be made concerning the nature of ESL classroom discourse, and about how discourse processing models in general might contribute to our understanding of teacher-student interactions in the ESL classroom, it is necessary to review some of these various approaches and problems. This paper is accordingly divided into sections which deal with the characteristics and problems of

two major approaches to discourse analysis (textual and ethnomethodo-
logical) and with the implications of discourse-processing models for
future directions in ESL theory and practice.

APPROACHES TO THE ANALYSIS OF DISCOURSE PROCESSING

Textual Approaches

There are at present two principal modes of inquiry into discourse
processing. The first of these is to be found in the close analysis of *texts*.
Typically, work in this area is devoted to modelling not only the structure
of texts in terms of their inherent meaning, but of tying this meaning to
aspects of cognitive processing.

The inception of this textual approach and of some of the associated
terminology can be found in the work of the psychologist Bartlett (1932),
who in some simple but elegant experiments, demonstrated that individ-
ual subjects remembered both short stories and visual input such as
simple drawings in systematically different ways, according to their back-
ground knowledge, temperament, and social group membership. Three
main conclusions from Bartlett's rich research reports were as follows.
First, he found that in their interpretation of the world around them
individuals bring with them *schemata*, which he defined as the "active
organizations of past reactions or of past experiences, which must always
be supposed to be operating in any well-adapted organic response" (1932,
p. 201). Second, he found that individuals, while basing their comprehen-
sion of and involvement with linguistic or visual material upon these
schemata, actively construct their responses in an ongoing manner
through time (Bartlett also referred to schemata as "active developing
patterns"). Third, he found that the manner in which processing took
place could be related to socio-cultural background—schemata, that is,
were socially organized (1932, pp. 256-267).

It has now become almost mandatory to cite Bartlett's work in more
recent treatises on discourse processing, even though the kinds of studies
which can be directly or indirectly traced back to his inspiring work have
themselves varied greatly. Some approaches which have been particularly
influential over the past few years have been those of Schank and Abelson
(1977), Kintsch (1974, 1977), and van Dijk (1977).

Schank and Abelson, working in the field of computer modelling and
Artificial Intelligence, reinterpreted schemata in terms of what they called
"scripts, plans and goals." In summary, they developed a model in which
activities such as story comprehension or social encounters, like those
which typically take place in restaurants, involved interactive processing
between particular areas of experience-based knowledge (scripts), the

general knowledge of how to achieve what we want in situations (plans) and knowledge of what such plans are directed towards (goals). The main thrust of their work was to analyze the structure of stories in a way which took account of all these types of schematic knowledge that the language user brings with him to texts. When analyzed stories were fed into computers, specific programmes (PAM, SAM, and FRUMP) were partially successful in answering questions about the text, questions which required use of the script, plan and goal constructs. This partial success and other more recent work give continued impetus to the interpretation of texts within a schema-theoretical framework.

One of Kintsch's principal contributions to discourse processing models has been to indicate the *hierarchical* nature of textual processing, and to suggest a way of capturing the related structure of textual inferences in formal description. The solution Kintsch proposed was to break texts down into their propositional components (or into their propositional deep-structure). These components were then expressed in the form of a *text base* (for a useful guide to the related analytic procedures, see Turner & Greene, 1977). The foundations of Kintsch's analysis perhaps share more with Fillmore's Case Grammar than they do with those of Schank and Abelson in emphasizing the *conceptual* relations between intra-textual arguments. Nevertheless, Kintsch's acknowledgement of Bartlett's schema-theory is clear, and he stresses that our psychological understanding of prose recall depends on reproductive, constructive, and reconstructive processing (1977, pp. 363-375).

Van Dijk's contribution lies in his attempt to formalize within a coherent theory of contextual processing the aspects of schemata which are due both to background knowledge and to relations between elements of textual information. While the model developed by van Dijk is extremely complex, it is possible to isolate two constructs which are central to his description of the relationships between textual and contextual discourse processing. The first is *macro-structure*, which van Dijk uses to refer to the *topics* which are at the heart of all discourse activity, and which are properties both of cognitive information processing and of hierarchically ordered textual meanings (p. 143). The linguistic evidence he finds for the existence of such macro-structures comes from the presence in discourse of such features as topic sentences, pro-form reference and sentential connectedness. It is these latter features which contribute to the second construct, the *cohesion* of discourse, so crucial in inferential processing and understanding. In his treatment of textual cohesion, and its relation to macro-structural features of interpretation, van Dijk shares much with the analysis of cohesion in English by Halliday and Hasan (1976).

What the above approaches have in common is of more significance than are their differences: it is the drive to capture discourse dynamics in

terms of formal description, to provide, in other words, a text or discourse "grammar" which expresses generalizable relations between underlying elements of linguistic communication. Before turning to consider alternative approaches, several important problems and limitations of the textual approach should be noted.

First, there is the problem of finding *evidence* for the proposed grammatical constructs. It is an unfortunate consequence in linguistic analysis that the higher the semantic order of constructs, the more abstract and experimentally intractable they become. While research remained at the level of sentence grammar, it was relatively easy to provide so-called evidence by asking subjects to judge utterances as "well-formed" or "ill-formed". It is not so easy to answer similar questions about speakers' feelings, intentions, and background knowledge. Almost any utterance, indeed, is at the nexus of many unique contextual and individual interactions, knowledge of which is unavailable to the outside observer or grammarian. This, in essence, means that evidence about textual processing must often come from discourse participants themselves and, even then, there is no easy way of independently guaranteeing that their intuitions or self-analyses are sound. In the absence of clear criteria of grammatical acceptability or unacceptability, grammatical descriptions are likely to be formed on the basis of the discourse grammarian's own inferences (after all, this is to say no more than that the theorist, like the language user, brings with him to his observation of discourse his own processing schemata).

A second and related problem is that of the over-profusion of textual description at the expense of the under-generalizability of the formalisms employed. A brief look at some recent analyses makes the point that discourse analysis often leads to far more complex formulations than those implicit in the language phenomena which they describe. A good example here might be a so-called "network" description by de Beaugrande (1980) of a subject's recall protocol following a Shakespearean sonnet (1980, p. 218). What such a description seems to give evidence of is not only the aforementioned need for the grammarian to intervene and create the interpretation, but also the need for a descriptive metalanguage which is more complex than the language it describes. Unlike Chomskian grammars which, in the relatively comfortable domain of syntax, did manage to simplify and generalize at the same time, recent text grammars often seem merely to map one form of symbolism on to another equivalent one, yielding what might be called "interpretative translations" rather than explanatory models. These problems of interpretative arbitrariness and symbolic complexity have been more fully addressed in a recent review of the field of discourse analysis by Brown and Yule (1983), which includes related discussion of story grammars.

A third problem is that of finding consistent terminology within the field of text-based discourse-processing research. This problem, which directly relates to the problem of descriptive profusion already mentioned, can be succinctly illustrated by the variety of reference found even among the theorists so far mentioned. For while Schank and Abelson interpret Bartlett's schemata within terms of their "scripts", Kintsch (1977), p. 375 can be found equating schema with the term *frame* (used by Minsky, 1975), and van Dijk (1977, p. 159) uses the term "frame" in discussing Schank and Abelson's restaurant scripts. A passage from de Beaugrande (1980) perhaps suggests that in the current state of research, terminology is largely a matter of individual taste.

> These four perspectives yield a gradation from general access toward operational directionality and order. Frames and schemas are more oriented toward the internal arrangement of knowledge, while plans and scripts reflect human needs to get things done in everyday interaction. One could argue that schemas are frames put in serial order, that plans are goal-directed schemas, and scripts socially stabilized plans. (p. 164)

Finally, there seems to be a logical problem in any attempt to construct a text grammar which describes the *commonality* of linguistic experience when the underlying schema-theory is itself predicated on belief in the centrality of *individual* background knowledge and interpretation in language processing. Such grammars, if they are to provide explanation, would seem to have to face the problem of incorporating a distinction between shared and individual knowledge, a task which goes far beyond anything so far attempted.

Despite these problems, the basis of schema-theoretical investigation of discourse laid down by Bartlett remains a strong and productive one. It is perhaps surprising, however, that so little research has been done on the culture-specific schemata which second language learners bring with them to the learning of a new language. Bartlett himself commented at length (even if rather informally) on the group specific characteristics of story and informational recall among Swazi and Zulu, as well as British, subjects. Few more formal experimental studies, however, have been conducted to study such effects. The studies which have been conducted have all yielded strong support for the idea that story schemata—schemata, that is, covering the ways in which narrative ideas are expressed and organized—are culture-specific, and that the presence of schemata has a significant effect on the ease with which information is processed and understood. Kintsch and van Dijk (1975) compared the ways in which American students summarized stories-from Boccaccio's Decameron and an Apache folk tale, and they found that their subjects' responses were far more consistent and secure with

the European material. This, they argued, was due to the presence of story-telling schemata from a European cultural background and to a corresponding confusion when subjects were confronted with the Apache story, with its absence of causal-temporal connectives and its more formal episodic structure.

Kintsch and Greene (1978), following up this earlier experiment, compared responses to four stories from the Decamaron with responses to four Alaskan Indian myths. In an interesting extension of one of Bartlett's procedures, they also compared the sequential telling of a Grimm's fairy tale with that of an Apache tale. Both experiments provided strong indication of the presence of culturally-based story schemata. In both cases, subjects either rated higher, or remembered better the European-structured materials. The sequential telling task, in which subjects each recorded their remembered versions of the stories, passing these in turn in a chain sequence of six students, provided an especially interesting refinement of Bartlett's ideas. The story which Bartlett used in his experiments, entitled "The War of the Ghosts", had itself been an American Indian tale. This, Kintsch and Greene argued, might account for the constructive distortions which his subjects made in their retelling. In the Kintsch and Greene experiment, such distortions appeared in large measure following only the Alaskan story: relatively accurate recall from student to student followed the European story embodying the more familiar schemata (1978, pp. 11-13).

A few studies specifically directed toward description of the effects of culturally-based schemata upon the reading of second language learners have also been reported (see Steffenson, Joag-dev & Anderson, 1979, and Johnson, 1981). These studies have shown that non-native speakers read English materials which related to their own cultural background with greater ease than they read materials which do not, and that groups of Asian, Indian, Iranian, Japanese, and Chinese subjects all recalled more culturally familiar material than culturally alien material from texts whose linguistic complexity was kept constant. All these experiments, then, provide further evidence of the significance of culturally-based schemata in second language learning.

Ethnomethodological Approaches

The second major approach to discourse analysis is derived from work in social anthropology. The principal characteristics of this "ethnomethodological" approach have been well summarized in an overview article by Kantor, Kirby and Goetz (1981). These characteristics include a) emphasis on discovery processes in research which involve shifting hypotheses throughout the sequence of an investigation in accordance with any changing directions of enquiry, b) elaboration of

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the features of context which govern all observed behavior, c) the use of metaphor or any other linguistic devices which allow for a richer account of observed events, d) use of the researcher's own background knowledge and predispositions as a basis for a "disciplined subjectivity" in analysis, and e) concentration on how individuals "make meaning" of environments through language, how they "create order from chaos" or "reconstruct experience" (p. 298). That the textual schema-theoretical and ethnomethodological approaches share a common goal can be readily seen from the similar mention of background knowledge and reconstructed experience found in the description of these last two characteristics. The real differences between the two approaches centres upon the ethnomethodologist's attempt to circumvent some of the problems of formal theories, and the empirical evidence used to support them, through the liberation of the researcher from the constraints of so-called objectivity and, thus, through the liberation of the language of description itself. Accompanying this approach, there is an implicit criticism of the empirical methodology with its particular (empirical) way of knowing. Typically, ethnomethodology involves lengthy transcriptions of language produced in structured or unstructured situations, or of key-informant interviews, together with an eclectic use of analytic techniques for making sense of such data.

The problems of ethnomethodological approaches can be briefly and precisely stated, since they are for the most part just those problems faced by all anthropologists and ethnographers and so have already received much discussion. First, there is the problem of *reliability*, of whether subjective and idiosyncratic observations can ever be replicated. Second, there is that of *validity*, of whether any observations made of individuals or groups can be seen to generalize to other individuals or groups. Third, there are the practical problems associated with the extra time and effort needed for complete contextually-sensitive observation, and with the difficulty of reducing data to manageable form. (For a more complete elaboration, see Kantor *et al.*, 1981).

Despite these apparently insoluble problems, however (problems which are by no means mutually exclusive of those faced by the alternative approach), a rich array of findings has begun to emerge within the framework of this ethnomethodological approach which have implications for ESL. Some good examples can be found in the studies reported in a volume on discourse analysis in L2 research edited by Larsen-Freeman (1980). First, there is a study by Allwright on classroom participation, which combines a number of different analytical procedures (whole-class numerical analysis, case study transcripts, a topical analysis of classroom materials, a task analysis and a text analysis).

Through these many analytical strands, Allwright comes to important insights about the delicate balance between teacher and student turn-taking, pointing out that students may often not respect the ways in which teachers typically "manage" classroom discourse by forcing a seperation between *content* language and "language about language" (the medium of instruction and learning itself). From Allwright's transcripts and text analysis emerges one important general observation for ESL teachers concerning how sensitive they must be to the rules which govern classroom turn-taking and how these rules interrelate with the number of language repairs they initiate. From the ethnomethodological point of view, it is important to realize that perhaps more comes from Allwright's discussion of the nature of the observations themselves than comes from the specific observations made.

A second study within the same volume, by Schwartz, using audio— and video-tapes and transcripts, relates students' repairs of others' speech forms to the contexts in which they took place. Using varied observational techniques, Schwartz was able to offer some important suggestions about classroom interactions, namely, that L2 speakers use both linguistic and extra-linguistic methods of negotiating in repairing each other's conversational utterances, and that they may, indeed, "learn more from one another than they think they can" (p. 152). Other recent investigations which could be added to those of Allwright and Schwartz in their emphasis on learning within discourse context include those on "foreigner talk" (see Long, 1981), on "display questions" (following Sinclair & Coulthard, 1975), and on cultural code-switching (see Gumperz, 1982).

IMPLICATIONS FOR ESL RESEARCH, THEORY, AND PRACTICE

Two general approaches have been outlined, both of which, despite their methodological problems, contribute much to our understanding of ESL classroom dynamics. Three questions which follow such an overview are:

1. What directions can research now take on the basis of past findings?
2. Can any useful shifts in teaching methodology be proposed to accord with the findings of discourse-processing research?
3. How might recent and potential future information from discourse-processing studies alter our conceptions of the role of the ESL teacher and of teacher-student interaction?

In answering the first question, it is useful to recognize the themes which are common to all previous research. Recent discourse-processing research has made us more sure of, and has given shape to what we have believed for some time - that cultural background strongly influences all aspects of second language learning. The ESL literature is already full of descriptions of particular instances of cross-cultural communication as they are influenced, for example, by different socio-cultural interpretations of sex roles and social status, by different politeness conventions, or in the case of Japanese students, by the different relationship between personal ego and group membership (see Cathcart & Cathcart, 1982). What we are now in a position to see is that the sociology of ESL classroom behavior, the presence of background knowledge schemata, and L2 learning processes, co-exist in a relationship of complex interaction. What we can see, in other words, is that the language learner comes to the ESL classroom with what may be called his own *discourse-world*.

The concept of discourse-world processing is still in its infancy, but it is in the modelling of such processing and in the description of the characteristics of the cognitive-cultural worlds in which individual students' schemata develop and take shape that an important research direction lies. The idea that communication takes place in various discourse-worlds (which may either be very close to the experienced reality of the language user, or which may be far away from it) has been suggested in a number of discussions, for example, by van Dijk (1977), and also more generally within the field of modal and linguistic logic (see Allwood, Andersson & Dahl, 1977). The little research which has been done to date on processing within discourse-worlds has concentrated on narrative-world variation in processing by native-speaker subjects. Some research by this author (1981 and in press) suggests that narrative passages can themselves be varied to represent different within-culture discourse worlds (e.g. "fantastic" vs "realistic" worlds), within each of which, logical processing takes varied shape. What arises out of all of this for the future modelling of L2 learning is, quite simply stated, that cultural backgrounds themselves can be seen to constitute different discourse-worlds, discourse-worlds which have their own particular dynamics and in which students will be able to operate conceptually with much more facility than in the discourse-world associated with the language to be acquired.

At present, these ideas are necessarily somewhat untested, even though they have good foundation in theories of linguistic reasoning. What can already be suggested in answer to the second, methodological question, however, is that we could well spend more time both in developing materials, and in classroom teaching, in focussing on the points of contact between the various discourse-worlds represented in any given group of ESL students. This means, more than merely stressing the importance of

exercising students in the functions and conceptual relations within the English discourse-world to be entered, that we devote time and energy to providing opportunities for students to communicate in English about their *own* cultural backgrounds, and to discussing with students the important contrasts between the cultural discourse-worlds in question. It is in this way that we can perhaps most successfully contribute to the crucial inter-cultural discourse-world transitions which have to be made by the learner.

In answer to the third question, about our changing perceptions of the ESL teacher's role, this interpretation implies that, rather than the roles we have become accustomed to discussing (teacher as informer, as notional-functional facilitator, and so on), the teacher will be seen more centrally as a cross-cultural negotiator, and the ESL classroom as being at the intersection of the cultural discourse-worlds represented in any given class. In practical terms, if there is validity in the foregoing characterization of the field of schema-theory and discourse processing, this means that teacher-training of the future may viably concentrate more on the attempt to satisfy the objectives set forth by Crymes (1982) when she argued that both ESL teachers and students must themselves be encouraged to take on the responsibility of becoming their own discourse analysts. In the end, it is our sensitivity to ESL students' adaptations of their background schemata as they make transitions between the first and second language discourse-worlds which may contribute most to cohesion and learning within the ESL classroom - for it is the ESL classroom discourse that acts as the intermediary between the two.

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