CLASSE ROOM RESEARCH

AILA REVIEW-REVUE DE L'AILA
5
(1988)
This volume is dedicated to my graduate students at the Department of English as a Second Language, University of Hawaii at Manoa, for the cross-cultural input they provided to my thinking.
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EDITOR'S NOTE

One thing applied linguists agree upon is that the term 'applied linguistics' is a misnomer, as it suggests applying linguistic theory, methods and research findings to other fields of investigation or to practical concerns. The misconception is at least twofold: for one thing, the term 'applied' can be understood as 'non-theoretical', when it is in fact amply demonstrated by such diverse applied linguistic fields as second language acquisition, translation or computational linguistics that for each of them, theory construction is an essential objective. For another thing, the term applied linguistics singles out one discipline as the alleged basis of academic areas which in reality draw on theoretical models and research methods from a variety of relevant fields. To make sense, then, 'applied linguistics' has to be liberally interpreted. One defining criterion is for the notion to comprise research problems where language is centrally involved, and the solution of which requires an interdisciplinary approach. Additionally, 'applied' can be read as practical, i.e. interdisciplinary research effort is geared to contribute to decision-making in areas of (social) practice. On both readings, theory construction is an essential part of applied linguistic studies.

The field of study chosen as a theme for the 1988 AILA Review exemplifies both readings. Research into second and foreign language classrooms combines psychological, psycholinguistic, linguistic, educational, sociological and anthropological approaches to examine how nonprimary languages are learnt in 'formal' settings, i.e. environments specifically established for that purpose. Findings from L2 class-room research can contribute to a better understanding of a large number of theoretical issues, such as verbal interaction, psycholinguistic processing and the functioning of institutions. Most importantly, however, its purpose is to provide the necessary foundation for pedagogical decisions about L2 curricula, syllabi, methods, techniques, activities, materials, media, and tests. In that sense, classroom research is truely 'applied'.

Yet practitioners in the language teaching profession will be disappointed if they look for specific instructions on L2 teaching in the available literature, despite of the rapidly increasing number of empirical classroom studies. Craig Chaudron's extensive review of the field in his 1988 book (cf. also his contribution to this volume) explains why this is so. The large- scale studies into the effectiveness of teaching methods conducted in the 60s and 70s remained inconclusive because of the numerous variables they failed to control. Recent classroom studies wisely examine more closely defined issues, e.g. features of teacher talk, feedback and repair, turn-taking procedures, different task types and forms of social organisation, etc. These largely descriptive studies provide valuable information about learner
and teacher behaviour; however, their findings are often difficult to compare as the events under study tend to be categorised according to different coding conventions. While this problem could be solved through better coordination of data analysis across studies, a more serious obstacle is the theoretical issue of determining learner and teacher behaviours in their effect on learning outcomes. Establishing causal links between observable activity in the classroom, learners' cognitive processes of information intake and storage, and measurable learning effects is a major research task for investigations into classroom learning. In effect, it represents the 'classroom variety' of studies into informal second language acquisition deriving from Krashen's Input Hypothesis. As Long pointed out, a research programme under this hypothesis would have to proceed in two phases: first, the type of interaction/input resulting in optimal comprehension would have to be established; secondly, the effects of comprehensibility on L2 acquisition would have to be demonstrated. While the first phase has resulted in research findings from informal and formal studies, indicating that certain kinds of input and interactional modifications promote comprehension, the second phase has yet been very little explored. Importantly, the few available studies (see Chaudron 1988 and Long's contribution to Beebe, Second Language Acquisition: Multiple Perspectives, Newbury House 1988) suggest an advantage for input processing with a focus on formal aspects of L2. Together with a few recent experimental studies, this evidence contradicts the view that message-oriented processing of L2 information secures interlanguage development via incidental learning. For adult L2 learners, at least, focus on form seems to be crucial in order to acquire certain morphosyntactic target language features. Yet little is known about how best to structure such form-oriented activity in L2 classrooms – and in fact, Ellis' paper in this volume concludes that formal practice does not seem to have the beneficial effects on L2 learning methodologists have assumed it to have. Exploring the learning outcomes of differentially implemented pedagogic grammar in classroom interaction will have to be one of the major lines of investigation in future classroom research.

The Input Hypothesis is but one example to illustrate the theory dependence of research issues and questions in classroom research. Some of the range of theories that are brought to bear on classroom research is documented in the present volume, which is intentionally eclectic.

In the initial paper, Craig Chaudron argues for the relevance of classroom research for second language educators. Following an overview on major research methods, he discusses some central findings from studies examining the effect of the instructional context on L2 learning, and the relationship between classroom processes and learners' comprehension and production of the target language. His paper briefly addresses some important issues to be discussed in detail by other authors in this volume: the limited effect of practice on L2 acquisition, argued by Ellis; the 'teachability' constraints imposed on pedagogic action by learner-internal processing operations, documented by Pienemann; the differential effect of teacher's questions on learners' production, demonstrated in Håkansson's and Lindberg's paper.
Rod Ellis takes a critical look at one of the axioms of much language teaching, ‘practice makes perfect’. Distinguishing between controlled (formal) and free (functional) practice, he presents some opposing views held by language teaching experts on the function of controlled practice. He then examines these positions in the light of empirical evidence. While the relevant quantitative studies yield conflicting results, evidence from qualitative investigations suggests that the role of controlled practice may be quite different from what it is commonly held to be. In particular, the ‘practice causes acquisition’ model appears to be untenable. Furthermore, L2 features display differential susceptibility to formal practice, as is argued in detail in Pienemann's contribution.

The main contention of Manfred Pienemann's paper is the Teachability Hypothesis, according to which the course of L2 development cannot be influenced by learner-external factors. Based on previous research into informal L2 acquisition, he establishes a predictive framework for classroom learning, specifying developmental stages in the acquisition of German word order and verbal morphology. While the developmental orders are determined by psycholinguistic processing constraints impervious to external manipulation such as teaching efforts, variable features do not fall into the scope of such constraints and are thus amenable to pedagogical action. The line of investigation proposed and substantiated by Pienemann's extensive research is important to extend to other languages and subsystems of communicative competence, in order to identify the areas of linguistic/communicative knowledge that are governed by learner-internal constraints, and those that can be controlled by external factors such as type of input, organisation of the learning environment, etc.

Gisela Håkansson and Inger Lindberg examine the structure of teacher's questions in classes in Swedish as a second language. Based on criteria such as form/function, the cognitive demands posed on the elicited responses, the function of questions as display or referential questions and their medium or message orientedness, the authors establish a multidimensional model of teacher's questions. In the teacher-fronted lessons they analysed, the questions were mostly located in the first (initiating) move of the 3-step pedagogical exchange. Due to the ‘conditional relevance’ questions exert not only on the content but also on the form of answers, teachers' questions have to be taken into consideration in analyses of learners' productions in teacher-fronted L2 classrooms. It comes as no surprise that most of the questioning action in the observed lessons was performed by the teachers; only few questions asked by learners were observable in these teacher-controlled instructional contexts.

Horst Raabe is interested in the counterpart to teachers' questions, i.e. in learners' interrogative reactions to some aspect of target language input. Learners' questions constitute a data source that, unfortunately, has been neglected in SLA research. As the questions reflect learners' metalinguistic conceptualization of L2 rules, they provide important information about ways in which learners' process input, about the knowledge sources they activate and the hypotheses they establish in L2
learning. Through observing learners’ unelicited questioning activity, areas of L2 grammar suitable for questioning – in the series of Raabe’s studies: French as a foreign language for native speakers of German – can be identified. In a second step, texts will have to be produced that are optimally conducive to elicit interrogative reactions about the language topic under study. To distinguish different types of questions according to their learning potential, Raabe establishes an interpretive framework of question patterns with increasing cognitive complexity.

Johannes Wagner explores the observational fact that foreign language instruction often exhibits considerable resistance to innovation in teaching methodology. He argues that both sociological and psychological explanations have to be invoked to account for such inertia. The sociological argument rests on the identity of foreign language teaching as institution, striving for self-perpetuation of its functions and constraints. In order for new instructional elements to be accepted, they have to fulfill multifunctional purposes, achieving alleged learning effects as well as goals relating to social control. According to the psychological line of reasoning, teachers’ decision conflicts between what they perceive as ‘contradictory imperatives’ – for instance innovative learning activities versus traditional exam requirements – result in mental ‘knots’, which effectively prevent teachers from opting for untraditional instructional alternatives. Thus well established teaching traditions survive by default, no matter how much they are frowned upon by language teaching methodologists or discredited by second language acquisition research. It is therefore an important objective of teacher education to identify conflicting imperatives and convert them to rational alternatives of pedagogic action.

The contributions to this volume thus provide important input to pedagogical decisions in L2 teaching, yet it is not, and cannot be, their purpose to provide specific instructions how to teach. Rather they demonstrate the variety of theoretical orientations that come to bear on the description and explanation of class-room processes and their outcomes, ranging from psycholinguistic models of cognitive constraints on L2 processing to sociological theories of action in institutions. Demonstrating how the learner-internal and external processes interact in class-room settings is not only way beyond the scope of this volume but an unfeasible goal at the present state of the art. Achieving this goal in the future requires two types of investigation.

(1) More carefully controlled studies (reader: this is an intended ambiguity) are needed to determine the impact of a given learner or teacher behaviour on different subsystems of learners’ interlanguage. In particular, effects of different class-room activities on the development of ‘functional’ components of communicative competence – pragmatic, discursal and strategic knowledge – will have to be conducted. Such ‘functionally’ oriented studies will serve to bridge the gap that currently exists between communicative teaching methodology and the focus on formal features of L2 learning prevalent in classroom research and second language acquisition studies generally.
More holistically oriented investigations are necessary, analysing instructional and learning activities in their social context and bringing to bear on such analyses the participants' perceptions of classroom processes. Emphasizing the need of 'ethnographic' research, most recently illustrated in van Lier's 1988 book (The Classroom and the Language Learner, Longman) appears to be particularly appropriate in the context of AIL. L2 classroom researchers and teaching methodologists have to be careful not to export their — to date as a rule: Western — theories, methods and findings as universally valid norms for research and teaching. As classroom learning occurs in normative institutions, i.e. socially constituted and legally sanctioned settings governed by their wider economic, social and cultural context, existing L2 classrooms will vary crossculturally, reflecting differences between societies at large. If change of classroom procedures seems desirable in teaching contexts that are unexplored so far, it has to be ensured that the suggested innovations do not result in unpredicted conflicts with the given institutional constraints and the subjective learning and teaching theories of the participants. The only way to gather the requisite information is by empirical classroom re-search; appropriate research designs would have to be exploratory, open-ended and emic in orientation.

This being said, a weakness of the present volume becomes apparent: authors and editor are from Australia, North America and (Northern and Western) Europe, and so are the majority of L2 classrooms reported on in their papers. The inevitable ethnocentrism of this collection is a deplorable yet, I think, adequate reflection of the current state of classroom research. I hope it will inspire our colleagues throughout the world to carry out their own studies according to their research conditions and teaching needs. Authors and editor of this issue will be happy to cooperate, and encourage the national AIL affiliates to promote international cooperation in L2 this important fields of applied linguistics.

The Long House
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1. Introduction

Research on language classroom teaching and learning has increased greatly in the last two decades. Unlike general research on second language (L2) acquisition, which is based on tests and other elicitations of interlanguage performance, classroom research is based on observation and analysis of classroom activities, teachers' and learners' speech and behaviors, and the form and function of social and pedagogical interaction in L2 classrooms. Many topics have been researched: modifications in teacher talk, learner production, group work, question types, teacher feedback, and different presentations of grammar points; each of these has implications for teaching practices, classroom organization, and curriculum design. It behooves language professionals to understand classroom research, in order better to evaluate the best methods of teaching. Given the competition among proponents of different language teaching methods or approaches, different instructional materials, and different programmatic organization, it is surprising that so few studies exist evaluating or validating the classroom learning that results from such methods, materials, and programs. In order to direct professionals to more empirically based decisions about L2 teaching, this article reviews some of the principal methods used to study second language classrooms, and offers a selective summary of some of the recent findings from classroom research that are important for teaching.

2. Classroom research methods

From the 1950's through the 1970's, most evaluation of language teaching compared test scores for students following programs adopting different methodological orientations. Such "methods comparison" studies are considered context (program)-product (learning outcomes) research. However, language researchers grew dissatis-
fied with methods comparison research (see Smith, 1970, and the debate over his study in Foreign Language Annals 3.2, 1969, and Modern Language Journal 53.6, 1969). For instance, this research did not guarantee that the classroom processes which influenced the learning products were consistent with the methodology intended in the program. Therefore, observation of classroom processes became a popular form of research in the 1970's. Many coding category instruments and discourse analytical systems, designed for either real-time observation or for use on transcripts of classroom interaction, were developed to describe and analyze the teaching-learning interaction (see Long, 1980; Chaudron, 1988; for lengthier discussion of such instruments). These instruments allowed analysis of the process-product relationships, and even the effects of certain processes on others in classroom interactions.

The most common type of observational instrument is referred to as "interaction analysis" (see, for example, Moskowitz, 1971; Fanselow, 1977; Allen, Fröhlich, and Spada, 1984; and Fröhlich, Spada, and Allen, 1985). Such instruments consist of a set of categories for teacher or student behavior, such as "asks questions", "structures", "gives a partial response", and "requests information". In addition to these categories characterizing the communicative functions of behaviors, many instruments also include several dimensions, each with a different set of categories. Each dimension analyzes a different aspect of classroom events, such as who participates in the interaction (teacher, students, groups), the content of the communication (pronunciation, real life event), the type of pedagogical activity (drill, seat work, game), or language skill (speaking, reading). A complete picture of classroom behavior necessarily will include several such dimensions; the failing of many instruments has been to ignore the fact that categories may fall on different dimensions and thus not be comparable either quantitatively or qualitatively. This inevitably leads to unreliable and invalid estimations of the frequency and types of behaviors occurring, a point to be illustrated briefly below.

A different approach to the description of classroom events is generally known as "discourse analysis" (see e.g. Sinclair and Coulthard, 1975, and Brown and Yule, 1983). In discourse analysis the function of each speech act is evaluated with respect to the context in which it occurs. Although many researchers employ discourse analytical procedures to analyze a particular sort of classroom behavior (e.g. feedback – Chaudron, 1977; turn-taking and repair – van Lier, 1982; questions – Long, 1981), a complete discourse analysis should describe the general structure of interaction and all possible types of act. In such a system, best exemplified by Sinclair and Coulthard's study, different types of events are expected to occur in a certain order, often in a hierarchical relationship to other events.

An example of interaction analysis compared with discourse analysis helps larify the differences between them. The following teacher (T)-student (S) interaction occurred in a beginning ESL class. In the right-hand columns, each segment is coded approximately the way it would be according to an interaction analysis.
system like Moskowitz’s (1971), then one like Fanselow’s (1977), and according to the
discourse analysis system of Sinclair and Coulthard (1975).

<table>
<thead>
<tr>
<th></th>
<th>Moskowitz</th>
<th>Fanselow &amp; Coulthard</th>
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<tbody>
<tr>
<td></td>
<td>(categories)</td>
<td>(moves)</td>
</tr>
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</table>

T: The plural for number five, Lisa.
S: What is this-
T: Plural!
S: What are these.
   These are books.
T: Very good!
   Very good!
   All right,
   if I said uh, this is a man.
   What would be the plural?

Asks question  Solicit  Elicitation
S response, specific  Respond  Reply
[no clear code]  React  Evaluate
S response, specific  Respond  Reply
[no code]  Structure  Starter

Nomination

In this example, discourse analysis is the most detailed description of the language
functions. This advantage is partly because the discourse analysis approach tends to
describe each new shift in function, even within the segments of the discourse, whether
utterances or turns. Also, discourse analysis hierarchically groups the sequences of acts
into "moves" (whereas Fanselow’s categories are already considered moves) – the
teacher’s "marker-starter-elicitation" is an "Opening Move", for example; sequences of
moves are grouped into "exchanges" – the sequence from the first teacher "elicitation"
to the first "evaluate" is a teaching exchange; and sequences of exchanges make up
"transactions", which together make up a "lesson". The other approaches to analysis
cannot account for such hierarchical structure in
classroom interaction.

A third method, the tradition known as "ethnography", has become popular in studies of language classrooms. Ethnography stems from anthropological studies of sociocultural interaction in well-defined communities. In classroom research, it focuses on the processes alone, trying to understand the social assumptions which lead to each individual's interpretation of the classroom events. While observation instruments, and to some extent discourse analysis, lend themselves to quantification of events, ethnographic studies generally do not quantify the results, for most events are considered in terms of the unique meanings they have in specific contexts (see van Lier, 1988 for further elaboration). However, no extensive ethnography has been done of second language classrooms. Instead, researchers adopting an ethnographic orientation have described aspects of classrooms, such as teacher awareness of student performance (Carrasco, 1981), teacher management of turns (Enright, 1984), and different student ethnic styles (e.g. Malcolm’s, 1986 work on Australian aboriginal classrooms).

Three important methodological concerns arise with analyses of classroom processes. Language professionals should be aware of these, for they affect the interpretation of and conduct of research. One issue concerns the unit of analysis. As seen before, different researchers do analysis on smaller or larger segments of the classroom events. Categories are assigned either while observing a class or analyzing a transcript of a tape recording. The unit of analysis may be either a time segment (every 3 seconds), a functional unit such as a "move" (determined by the set of categories used to describe moves), a phonologically based unit such as an utterance, or other linguistic or social segmentation of the events.

Because of these differences in units and categories of analysis across studies, it is difficult to compare across classroom studies and thus to draw absolute conclusions. For example, studies may measure teacher language choice (whether the first, or the target language) in units of time, of teacher utterances, or of functional moves. These differences in measurement all involve different assumptions about the psychological relationships between language choice and student learning. For instance, a measure of language use by fixed time units (every three minutes) may overestimate the actual amount of language spoken, if the teacher speaks more slowly in that language relative to the other, or if more silence occurs in that time period (Strong, 1986). Moreover, quantitative comparison of language choice involving a temporal measure, as opposed to a categorical move measure, assumes a different psychological value for the learner – is the learner’s knowledge derived from 15 minutes of exposure to the target language as meaningful as 15 question-answer exchanges in the L2?

An example of a categorical confusion is the variation in use of the term "inter-action" in L2 classroom research. Some studies of student "interaction" (which also use different units) count any student verbal behavior, whereas others only count
students' self-initiated speech, that is, language use in which the student is personally involved. And still other studies consider "interaction" to mean mainly students' "negotiation of meaning", that is, their efforts to clarify their production and confirm their understanding of classroom speech. Obviously, conclusions drawn from studies of the first sort risk underestimating the qualitative importance of certain sorts of student interaction.

Two other issues concern the reliability and validity of the analysis. Few studies have shown that their categories of analysis (as in interaction analysis or discourse analysis) or their interpretations (as in ethnography) are reliable, that is, that independent observers or analysts arrive consistently at the same codes or interpretations. Still fewer studies have demonstrated a relationship between their analytical categories and other measures of behavior or language learning. This question of validity is critical, for many events (such as student hand-raising, or teacher praise), even entire instruments, may be coded reliably, yet if these do not have any relationship to language use or learning in classrooms, they are of little value for classroom research. What makes matters worse, many studies have simply failed to measure student learning related to their description of process variables (see Chaudron, 1988 for more discussion of these issues.)

3. Findings from classroom research

The following section summarizes some key findings from recent second language classroom research concerning 1) the effects of instructional context (foreign versus second language, program type, classroom organization, and task) on class-room processes, and 2) the relationship between processes and learners' comprehension and production.

Context. A few studies of language classrooms permit a comparison of foreign language instruction with second language instruction, where in the latter case, the target language is spoken widely in the community. Not surprisingly, the evidence points to foreign language instruction having a greater focus on teaching the formal aspects of the target language than on functional language use (see e.g. Mitchell, Parkinson, and Johnstone, 1981; Ishiguro, 1986). Some studies suggest that this is partly due to the greater concern of nonnative teachers for formal accuracy (foreign language teachers are more typically nonnatives). Also, the place of a foreign language in most countries' school programs is usually that of another subject of study, with rules and lists of vocabulary to learn, since proficiency in it is not generally needed to understand other subjects. These limitations of a foreign language context may be superceded, however, by programmatic efforts to focus on functional language use, when a high degree of L2 input and motivation to learn it may be prevalent, as in immersion instruction in Canada or the U. S. (see Swain and Lapkin, 1982; California State Department of Education, 1984; Fröhlich et al., 1985; Genesee, 1987). Such functionally oriented school programs, in which the L2...
is used to teach other subjects, are difficult to maintain, and it has become apparent that a focus on formal language performance insinuates itself in such pro-grams as well, perhaps with good reason. A number of studies demonstrate, nonetheless, that functional programs encourage teachers and students to use the L2 more naturally for communication about school procedures, social events, and personal interaction (see Chaudron, 1988 for details), thus presumably providing the learner with a greater repertoire of abilities in the target language.

Classroom organization also has an important effect on the types and functions of language used for learning. The gradual shift toward more group work in communicative language teaching has led to investigations of group work in classrooms, peer tutoring, and learner interaction on simulated learning tasks. The primary assumptions have been that "teacher-Fronted" classrooms do not encourage much student practice with the target language, and that group work and peer tutoring give individual students greater opportunities to use the L2, and more diverse sorts of language functions can be practiced. Several studies have documented these assumptions (Johnson, 1983; Porter, 1986; Pica and Doughty, 1985). Moreover, contrary to the belief of many teachers and administrators, group work does not lead to less accurate student speech, compared to the teacher-oriented classroom (Pica and Doughty, 1985; Rulon and McCreary, 1986). Also, the specific communicative tasks used in group work lead to greater amounts of interaction between students, with distinct effects on the length of student turns taken, and the complexity of student speech.

For example, problem-solving tasks, where each student has independent sources of information, lead to more turns and negotiation, while debates on specific topics lead to longer and more complex student turns (Duff, 1986). If we take as valid the argument of Long (1983a, b), that greater negotiation of meaning is a critical factor in providing learners with appropriate input for L2 learning, these classroom results are of great importance, for they provide a basis for evaluating which tasks to set for learners. What is lacking from most instructional situations, however, is more specific information about the interactional requirements of the tasks set by the materials or activities. Proponents of communicative language teaching and task-based language learning should provide more specific evidence of the amount of interaction and student productivity that different tasks and materials promote. Too little research exists to demonstrate the variability in tasks, much less the specific learning outcomes and interlanguage development that result from them (see Crookes, 1986 for discussion).

**Effects on Learning.** Classroom research has demonstrated that teachers modify their use of the L2 in speech to lower level learners, by speaking more slowly, using more exaggerated pronunciation, less syntactically complex sentences, simpler vocabulary, and more self-repetitions (see e.g. Gaies, 1977; Henzi, 1979, various articles in Gass and Madden, 1985, and review in Chaudron, 1988). Experimental research suggests that these modifications aid learners’ comprehension of the
instruction, although comparison of studies suggests that lower complexity may not have as great an effect on comprehension as redundancy in teacher speech (slower speech, repetition and rephrasing, Parker and Chaudron, 1987). Linking this possibility to the issue of negotiation discussed above is a finding from an experiment by Pica, Doughty and Young (1986). They showed that redundancy in explanations appeared to increase when interaction (in the form of negotiation of meaning) is a component of the learning task.

Surprisingly, research has not shown that greater quantity of student practice alone leads to successful L2 production, since most studies have only shown a correlation between these two variables (e.g. Naiman, Fröhlich, Stern, and Todesco, 1978); the relationship may be in the opposite direction, with better students being those who use the language more correctly in classroom practice (as suggested in a study by Ramirez and Stromquist, 1979). So it may be the quality of student production and interaction that is critical, rather than the amount. Research shows, for instance, that students will produce more language and more complex structures when the teacher elicits more meaningful language by means of "referential questions" – ones to which the teacher does not know the answer, instead of "display" questions – with known answers (Brock, 1985). Swain’s research (1985) has argued for a "comprehensible output hypothesis," which suggests that, before their practice will have an effect, students’ practising must include the use of language in meaningful situations which promote the application of new structures.

Presumably, the context of the sort of production Swain advocates is one in which feedback about the accuracy of L2 speech or writing is available. Teachers concerned about teaching formal accuracy should therefore not be discouraged by these recent findings. A number of studies lead to the conclusion that instruction focusing on formal aspects of the target language, and providing feedback on formal accuracy, can lead to greater student achievement on measures of L2 proficiency (e.g. Mitchell et al., 1981; Zhang, 1985; see review in Chaudron, 1988).

Yet teachers need to become more aware of the limitations of their methodology for teaching formal aspects of language. Several studies have indicated that teachers’ explanations and corrective feedback can be highly ambiguous and unhelpful (Chaudron, 1983; 1987). Furthermore, recent studies in the development of linguistic rules following instruction (Pienemann, 1985; Long, 1988) suggest that, for certain rule systems (e.g., negation) L2 instruction cannot circumvent learners’ development in a "natural" sequence of rules. These findings argue for using a more empirical analysis of the acquisition of second language rules as the basis for language teaching syllabuses and programs.
4. Conclusion

This has been a cursory review, intending to suggest the areas in which classroom research has been productive, and some areas in which more research would be helpful. We have lacked the space to indicate more fully the extent to which classroom research has been and should be motivated by theories of second language acquisition, learning, and instruction. Both the methods and objectives of classroom research should follow from well-founded research reviews, as well as theoretically justifiable hypotheses as to the critical factors and relationships that hold between classroom processes and learning products.

References


Pica, Teresa, Doughty, Catherine, and Young, Richard (1986), Making input


THE ROLE OF PRACTICE IN CLASSROOM LEARNING

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1. Introduction

One of the advantages of the growth of empirical studies of classroom language learning is that cherished assumptions about language teaching can be subjected to scrutiny. Elsewhere (Ellis, forthcoming), I have argued that this is the appropriate way to set about making use of the findings of second language acquisition (SLA) research. That is, what is needed is not research applied but applied research. The starting point in such an approach should not be the research itself but a pedagogical issue of importance. The research provides a means for examining whether the assumptions that lie implicit in pedagogic prescriptions are justified.

This is the approach that will be followed here. The pedagogical issue which is the focus of attention is ‘practice’. This construct is an extremely slippery one, however, meaning many things to many people. We shall begin, therefore, by defining what we mean by ‘practice’. Following this, various pedagogic claims for practice will be examined and a number of quantitative studies which have investigated the effect of practice on language learning will be considered. The results provided by these studies are inconsistent and conflicting. We will argue that a more qualitative approach – one that examines how ‘practice’ works out in actual classroom interaction – is needed to illuminate the nature of the relationship between practice and learning. Finally, a number of hypotheses, compatible with the available research, will be advanced regarding the role that practice plays in classroom language learning.

2. What do we mean by practice?

Most methodologists distinguish two general stages in the teaching of linguistic knowledge; presentation and practice. These stages correspond to Rivers and Temperley’s (1978) distinction between ‘skill/knowledge getting’ and ‘skill/knowledge using’.
In order to make sense of the term ‘practice’, therefore, we need to see it as in opposition to ‘presentation’. The purpose of the presentation stage is to help the learner acquire new linguistic knowledge or to restructure knowledge that has been wrongly represented. The teacher’s job in this stage of the lesson is described by Byrne (1986) in this way:

At the presentation stage, your main task is to serve as a kind of informant. You know the language; you select the new material to be learned ... and you present this in such a way that the meaning of the new language is as clear and memorable as possible (2).

In the presentation stage it is the teacher who does the talking – provides input – while the learner listens and understands. Any production on the part of the learner is incidental, designed simply to introduce the new language into the memory store.

The ‘practice' stage follows the ‘presentation' stage. One of the assumptions of ‘practice', therefore, is that the learner already knows the forms that are the target of the practice but needs to gain control over them. The purpose of practice is to activate the new knowledge to the point where it can be used automatically and correctly in normal communication. For this reason the learner is required to engage in extensive production of utterances containing the new structure. In contrast to the presentation stage, emphasis is placed on learner participation, and the teacher needs a new role in order to accommodate this:

You do the minimum amount of talking yourself. You are a skillful conductor of an orchestra, giving each performer a chance to participate and monitoring the performance to see it is satisfactory (Byrne 1986).

Thus, practice is something that learners have to do in order to make the transition from knowing a feature to using it in real-life communication. A clear analogy exists with learning to play the piano; before the learner attempts to play a whole piece, she practises scales and short phrases.

Helping learners to achieve control over their knowledge requires different kinds of practice. A common distinction found in most training manuals is that between controlled and free practice. Controlled practice takes the form of various drills which require the mechanical production of specific linguistic forms. Free practice involves engaging in simulated communication which has been set up to provide opportunities for the use of those forms that have been presented and practised in a controlled manner. Controlled and free practice are best viewed as the poles of a continuum. The continuum reflects the degree of focus required by the learner. In controlled practice the learner is required to focus more or less exclusively on the correct production of the target features. In free practice the learner is concerned with meaning rather than with form. In between the two poles are other kinds of
practice (e.g. guided and meaningful or contextualised practice).

It is possible to produce a fairly tight definition of controlled practice, as follows:

Controlled practice

(1) takes place when the learner has already internalised the specific feature which is the learning target.
(2) involves production on the part of the learner.
(3) involves the isolation of a specific linguistic feature.
(4) requires the learner to focus attention on this linguistic feature.
(5) requires the learner to carry out a mechanical operation that leads to correct production of the target feature.
(6) involves the provision of teacher feedback regarding the accuracy of the learner's production of the target feature.
(7) provides the learner with the opportunity to repeat incorrect productions correctly.

Although the list is an obvious one, it is important to be explicit, as only in this way is it possible to carry out a rigorous empirical investigation. Each defining characteristic of controlled practice represents, in fact, a largely untested assumption about the nature of language learning.

Free practice is not so easy to define. The problem lies in establishing clear criteria for distinguishing ‘free practice’ from ‘communicative use’. One possible criterion is the purpose of the performance. It can be argued that when the learner is concerned with learning the L2, she engages in free practice, but when the learner is concerned with conveying a real message, she engages in ‘communicative use’. A similar distinction might be made in the case of the pianist who plays a concerto in his studio as a preliminary to a full public performance. The distinction is not an easy one where the classroom language learner is concerned, however. For one thing, the learner may be engaged in both learning and communicating at the same time. That is, she may be entirely focused on meaning content but be fully aware that the real reason why she is taking part in the activity is to learn the language.

The whole idea of practice is, in fact, predicated upon a particular view of what language teaching consists of.

Traditional methodology (the methodology we have been discussing to date) envisages a three part process (cf. Brumfit, 1979):
A communicative model of teaching presupposes a different process; ‘communicative use’ provides the basis for any focused language work:

1
Present ——> 2
Controlled ———> Free practice
3

It is not clear whether any descriptive differences between learner output in free practice and communicative use will occur. If, in both cases, the performance is concerned with the exchange of meaningful messages, one might expect the same type of discourse to arise. Differences may arise if the learner spontaneously introduces the new features during free practice (i.e. without recourse to any conscious manipulation or editing of output). This, of course, is exactly what is intended by those who advocate the traditional methodology, but the everyday experience of teachers is that new material is frequently not reflected in free practice:

... students often seem to master a structure in drilling, but are then incapable of using it in other contexts (Haycraft, 1978: 36).

Studies of the effects of formal instruction on SLA support Haycraft’s view (e.g. Felix, 1981; Ellis, 1984; Pienemann, 1984). There are definite constraints on what is ‘learnable’ and, therefore, on what can be freely used.

It may be that we would do better not to try to draw any distinction between ‘free practice’ and ‘communicative use’, but to classify both as ‘unfocused performance’.

It would follow that the only real distinction is between focused and unfocused performance, as I have proposed elsewhere (Ellis, forthcoming). Focused performance would include any kind of practice where the learner is consciously attending to the accurate production of specific target forms – irrespective of whether the language exercise is mechanical or meaningful (i.e. contextualised). Unfocused performance would occur when the learner is oriented towards meaning exchange. Practice, according to this view, would correspond to focused performance and would be largely analogous with controlled practice, as described above.

All this may seem nothing more than semantic nit-picking, but it is in fact cruci-
ally important to come to a clear understanding of what is meant by ‘practice’. The term is banded about in a loose, ill-defined way with the result that precise research becomes very difficult and pedagogic prescriptions opaque.

3. The pedagogic claims for ‘practice’

In considering the pedagogic claims we will restrict the discussion to ‘controlled practice’. The term practice from now on will be used to refer exclusively to controlled practice.

In traditional methodology – as outlined in the previous section – practice has a clear purpose. Practice helps to make perfect by helping the learner to gain control over new knowledge. This claim is closely associated with the precepts of behaviourist learning theory. Providing that the stimulus is carefully identified with a particular response and care is taken to ensure that the learner produces correct responses, ‘habit strength’ is built up. It is interesting to note that even in an age when behaviourist theory is largely discredited, the view that language consists of a set of habits which can be developed through concentrated practice does not die, as this quotation from Gowers and Walters (1983) indicates:

Repetition practice helps to develop habits. However, in real life we are mostly able to choose which language to use and as we are largely non-mechanical beings this makes for a profoundly complex activity. Habit formation is a small, if essential, part of learning to communicate (83).

For Gowers and Walters the ‘small part’ which habit formation comprises justifies some fifteen pages describing the teaching strategies needed for controlled practice. A quick survey of the current batch of training manuals (e.g. Hubbard et al., 1983; Harmer, 1984) reveals a similar firm commitment to controlled practice.

It is not necessary to invoke behaviourism in support of practice, however. Cognitive learning theory can also provide a rationale. Seliger (1977) suggests that the cognitive effects of practice counter what Ausubel (1971) refers to as ‘obliterative subsumption’, by which process new material is subsumed within existing networks so that its distinguished features are lost. Seliger gives the example of the learner who overgeneralizes the inverted word order of nonembedded questions in embedded questions:

* I don’t know how is he going to do it.

Practice serves to draw the learner’s attention to the salient features of a new structure so that the essential attributes are not obliterated through overgeneralization or transfer. According to this view, therefore, practice has much the same function as ‘presentation’ – to develop awareness of linguistic form and in this way
to overcome the effects of other, powerful cognitive processes. This is rather different from the kind of claim advanced by many methodologists, namely that practice aids control. Presumably a cognitive view places less emphasis on the need for sheer quantity of practice.

Most advocates of a communicative methodology are not prepared to abandon practice. Littlewood (1981) justifies the inclusion of structural practice as ‘a point of departure’ for more communicative (i.e. meaning-focused) activities. He justifies his position like this:

... we are still too ignorant about the basic processes of language learning to be able to state dogmatically what can and cannot contribute to them. Structural practice may still be a useful tool, especially when the teacher wishes to focus attention sharply and unambiguously on an important feature of the structural system (9f.).

Littlewood’s communicative approach does not really differ from the traditional approach in the sequence of teaching operations it proposes. The difference is only one of emphasis – free practice or communicative use (we have claimed they are synonymous) is allocated more time with a corresponding reduction for controlled practice. Other proponents of a communicative methodology are more radical, advocating a re-ordering of the customary three steps of the teaching process, so that instruction commences with communicative use (cf. Brumfit’s model, outlined above). Even here, however, a place is still provided for the controlled practice of those features of which the learner displays a lack in mastery.

There are, however, a number of ‘natural’ methods which reject any role whatsoever for practice. Prabhu (1987) proposes that grammatical competence can best be acquired if the learners are engaged throughout in meaning-focused activity. Prabhu set up the Communicational Teaching Project in South India to explore to what extent ‘task based teaching’ was feasible and whether it promoted the successful acquisition of grammar. Prabhu writes about the project:

Attempts to systematize input to the learner through a linguistically organised syllabus, or to maximize the practice of particular parts of language-structure through activities deliberately planned for that purpose were regarded as being unhelpful to the development of grammatical competence and detrimental to the desired preoccupation with meaning in the classroom (1987:1f).

Thus Prabhu rejected controlled practice because he believed it obstructed the learner’s engagement with meaning and so impeded learning. Instead, Prabhu and his aides developed a series of reasoning-gap activities designed to stimulate meaning-focused interaction in the classroom.

To sum up, three different pedagogic positions regarding the role of practice are
evident in the current literature:

1. Practice is necessary to ensure that learners develop correct language habits or to enable them to overcome 'obliterative subsumption'.
2. Practice is not necessary for language learning but is desirable either as a precursor to communicative language use or as a means of dealing with problems that arise in communicative language use.
3. Practice is neither necessary nor desirable for language learning and, in fact, can have a detrimental effect.

We can now turn to the available empirical research to see which of these positions it lends most support to.

4. Empirical studies

We will begin by examining a number of quantitative studies. These provide conflicting results regarding the effectiveness of practice. We consider why this is and then go on to consider qualitative approaches.

4.1. Quantitative studies

Quantitative approaches entail the collection of data relating to the practice opportunities afforded to different learners (the independent variable) and data relating to the learning outcomes of the same learners (the dependent variable). Scores on the independent variable are then correlated with scores on the dependent variable in order to establish whether there is any significant relationship between the two.

A number of such studies are summarised in Table 1. The results are extremely varied. Some studies (e.g. Seliger, 1977; Naiman et al., 1978; Ellis and Rathbone, 1987) report positive relationships between the amount of practice and learning. One study (Ellis, 1984a) reports a negative relationship; that is, those learners who received the most opportunities for practice displayed the smallest gains in acquisition. Other studies report either no relationship between practice and learning (Day, 1984) or only a very weak relationship (Ely, 1986).

What explanation can be given for these mixed results? One of the problems is that different researchers work with different definitions of 'practice'. For Seliger (1977), for instance, practice consists of any speech act produced by a learner in the classroom. For Ellis (1984a) 'practice' consists of nominated opportunities for learners to produce utterances containing the target feature when presented with
picture cues. Other researchers operationalize the construct in different ways. It is not always clear whether ‘practice’ – in the sense we have defined it above – is the target of study or whether it is participation in general. In the case of the latter, unfocused as well as focused production is included.

Another problem lies in the way that the dependent variable – learning – is measured. Three of the studies (Naiman et al., 1977; Day, 1984; Ely, 1986) employed general measures of proficiency while the other three (Seliger, 1977; Ellis, 1984a; Ellis and Rathbone, 1987) obtained measures of the learners’ knowledge of specific grammatical features. One possible explanation for the difference in the results obtained in the Seliger and Day studies (which followed similar designs) is the different way that learning was measured. It is also worth noting that in only two studies (Ellis, 1984a; Ellis and Rathbone, 1987) was any attempt made to relate practice in the production of a specific grammatical structure to the acquisition of that structure.

The main problem, however, lies in the difficulty of interpreting correlational statistics. A coefficient of correlation tells us only whether there is a significant relationship between two variables; it does not tell us about the direction of the relationship. All the studies in Table 1 were designed on the assumption that practice influences acquisition, either negatively or positively. Such an assumption may not be justified, however. It would be possible to argue that it is how much a learner knows that affects the amount of practice she receives. For example, weak learners might find themselves nominated to practice more frequently than strong learners. It would also be possible to argue that the relationship between practice and learning is interactional in nature; that is, the amount of learning influences the amount of practice which in turn affects the amount of learning. The diversity of results obtained suggests that a theoretical model in which practice is treated as a determinant of learning is far too simplistic. The whole relationship is much more complex, subject to the myriad variables that govern classroom behaviour.

The results of the Ellis and Rathbone (1987) study, in particular, give reason for querying whether the ‘practice-causes-learning’ model is tenable. They found that the amount of practice in V-END was not significantly related to the acquisition of V-END but was significantly (and positively) related to scores on a discrete-item test of grammatical proficiency. This test did not, in fact, include any items for V-END. In other words, practice in feature x was related more strongly to knowledge of features a, b ... n than to knowledge of feature x itself. Clearly a ‘practice-causes-learning’ explanation does not work here. However, a ‘learning-causes-practice’ explanation is possible. The learners’ general knowledge of L2 German in some way governed the quantity of practice they took part in.
<table>
<thead>
<tr>
<th>Study</th>
<th>Subjects</th>
<th>Practice</th>
<th>Measures of learning</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seliger</td>
<td>6 adults learning English</td>
<td>Amount of verbal interaction in the classroom; any student speech acted as an interaction; initiations and responses scored separately</td>
<td>Cloze test; structure test; aural comprehension test</td>
<td>Total interaction scores correlated significantly with both structure and aural comprehension scores; percentage of initiations correlated significantly with aural comprehension. Positive significant correlations between hand-raising, complete responses, correct responses and students responding above 10 times and both measures of learning found; negative significant relationships existed between incorrect/partially correct responses and both learning measures.</td>
</tr>
<tr>
<td>(1977)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naiman et al.</td>
<td>Learners of L2 French in Grades 8, 10 and 12 of anglophone schools in Canada</td>
<td>Various measures of classroom behaviour (e.g. student hand-raising; student complete/partial responses; student correct/incorrect response)</td>
<td>Comprehension test; imitation test</td>
<td></td>
</tr>
<tr>
<td>(1978)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>26 adult learners of L2 English in Hawaii; divided into high and low input generators</td>
<td>Responses to teacher general solicits; self-initiated turns</td>
<td>Oral proficiency (inter- viewer assessments of learners’ grammatical, pragmatic and sociolinguistic competence); cloze test</td>
<td>No significant correlations between classroom participation and oral proficiency or cloze test scores .</td>
</tr>
<tr>
<td>(1984)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Contextualised Opportunities</td>
<td>Measurement</td>
<td>Findings</td>
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<tr>
<td>-------</td>
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</tr>
<tr>
<td>Ellis (1984a)</td>
<td>13 children learning English as a L2 in Britain</td>
<td>Contextualised Opportunities to produce WH Qs; number of practice exchange per learner</td>
<td>Gains in the accuracy of production of WHEN Qs in an elicitation game played before and after instruction</td>
<td>Children who had fewest opportunities for practice showed greatest gains.</td>
</tr>
<tr>
<td>Ely (1986)</td>
<td>72 first year adult learners of L2 Spanish at university in USA; half in first and half in second quarter</td>
<td>Number of self-initiated utterances in Spanish, i.e. volunteering a question or a response</td>
<td>Oral fluency in a story reproduction task (= absence of self-interrupted elements); oral correctness (based on error counts in stories); written correctness (based on final written examination)</td>
<td>No other significant correlations reported.</td>
</tr>
<tr>
<td>Ellis And Rath-Bone (1987)</td>
<td>39 adult learners of L2 German; beginners</td>
<td>Number of occasions each learner attempted to produce a sentence with V-END in controlled practice; number of correct V-END sentences</td>
<td>Accuracy of V-END production in an oral narrative; discrete item test of general grammatical proficiency</td>
<td>Number of correct V-END sentences (but not total V-END practice) correlated significantly with V-END production. Both correct and total practice of V-END correlated with general grammar proficiency. Relationship with general proficiency stronger than with V-END acquisition.</td>
</tr>
</tbody>
</table>

Table 1: Survey of quantitative studies of the role of practice in language learning
The quantitative research into the role of practice which has been undertaken to date provides a salutary warning of the dangers of nomothetic enquiry in such a complex area as classroom language learning. Such research risks making assumptions about the nature of the relationship between instruction and learning which may not be warranted. In formulating researchable hypotheses, simplistic cause-effect models of teaching may be invoked – perhaps because such models are implicit in many pedagogic prescriptions – with consequent confusion in the results obtained. A wiser approach is to conduct careful qualitative studies first.

4.2. Qualitative studies

Qualitative studies involve the careful analysis of interactional protocols. That is, the researcher examines what is actually said and done in the name of practice. Alternatively, qualitative studies may ask learners to introspect or retrospect on learning processes. Both kinds of research provide insights into a number of key aspects of practice:

(1) The nature of the learner's contribution to practice sessions.

(2) The nature of the teacher's contribution to practice sessions.

(3) Factors determining the distribution of opportunities for practice.

We will briefly consider each of these.

Controlled practice results in three-phase interactional exchanges, in which the teacher initiates, the learner responds and the teacher supplies feedback. Three-phase exchanges are not restricted to controlled practice however; they predominate in any teacher-dominated interaction where the pedagogic goal is to elicit a pre-determined response from the learner (Sinclair and Coulthard, 1975; Pica, 1987). What differentiates IRF exchanges in controlled practice from similar exchanges in more meaning-focused instruction is their interactional goal. In practice sessions the goal is to perform a specific linguistic feature correctly. This affects both the learner's and the teacher's contributions.

Studies of classroom interaction in which a learner is attempting to perform a new target structure reveal the difficulties which are often experienced. Ellis (1984b) provides the following protocol in which a 13 year old Punjabi girl is struggling to perform a drill practising markers of plurality:

1. T: Now, what is this?
   S: This is a pen.

2. (holds up pen)

3. T: What are these?
   S: This are a pen.

4. (holds up two pens)
5. T: These are__________?
7. T: What is this?
8. (holds up a ruler) S: This is a ruler.
9. T: What are these?
10. (holds up two rulers) S: This is ... are ... This are a rulers.
11. T: These are rulers. What are these?
12. S: This are rulers.
13. T: Not 'a'. These are_______?
15. T: Rulers.

The task requires the learner to encode a number of plural markers; (1) the plural demonstrative article ('these'), (2) the plural copula ('are'), (3) the zero article and (4) the plural noun form ('rulers', 'pencils' etc.). As Ellis observes, this learner fails to perform one or more of these markers in each attempt (see Table 2).

<table>
<thead>
<tr>
<th>Utterance</th>
<th>Missing plurality markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>(1), (3), (4)</td>
</tr>
<tr>
<td>6</td>
<td>(1)</td>
</tr>
<tr>
<td>10</td>
<td>(1), (3)</td>
</tr>
<tr>
<td>12</td>
<td>(1), (3)</td>
</tr>
<tr>
<td>14</td>
<td>(1), (2), (3)</td>
</tr>
<tr>
<td>16</td>
<td>(1), (2), (3)</td>
</tr>
</tbody>
</table>

Table 2: Production of plurality markers by one learner in controlled practice

One explanation of this is that the task of producing plural sentences is beyond this learner's competence. Although the learner probably 'knows' what is required of her, she is unable to comply because she has not reached the appropriate stage of development.

It is not certain what abilities a learner requires to perform a drill such as the one above successfully. Clearly, if the learner already controls the linguistic features which are the focus of the practice, correct production should pose no problem. In such a case, however, the practice is not achieving anything except
allowing the learner to display knowledge that has already been thoroughly acquired. What happens when the learner lacks the requisite control, as with the Punjabi girl? Hosenfeld (1976) set out to answer this question by asking learners to report on the strategies they used when performing drills. She concluded that what was being practised were procedures for getting right answers rather than the grammatical items themselves. Correct responses merely indicate that the learner has accessed the appropriate cognitive strategies for reproducing the target structure; they do not show that learning is taking place. Qualitative studies, therefore, lead one to be sceptical whether any grammar- learning takes place in controlled practice.

Other qualitative studies have looked at the nature and consistency of the teacher's feedback – in particular what the teacher does when the learner's response contains an error. McTear (1975), for instance, found that teachers sometimes give up the task of correction and are often inconsistent, sometimes correcting an error and sometimes not. Allwright (1975) points out that teachers, in fact, may have a duty to be inconsistent as they need to respond to individual differences among the learners. Finally, it has been shown (Long, 1977) that the procedures that a teacher uses to correct an error may not always be explicit, so that learners have to interpret the teacher's treatment of error.

The effectiveness of the treatment will depend on whether the learner is able to make the right interpretation. We can see many of these factors at work in the feedback provided by the Punjabi girl's teacher.

We now turn to consider the factors that influence the distribution of practice opportunities in a classroom. Ellis and Rathbone (1987) address this issue. They note that practice may be volunteered or nominated and that this can influence the learner's production. For example, if responses are nominated in a predictable manner (e.g. alphabetically or line-by-line), learners are able to prepare in advance, whereas volunteered responses are likely to be more spontaneous.

One factor that influences who teachers nominate to respond in practice sessions is the learners' existing levels of competence. The protocol below shows what can happen:


2. S1:  Erm, sie sind im Schirmgeschäft, weil, erm (.2.) sie (. ) möchten eine Schirm kaufen.
3. T: Was meinen die anderen? ist das richtig, was Mary sagt? (3.) Roger, Sie schütteln den Kopf. Verstehen Sie? Sie schütteln den Kopf. Shaking your head. Wie sagen Sie es? Warum sind sie im Schirmgeschäft?


The focus of the practice here is V-END. The teacher begins by nominating S1, who fails to produce a correct sentence. She then turns to S2, who has shown signs (i.e. by shaking his head) that he is both able and prepared to provide a correct answer. This he does. S2 functions as a kind of proxy teacher; he is called on to supply correct answers when other students make mistakes. It is not surprising, perhaps, that it is S2 who receives the most opportunities for practice in his class.

However, teachers probably vary considerably in the implicit principles they follow in deciding who to nominate for practice. Some may try to be egalitarian by ensuring that all students receive equal shares. Others may try to direct practice at those students who are most in need of it. Purely local factors can play a part. Thus, in the case of Ellis and Rathbone’s study, the teachers tended to favour those learners who had elected to continue with German beyond the end of the year at the expense of those students who had decided to give it up. In short, a whole host of factors affect who gets nominated and how often they get nominated.

What factors govern volunteered responses? One factor is the learner’s language ability. Learners who already ‘know’ how to perform a structure are more likely to try their hand. Learners who are uncertain are more likely to hold back. This leads us back to the argument already advanced, namely that it is acquisition that determines practice rather than vice versa. There are other factors, however. The nature of the practice activity can influence whether a learner is allowed to volunteer. In the Ellis and Rathbone study, volunteered responses occurred more frequently in freer practice activities (e.g. when students were allowed to compose their own sentences) than in text book exercises. Even more important is the Personal inclination of the individual learner. Some learners dislike being asked to...
perform in front of their peers and, therefore, rarely volunteer. Other learners are keen to try and feel no anxiety about risking themselves in public. Ely (1986), in the study referred to earlier, provides quantitative evidence of this; he found that risk-taking was a significant positive predictor of classroom participation, accounting for nearly 30% of learner variance. Ellis and Rathbone provide evidence from diary studies kept by some of the learners in their study to illustrate the marked difference in attitude to practice that learners hold. One learner dreads teachers’ questions:

I was really tense in this class when she was asking us questions ...

As usual I was quite frightened when asked questions.

I was quite frightened when asked questions again. I don’t know why; the teacher does not frighten me but my mind is blocked when I’m asked questions. I fear lest I give the wrong answer ...

Another learner, however, has no qualms about making mistakes and welcomes the opportunity to take part in productive practice:

Again today, volunteers were asked to read a passage. I find it irritating that no-one seems to want to volunteer apart from one or two people. I’d rather volunteer and make an idiot of myself ... I think this is important because I want to learn really quickly

Quite apart from their general attitudes towards practice, learners can vary in the extent to which they willingly participate on a day to day basis, as a result of purely personal factors or even the time of the day. A host of potentially interacting factors determine to what extent and when a learner volunteers answers in class.

These qualitative studies lead us to see controlled practice in a very different light from that shed by the quantitative, pseudo-experimental studies. Practice comes to be seen as a social event involving personal investment on the part of the learner. Practice consists of a particular kind of interaction which is negotiated by the participants in accordance with the social and personal factors that prevail in a given teaching context. Once practice is seen in this way, it becomes difficult to seek a direct, causative link between practice and learning. There are simply too many intervening variables. Thus, even practice that meets clear definitional criteria will be implemented variably and have different outcomes.
5. Discussion

So far we have considered the pedagogical arguments for controlled practice and reviewed the empirical research which has examined the role that practice plays in language learning. We observed that mainstream pedagogy – in the form of both traditional and communicative language teaching methodology – fords a definite place for controlled practice. The empirical research, however, suggests that the relationship between controlled practice and learning is far more complex than is presupposed in most methodological prescriptions and that there is no clear evidence that controlled practice does in fact promote SLA. Although it would be difficult to come to any firm conclusion on the basis of the limited research that has been conducted to date, it is clear that controlled practice can mean very different things in different classrooms depending, on the social and personal relationships that prevail between the teacher and the learners. In other words, it is a mistake to treat even controlled practice as a monolithic phenomenon.

In this section we will consider a number of other points that bear on the role of controlled practice, drawing more generally on the results of SLA research.

First, the nature of the linguistic feature which is the instructional target may influence whether the practice works or not. Meisel, Clahsen and Pienemann (1981) distinguish developmental and variational features of SLA. Developmental features are features that are constrained by strategies of language processing. They are acquired sequentially because the development of each feature can only take place when the necessary processing strategies have been activated. Pienemann (1984) has shown that formal instruction is powerless to change the sequence of acquisition of developmental features such as German word order rules. He found that only those learners who were ready to learn INVERSION (i.e. were at the immediately preceding stage), benefitted from instruction; learners who were not ready showed no improvement and some even regressed. Variational features are features that are not constrained by language processing strategies and, theoretically therefore, can be acquired at any time. Johnston (undated) argues that because variational features are ‘computationally simple’ they are teachable. He reports the results of a study designed to teach immigrant German children the copula. This showed that they responded quite positively, with the rate of omission of copula dropping by over 50% in some cases after a week of targeted teaching of various kinds. Practice, therefore, may have differential success depending on the structure that is the focus of the instruction.

The second point concerns how controlled practice is viewed. In the preceding sections we have viewed it as ‘focused instruction’ in accordance with a pedagogical perspective. However, controlled practice can be viewed simply as ‘input’. That is, in the course of engaging in controlled practice the learner is exposed to a variety of L2 features, not just the specific feature which is the instructional target. For example, a lesson planned to practice markers of plurality (as in the
protocol considered earlier), also exposes the learners to input in the use of the copula:

What *is* this?
This *is* a pen. etc.

It is possible that such input – although not the focus of the lesson – will facilitate the acquisition of developmental features the learner is ready for or variational features such as copula. It is also possible that because drills model specific L2 features with high frequency (e.g. Verb -ing) over-learning will take place (cf. Lightbown, 1983). If we view controlled practice as ‘input’ we have to recognize that what is learnt may not be the same as what is taught; the lesson may have been designed to teach feature x, but the learners do not acquire x, although they do acquire y. Researchers and methodologists may not be comfortable with this possibility, as, once again, it is potentially threatening to the value that is traditionally placed on practice. Also, if we view practice as ‘input’, we are forced into asking whether the input provided in this way is of equal quality for the purposes of facilitating SLA as input provided through meaning-focused communication.

The third point concerns the temporal relationship between practice and acquisition. The assumption that underlies pedagogic statements about controlled practice is that the relationship is an immediate one; that is, as a result of engaging in controlled practice, acquisition (at least in the form of a strengthening or automatizing of knowledge) takes place then and there. It is perfectly feasible, however, that practice has a delayed effect. Figure 1 suggests how this might arise.

```
    INPUT
       |  
       |  
PRACTICE ----> EXPLICIT IMPLICIT
                 KNOWLEDGE ----> KNOWLEDGE ---> OUTPUT
```

**Figure 1: The delayed effect of practice**

Controlled practice contributes directly to explicit (i.e. declarative) knowledge, but not to implicit (i.e. procedural) knowledge. Implicit knowledge is dependent on meaning-focused input which the learner processes in accordance with the current state of her interlanguage. Communicative output draws predominantly on implicit knowledge. However, controlled practice contributes indirectly to implicit knowledge in that the existence of explicit knowledge sensitizes the learner to the occurrence of specific features in the input which otherwise would not be attended to. Accor-
to this view of classroom SLA, therefore, controlled practice has a delayed erect. The real value of such practice is in enabling learners to formulate declarative knowledge. If this is so, however, we need to ask whether controlled practice is the best way of raising consciousness about the formal properties of a language. Controlled practice is designed to automatize rather than to sensitize and for this reason is time-consuming. There may be more efficient ways (such as problem-solving tasks) of helping learners develop useful explicit knowledge.

The points discussed in this section are all speculative. They should be considered as hypotheses that are grounded in current SLA research and theory. They all lead in the same direction – namely, to question the conventional pedagogic arguments advanced in support of controlled practice.

6. Summary and conclusion

One of the functions of applied linguistics is to submit pedagogical assumptions to close scrutiny. In this article we have used both the results of empirical SLA research and SLA theoretical perspectives to examine the pedagogic claims that are frequently made for controlled practice.

The following is a summary of the main points that have been raised:

(1) A model of teaching in which practice is seen as determining learning (the 'practice-causes-acquisition' model) is simplistic and not tenable. Controlled practice is a form of classroom interaction and, as such, is a varied phenomenon subject to a host of social and personal factors. It is for this reason – above any other – that quantitative studies of practice have produced conflicting results.

(2) Frequently, it is acquisition that determines practice, rather than vice-versa. That is, how much of the L2 a learner already knows controls how much practice she gets, as qualitative studies of practice have shown. Frequently the way practice is conducted by the teacher reflects her assessment of the proficiency attained by individual learners. In this way, practice may simply serve to reinforce the learners' and the teacher's preconceptions about who is succeeding and who is not succeeding. That is, a kind of self-fulfilling prophecy may be acted out through practice.

(3) Controlled practice is designed to automatize items that are already part of the learner's interlanguage; qualitative studies suggest that it does not achieve this. Frequently learners fail to produce correct exemplars of the target structure and the teacher connives at this. Controlled practice may do little more than develop the strategies needed for reproductive competence.
(4) Even if controlled practice is credited with causing learning, there are strong theoretical grounds for believing that only some grammatical features (i.e. ‘variational’ features that are computed simply) can be influenced easily by practice. Controlled practice will only facilitate the acquisition of ‘developmental’ features if the necessary processing prerequisites have been established.

(5) Controlled practice is a source of ‘input’; the learner may select from this input what she is ready and prepared to process, irrespective of what structure is the target of the practice.

(6) The real role of controlled practice may be to raise the learner's consciousness about language form. This consciousness may not be convertible into implicit knowledge immediately but may facilitate it in the long term. There may be better ways of raising the learner's consciousness than controlled practice, however.

We are led to conclude that in the case of controlled practice the old axiom ‘practice makes perfect’ may not apply to language learning or, at least, not in the way that many teachers and methodologists think it does. Practice may only facilitate acquisition directly if it is communicative, i.e. meaning-focused in nature.

References

Ely, C. (1986), An analysis of discomfort, risktaking, sociability and motivation in
the L2 classroom. Language Learning 36, 1-25.
Johnston, M. (undated), Second language acquisition research: a classroom perspective. Adult Migrant Eduaction Service, New South Wales, Australia.
In this paper I claim that there is a set of universal speech processing constraints which applies to all types of second language acquisition. I will further claim that these constraints define the range of possible hypotheses about the structure of the L2 which a learner can create at a given stage of development, and that they cannot be overridden by formal instruction or by other alterations in the linguistic input.

These claims do not imply, however, that all types of language acquisition are identical or that teaching has no influence whatsoever on the way a second language develops in a formal context. I have shown elsewhere (cf. Pienemann, 1984, 1987a) that under certain conditions teaching can influence formal L2 development. Nevertheless, these demonstrable positive effects of teaching remain within the variational margin left open by the processing constraints.

Thus this paper examines formal language learning from the perspective of language development in order to demonstrate that the speech processing factors constraining the learning process are the same as in other types of language development. To this end I will compare the stages of acquisition found in a longitudinal study on the formal acquisition of German as a Second Language (GSL) with the stages found in natural GSL acquisition. Both sets of data will then be used to test the predictions for stages of acquisition made by a set of universal speech processing factors.

The study of formal language learning from the perspective of language development is a relatively new undertaking, although it does have forerunners. In Jespersen's (1904) as well as in Otto's (1921) view of foreign language teaching it was acknowledged that the teaching process may be constrained by the nature of the learning process. The difference in comparison to today's research is that our
understanding of that learning process has changed both in regard to the theoretical background of learning theory as well as in the depth of its description.

In contrast to the teaching of the mother tongue, the concept of natural learning constraints has long been neglected in approaches to foreign language teaching. Most of the empirical research on foreign language learning carried out in the early decades of this century dealt with experiments on (word) memorization in different learning contexts (e.g. Netschajeff, 1908; Peterson, 1903; cf. Butzkamm, 1973) and was strongly biased by associative theories of learning. The psychological as well as the educational branches of the foreign language teaching profession were more concerned with the constraints the pattern of the first language puts on the learning of the second, and hence with interference and transfer.

In the 1960s and 1970s the structuralist/behaviourist approach to foreign language teaching was followed up by extensive research efforts (cf. e.g. Scherer and Wertheimer, 1964) mainly directed to proving that the new method was superior to the old. In contrast to the work presented here, those studies focused on variables external to the learner. The reason for this is that due to the psychological assumptions on which this approach was based, the modelling of the learner's "verbal behaviour" was regarded as a matter of providing the right input to the learner, rather than accommodating learner-internal mechanisms in the teaching process.

One of the major problems with this research was the huge number of potentially relevant external variables. It has been stated by various researchers in the past (e.g. A.A. Leont'ev, 1975; Wienold, 1973; Solmecke, 1983) that the findings from the extensive amount of available research carried out in this tradition have remained inconclusive. This is because the many variables involved cannot be controlled, given the fact that the linguistic measures applied in those studies were only sensitive to quantitative, never qualitative effects of the teaching on the learner.

I think that this is mainly due to the absence (in those studies) of a specific theory about the SLA process. If classroom experiments were based on a theory which specifies what is learnable/teachable in certain circumstances and what isn't, then such studies could apply qualitative linguistic measures and thus validly test the predictions made by the theory.

The communicative approach to foreign language teaching shifted the focus of teaching from form to function. One reason for this shift was that a communicative/functional approach to teaching was believed to accommodate the expressive needs of the learners and therefore to be more efficient than its predecessor (cf. Wilkins, 1976). However, most work in this area made only rather general reference to theories of language learning, and in language acquisition circles the main claim based on learning theory implied in the communicative approach, namely that functional pressure promotes language acquisition, is still heatedly debated today, while the bulk of the empirical evidence is certainly not produced through research.
on foreign language learning.

When researchers began studying foreign language learning as an instance of language acquisition, perspectives started to change. Naturally, the internal learning constraints came more into focus, for instance in the study of universal principles of language learning and in the comparison of natural and formal SLA (e.g. Lightbown, 1983; Felix, 1981; Wode, 1981; Pica, 1983; Ellis, 1984; Pienemann, 1984; Zobl, 1985).

However, language acquisition research is too diverse a field for this new perspective in the study of foreign language learning to develop into a homogeneous approach. The different research traditions and affinities of the researchers for either theoretical or applied linguistics have created a multi-faceted field of study. Diversity not only exists in research methods and understanding of crucial concepts such as "linguistic development", but also in the range of research questions which are studied and considered answerable in our present state of knowledge.

Some researchers (e.g. Bausch and Königs, 1983) believe it is crucial to relate the output of the (formal) learner to potentially effective external factors such as the nature of the teaching process, before any valid statement about the nature of formal SLA can be made, because the learning process may vary with every alteration of such external factors. I do not share this opinion for the following reasons.

Research of the type carried out by Scherer and Wertheimer (1964) shows that factors like "method" do not have a dramatic effect on the learners’ output, leaving aside for the moment the problem of how to measure such factors in an objective way. Existing research on foreign and second language acquisition does not indicate that second languages are learned in a completely different mode when developed in a formal context, or when taught with a different method. Therefore, I believe that the most sensible way to proceed with research on foreign language learning is to discover which learning principles they share and those which they don’t share.

External factors need to be controlled for this purpose (e.g. by keeping them constant), but I don’t think that their effect on the learning process needs to be studied every time research on formal SLA is carried out, if for no other reason than because there are only very few theoretically sound and testable predictions we can presently make about a differential effect of external variables.

This explains why I will not deal with the effect of particular aspects of the teaching (e.g. a teaching "method") on the learning process in the present study. I think we need to gain a deeper understanding of the nature of L2 development before we can devise theoretically justified ways of intervening in this process and study the workings of such interventions.
2. Some points of reference

Since the research presented in this paper is based on a specific perspective on SLA and previous studies of mine, I will briefly outline these points of reference here. It should be noted, however, that this outline is bound to be very sketchy. For a more explicit presentation I would like to refer the reader to the references cited.

Word order development

The data presented in this paper come from longitudinal studies of the acquisition of German as a Second Language (GSL) in a formal and in a natural context. One area of analysis will be the acquisition of German word order. The findings for GSL word order development obtained from longitudinal and cross-sectional studies are summarized below (cf. Clahsen, 1980; Pienemann, 1980, 1981; Meisel, Clahsen and Pienemann, 1981; Clahsen, Meisel and Pienemann, 1983).

Stage X = Canonical Order

Romance learners of GSL start out with an SVO order as their initial hypothesis about German word order. For example:

\textit{die kinder spielen mim ball} (Concetta)

"the children play with the ball" \(^2\)

(Note: in most sentences with a simple verb this order is in line with standard German. Deviations appear with some types of adverbials, which in standard German must not appear in final position).

Stage X + 1 = Adverb Preposing (ADV)

For example:

\textit{da kinder spielen} (Concetta)

"there children play"

At this stage all sentences with ADV are deviant since standard German requires a word order like "there play children (i.e. verb in second position). The verb-second rule (or "inversion") will, however, only be acquired at stage x + 3 (=INV). The preposing rule itself is optional.

Stage X + 2 = Verb Separation (SEP)

For example:

\textit{alle kinder muss die pause machen} (Concetta)

"all children must the break make"

Before verb separation is acquired, the word order in the interlanguage is the same as in sentences with main verbs only (cf. the English equivalent – "all children
must have a break"). Verb separation is obligatory in standard German.

Stage X + 3 = Inversion (INV)

For example:

*dann hat sie wieder die knoch gebracht* (Eva)
"then has she again the bone brought".

In standard German the subject and inflected verbal element have to be inverted after preposing of elements.

Stage X + 4 = Verb Final (V-E)

For example:

*er sagte, dass er nach hause kommt*
"he said that he home comes".

In subordinate clauses the finite verb moves into final position.

It should be noted that in the process of L2 acquisition the learner accumulates these rules. This means that at least for the domain of word order the structure of a given interlanguage can be described as the sum of all the rules the learner has acquired up to a certain point.

The multidimensional model

Another important concept originating from the work of the ZISA group is the notion of learner's orientation (cf. Clahsen, Meisel and Pienemann, 1983; Pienemann, 1981). One of the implications of the concept is that while aquisitional stages are fixed and predetermined, there is nevertheless sufficient room for the individual to find his or her own path in the acquisition of the L2.

An example of the concept of learner's orientation involves insertion of the copula. When some learners start using equational sentences, they produce them without the copula (e.g. "he good"), while others produce such sentences in the "correct" form immediately. In comparison with other structural features, however, the "deviant" form appears earlier, giving the learner who produces it a communicative advantage (cf. Pienemann, 1981). Furthermore, the frequency of copula insertion does not necessarily increase either absolutely or proportionately as a learner moves from one aquisitional stage to another. Rather, some learners produce correct copula structures at an early stage, while others continue to omit the copula even at an advanced stage (cf. Clahsen, Meisel and Pienemann, 1983).

Clahsen, Meisel and Pienemann (1983) were able to identify some 14 features of learners' orientation (i.e. variational features) in their studies and they demonstrated that those features identify what might be called different types of learners;
i.e. learners are highly systematic in their use of variational features: if the use of one of these features is simplified so is the use of others.

Thus the ZISA workers provided empirical evidence that there are two systematic and independant dimensions in SLA: development and variation. This has drastic implications for research into classroom SLA, namely that accuracy varies with development and variation. Therefore, accuracy cannot be used as a measure of linguistic development – as is done in most studies on the effect of particular aspects of the teaching approach on the learner's language!

A further important concept for the present paper, which was also developed by the ZISA group, is their approach to determining developmental stages in SLA (Meisel, Clahsen and Pienemann, 1981): in principle, every productive usage of a structure is treated as an instance of an interlanguage rule. Thus the development of L2 structures is described as a dynamic process, taking the early "deviant" interlanguage structures as the starting point rather than defining some arbitrary criterion for "acquired" or "mastered". Naturally, this approach utilizes concepts developed in variationist linguistics.

A Predictive Framework for SLA

The sequence in the acquisition of GSL word order which I briefly outlined above has been explained elsewhere with reference to speech processing strategies (cf. Clahsen, 1981; Meisel, 1980). The basis of this explanatory approach is that the psychological complexity of a structure is dependant upon the degree of re-ordering and re-arrangement of linguistic material involved in the process of mapping underlying semantics onto surface forms. Clahsen (1981) proposes a set of increasingly complex processing strategies which can be used as a description of the processing complexity of word order rules. Assuming that structures are acquired in their order of psychological complexity, then this set of strategies predicts the order of acquisition of those rules. These predictions were borne out by large sets of data (cf. Clahsen, Meisel and Pienemann, 1983; Pienemann, 1981).

In a recent paper (Pienemann and Johnston, 1985, 1987) we revised and extended this processing approach to SLA. We showed that certain aspects of the L2 grammar are not accessible to the learner initially, despite the fact that they may exist in the L1. In particular, this concerns the organization of lexical material into syntactic categories, which are crucial prerequisites for speech parsing (cf. Kaplan, 1975). Categories are required for the insertion of local and non-local morphemes and most word-order alterations, thus for two important means of expressing grammatical relations such as "subject of". We showed that initially the learner organized his/her interlanguage around non-linguistic processing devices and gradually builds up language-specific and target language-specific processing devices.
Table 1 (see Appendix for all tables) summarizes this approach. The strings in the left-hand column correspond to the word order rules outlined above, except that the line at the bottom of table 1 has been added to represent single-constituent utterances. Table 1 illustrates that the transfer of information in a sentence is constrained by the available processing prerequisites: Since the lexical material has not been organized into categories, phrase structure rules are not accessible to the learner. Thus he/she would not be able to identify elements within the sentence from which information has to be taken or to which information has to be brought – as it is the case in the parsing of mature language where such information as ‘x is subject of y’ or ‘subject = third person’ can be held in short term memory and utilized at a later point in the sentence for agreement marking etc.

Thus, the first operations which involve such re-organizations of information (e.g. ADV) are carried out on the basis of non-language-specific position markers, i.e. the saliency of initial and final positions. Since the interlanguage grammar does not operate on categories at this point in time, there is no way morphemes can be inserted.

At the following stage the learner can identify elements in sentence-internal position by use of category distinction. However, the grammatical information kept in short term memory is only transferred into the computationally easier salient positions. Since agreement markings potentially involve the transfer of information into sentence-internal position, we find only local morphemes at this stage, but no agreement marking. The latter only appears at the subsequent stage where the transfer of information is no longer constrained.

Our claims about the accessibility of phrase structure are based on a distributional analysis of a large set of longitudinal data on ESL and GSL development. The predictions made by our framework were borne out in the analysis of a wide range of phenomena in syntax and morphology in the same set of data.

The Teachability Hypothesis

Our Predictive Framework for SLA is the theoretical background to the Teachability Hypothesis which I put forward in a separate paper (Pienemann, 1984). According to the Teachability Hypothesis the course of second language acquisition cannot be altered by factors external to the learner. In this context "course of language development" is defined as the level of processing prerequisites.

The logic behind this hypothesis is as follows: the speech processing prerequisites described above are part of an implicational hierarchy, i.e. the devices acquired at one stage are necessary building blocks for the following stage. This is illustrated in table 1. The recognition of elements in perceptionally salient positions is a
prerequisite for the processing of structures like ADV. This prerequisite is needed for the processing of structures at the next stage of complexity where information can be transferred from a sentence-internal into a salient position. At this stage another processing prerequisite develops, the recognition of sentence-internal elements, which is needed at the subsequent stage.

Because of this implicational hierarchy, none of the abstract stages of processing complexity can be skipped: there would always be a gap in the necessary processing prerequisites.

Thus the Teachability Hypothesis defines the possible range of influence of external factors on the SL learning process in a similar way to how the predictive framework defines the range of possible interlanguage hypotheses. This does not imply that learning is guaranteed by mechanisms internal to the learner. Likewise it does not imply that teaching has no influence on SLA whatsoever. (In Pienemann, 1984 and, 1987a several positive effects of teaching on SLA were demonstrated).

Our approach in the Predictive Framework for SLA and in the Teachability Hypothesis was inspired by our admiration for Jean Piaget's work on cognitive development. We have adopted one concept from Piaget's work in particular, namely the implicational nature of processing prerequisites for the operations possible at different stages of acquisition (Piaget, 1950). It needs to be borne in mind, however, that Piaget's concept goes far beyond this, since it is part of his own approach to epistemology (Rotman, 1977). Piaget not only set out what we called a "predictive framework" for cognitive development, but also developed a self-regulatory framework for the heuristics driving the developmental process. In our approach to SLA we consider the heuristics to be an open question.

Because one major concept in our approach is related to Piaget's work, it is not surprising that similar conclusions for teachability have been drawn from this concept and the research supporting it in the context of cognitive development (cf. Swenson, 1980).

A classroom experiment

The Teachability Hypothesis was tested in a classroom experiment (cf. Pienemann, 1984, 1987a). The experiment itself took the following form. Ten children whose interlanguage was between stages X to X + 2 were selected from a population of Italian speaking elementary school learners of GLS (the acquisition context was largely natural). The informants were "taught" a structure found at stage X + 3. In order to provide a parallel for the dimension of learner's orientation, a further aim of the experiment was the inculcation of standard patterns for copula usage.
The main finding was that a stage of acquisition could not be skipped by any of the learners. The learners at stages X and X+1 did not acquire X+3 in their spoken language, whereas the learners at stage X+2 did. This was explained by the fact that the learners at stages X and X+1 did not have the necessary prerequisites to process structures from stage X+3. In this context it is important to remember that the speech processing prerequisites described in our Predictive Framework of SLA (Pienemann and Johnston, 1985, 1987) are part of an implicational hierarchy, i.e. the prerequisites acquired at a certain stage are a necessary building block for the following stage.

The results for the dimension of learner's orientation showed that there was no such teachability constraint for variational features. This is completely in line with the Teachability Hypothesis, since we had shown that variational features do not require more processing complexity than is available at the given stage of acquisition.

3. Data collection

The data for the present longitudinal study of formal SLA come from the "$Sydney Project on Language Acquisition in the Classroom" (SLAC). The SLAC project consists of a one year-long longitudinal study with three learners and a combined crosssectional and longitudinal study with 12 learners. The second study also includes 3 psycholinguistically motivated teaching experiments.

All our informants were students at the University of Sydney who began learning German without any prior exposure to the language. The informants for the first study were interviewed at fortnightly intervals, the other informants at intervals determined by the design of the teaching experiments. All interviews were carried out by a native speaker of German who developed social links with some of the informants. The conversations dealt mainly with social activities and the university.

The language course consisted of six hours instruction per week. It was taught with the textbook "Sprachkurs Deutsch" and supplementary material on German grammar. The textbook follows a communicative approach from which the tutor deviated when he/she felt it necessary (especially for the formal teaching of grammatical rules).

The interviews in the first study were transcribed in full. Those from the second study were provisionally analyzed with an observation-type assessment procedure (cf. Pienemann and Johnston, 1986). They are currently being transcribed. The linguistic analysis of the first study was carried out with COLIAN, a computer-aided approach to linguistic analysis (cf. Pienemann, 1987b). For the analysis of morphology and syntax only productive utterances of the learners were used; i.e. "echoes" and imitations as well as word-by-word repetitions of the classroom input.
were excluded from the analysis.

4. Word order

In this section I will present our analysis of the acquisition of German word order rules by three informants and compare these with findings from natural GSL acquisition. The analysis will allow us to test the Teachability Hypothesis with a variety of structures.

Tables 2 and 3 display two different aspects of the input as it was structured over the first nineteen weeks of the course (i.e. two trimesters). Table 2 lists those structures in the domain of word order which were in the syllabus (where a conscious attempt to teach them through intensive exercises was made). The most important observation in Table 2 is that all major word order rules (except V-END) are introduced as early as the fifth and seventh week, within a short period of time, even though the different linguistic contexts in which these rules apply are spread over a more extensive time frame.

Table 3 further summarizes the structures contained in the written input (i.e. in exercises, textbooks, etc.). It is apparent that here far fewer structures are filtered out and that the learners are exposed to all German word order structures from an early point in time.

Tables 4, 5 and 6 provide an analysis of the interlanguage of three learners for a period of 27 weeks (Steven), 19 weeks (Guy) and 9 weeks (Vivien). The occurrence of optional rules is marked with an "X", whereas for obligatory rules the relative frequency is given. The symbol "P" is used to stress that in the given interlanguage the structural description of the rule given on the left hand side of the table is not met in a single case. If this fact was not to be stressed, the appropriate cell of the table was simply left blank.

Let me also draw the reader's attention to the line "SEP with V- Complement": In many cases a sentence will only consist of NP+ AUX+V. In such cases we cannot decide whether the learner applied SEP or whether the structure was simply left in the same order as it would appear at the stage preceding SEP. This question can only be answered if AUX and V are separated by a verbal complement. In this line we therefore noted the relative frequency of SEP application in sentences with verbal complements.

There is a similar phenomenon with the other obligatory word order rules. If we find a structure like. PP + V + NP (where NP is the subject) we cannot decide whether the learner has simply applied a subject-final strategy which is as complex to process as SEP (cf. Clahsen, 1981; Pienemann, 1984) or whether he can in fact apply INV. Again, the test case is a sentence with a verbal complement. Therefore,
we included the line "INV with V-Complement" which gives the relative frequency of INV application for sentences with verbal complements. A similar line is also included for V-END, because without a verbal complement the word order of German subordinate clauses is simply SV, which doesn't give us a basis to decide about the application of V-END.

If we now compare the input the learners received with the output they produced, we are not surprised to find that all learners acquired SVO first, because this structure was also contained in the input from the first week on. Similarly, TOPI is present in the input as well as in the early interlanguages of all three learners.

The interesting structures are SEP, INV and V-END. SEP was an explicit learning objective from the seventh week on and INV from the first week on, while V-END was not included as a formal learning objective. Table 4 shows that Steven produces the linguistic contexts for SEP as early as from the 5th week on. However applications of SEP only occur from week 17 onwards – as can be seen from the line "SEP with V-Complement". (The figures for week 9 and 11 are based on just one sentence with one verbal complement each!). That is to say: over a period of 12 weeks his interlanguage structure contrasted sharply with the input and the learning objectives of his German course.

As can be seen from table 5, the situation is very similar for Guy, with the exception that he acquires SEP two weeks earlier than Steven, namely in the 15th rather than in the 17th week (the frequency of SEP application in sentences with complements rises from 0 to 0.75). Vivien did not acquire SEP during the nine weeks she was observed, although this rule was taught in weeks 7 and 9. It should be noted that Vivien completely avoids contexts in which SEP has to be applied, while Steven and Guy do produce such contexts (which they must have learned/acquired from the input).

The contrast between input and output continues with the learning/ acquisition of INV. As can be seen from tables 4 and 5 Steven and Guy produce INV-like structures in questions (yes/no- questions and WH-questions) but never apply INV after preposed PPs. Most of these INV-like structures, however, do not contain a verbal complement (compare the figures in the line "INV with V-complement" in tables 4 and 5), i.e. they can be accounted for by a subject-final strategy. Thus the frequency of INV application for sentences with verbal complements is close to zero. Note that the figures for the application of INV with verbal complements – for Guy and Steven – only represent as few as one or two sentences. The first exception to this is Guy's interlanguage in week 19, when INV is applied in 36% of all sentences with verbal complements which meet the structural description of INV. Therefore this is the beginning of Guy's acquisition of INV.

Summing up, we can say that INV, a structure which was taught and contained in the input throughout the whole period of observation, was not produced for 17 weeks by one of the learners and not at all by the other two learners. The lin-
guistic contexts for the rule were, however, produced by the learners, i.e. the application of the rule was "attempted" over long periods of time.

The rule V-END was not a formal learning objective. Nevertheless it appears in the input from week 7 on. Steven and Guy both produced a small number of subordinate clauses as from week 7 and 11, respectively. However, they never applied V-END.

Table 7 summarizes the above analysis of word order development and gives an overview of the course the learning was planned to take as well as the actual development in the learners' output. In table 7 each word order rule is represented by a box as indicated in the field "INPUT" for the first week of the course; i.e. the box at the top always represents "SVO", the next one down always represents "TOPI" and so forth. A blank box indicates that the particular structure is not present in the given sample; a grey shade in the box indicates that the structure is present.

Looking at table 7, we find that all three learners extend their word order rules gradually and in absolutely the same way. The table illustrates this by the fact that for all OUTPUT samples new gray shades (i.e. new rules) adjoin with existing grey shades. Since in this table the rules are displayed in the order in which they are acquired in natural SLA, the absolute continuity of the development of the formal learners means that these rules are acquired in the same order as in natural GSL acquisition.

When we contrast the output with the input, it becomes apparent that in all three cases the learners follow their own pattern rather than the one scheduled in the teaching. Table 7 in fact illustrates a multiple test of the Teachability Hypothesis which is implicit in this study. INV is taught not just at one point in time, but every week over the whole period of observation for all informants; yet it has been integrated into Guy's interlanguage only after 19 weeks, and after SEP was acquired, while the other learners have not acquired it at all. This non-effect of the teaching was indeed predicted by the Teachability Hypothesis, because INV was taught long before SEP had developed in the interlanguages.

What is more surprising though, is the fact that the teaching of SEP did not cause the emergence of this structure in the learners' language for periods between four and five weeks, although the interlanguages had already developed to the stage prior to SEP. Thus we have to conclude that the position of the interlanguage at the stage prior to the structure to be taught is not a sufficient condition for teaching to be effective. Presently we do not know whether the reasons for this non-effect operate inside or outside the learner. It might be possible to define teachability more precisely than we have done. We will test whether there is a structural change in the types of topicalizations produced by the learners at the point in time when SEP was acquired or shortly before. It is possible that the processing prerequisites need to reach a certain maturity before the next stage can
be developed.

Summing up, table 7 makes two major results of the above analysis apparent: (1) formal learners develop their interlanguage stepwise, despite the scheduling of the teaching and (2) – more importantly – in the same order as has been found for the natural acquisition of German as a second language.

Let me stress at this point that this neither implies that teaching has no influence on acquisition nor that all types of language acquisition are identical. This point will be illustrated in the following section.

5. Verbal morphology

In the following section I will test some of the predictions of the Teachability Hypothesis for morphological development. Furthermore, I will show that in morphological development there is a common set of underlying learning principles in natural and formal SLA.

For reasons of space I have to restrict the morphological analysis of our data. I will do this in two ways: The analysis will be restricted to verbal morphology and to just one informant, namely Guy, who advanced furthest within the period of observation. In the Predictive Framework we made a basic distinction between local and non-local morphemes and the points in time when the two different types can be acquired. We predicted that local morphemes require the same degree of processing complexity as structures like SEP and that non-local morphemes require the same degree of processing complexity as structures like INV.

This prediction is based on the fact that the morphological and syntactic structures involved in this comparison require – at each stage – a common set of processing prerequisites: the insertion of morphemes requires the parser to identify the insertion point by recognizing the formal syntactic class of the element undergoing the morphological process. The same applies to re-arrangements of word order.

The difference between structures of stage SEP and stage INV is that for the first, only one element needs to be identified by assigning it to a formal class, since the structures which are possible at this stage are either local, i.e. involve no sentence-internal transfer of grammatical information, or the target point of the transfer is a perceptionally salient position. By contrast, at stage INV the recognition of the formal class of all elements in the sentence is required to enable the parser to identify the source and the target point of the information transfer, both of which may be internal, as in the following example: then he go-es home,
where the information "subject = 3rd person" has to be held in short term memory from one internal position (he) to another (go). Thus the Predictive Frame-work, amongst other things, also implies that local morphemes will be acquired before non-local morphemes.

We are now in a position to test these predictions with the longitudinal data from the SLAC project (cf. section 3).

There is one example of a local morpheme in Guy's interlanguage from the domain of verbal morphology, namely the German tense marker *ge-, a verbal prefix. The first occurrence of this morpheme in Guy's interlanguage is in week 15 with the following examples:

- ge-denk-t
- ge-fäll-t
- ge-hör-t
- ge-komm-t.

This is also the point in time when SEP is acquired. This synchronism of the two acquisition processes supports our prediction for the acquisition of local morphemes.

In this case the two acquisition processes appear to be completely simultaneous. According to the Predictive Framework this does not necessarily need to be the case, because the mere presence of all processing prerequisites for a structure does not imply that the learner would therefore automatically proceed in the acquisition process and exploit all available structural possibilities. In a study on child natural GSL acquisition (Pienemann, 1981) I found in fact that there can be a considerable temporal gap between the acquisition of the *ge*-marker and SEP.

There is no general agreement about what it is that causes the acquisition process to proceed. As we pointed out in Pienemann and Johnston (1985, 1987) the hypotheses about this range from "functional pressure" and "accommodation of newly perceived structures" to "perception of structural evidence for the setting of a new parameter". We will return to the question of the degree of interlocking between the acquisition of morphology and syntax below.

The example of a non-local morpheme we want to analyze here is the morphological marking of person agreement in the verb. For reasons of simplicity the analysis will be restricted to grammatical subjects which are marked as "singular". We will analyze subject-verb agreement with main verbs and the copula in present tense only, since the very limited number of occurrences of other verbal elements and tense markings does not permit a meaningful distributional analysis. In German, the marking of person agreement in the verb is very similar to English subject-verb agreement:
Copula

1st person
2nd person
3rd person

<table>
<thead>
<tr>
<th>person</th>
<th>singular-NP</th>
<th>list/1s</th>
<th>singular -NP</th>
<th>list/1s</th>
</tr>
</thead>
<tbody>
<tr>
<td>ich</td>
<td>Ich bin</td>
<td>I am</td>
<td>you</td>
<td>you are</td>
</tr>
<tr>
<td>du</td>
<td>du bist/bis</td>
<td>you</td>
<td>you</td>
<td>you are</td>
</tr>
<tr>
<td>er, sie, es</td>
<td>he, she, it</td>
<td>he, she, it</td>
<td>he, she, it</td>
<td>he, she, it</td>
</tr>
</tbody>
</table>

Main verb

1st person
2nd person
3rd person

<table>
<thead>
<tr>
<th>person</th>
<th>singular-NP</th>
<th>V-t</th>
<th>V-s</th>
</tr>
</thead>
<tbody>
<tr>
<td>ich</td>
<td>ich V-e/V-O</td>
<td>I V</td>
<td></td>
</tr>
<tr>
<td>du</td>
<td>du V-st/V-s</td>
<td>I V</td>
<td></td>
</tr>
<tr>
<td>sie, es</td>
<td>he, she, it</td>
<td>he, she, it</td>
<td></td>
</tr>
</tbody>
</table>

(Note: V stands for verb stem)

The results of our distributational analysis of the marking of person agreement in Guy’s interlanguage are displayed in tables 8 and 9. The analysis was carried out on a micro-computer with the COLIAN package (Pienemann, 1987b).

The left-hand side of tables 8 and 9 lists the different linguistic contexts which were analyzed. In the line "ich-cop1" in table 8 we listed the proportion with which the correct form of the copula was supplied in sentences with a first-person subject (= ich). The line "x-cop1" displays the proportion with which the same form of the copula was used in other contexts (thus the number of cases with cop1 and a subject other than ich divided by the total number of cases with cop1). The line below gives the proportion of sentences in each interview in which either the subject or the copula was missing.

The same basic setup is repeated in the lines below for the marking of second and third person. The bottom line of table 8 gives the type/token ratio for the NPs used in equational sentences, provided that the number of cases was greater than five. In the other cases the corresponding field was left blank. "pro3" stands for "third person singular pronoun".

Table 9 is designed similarly to table 8 with the exception that the omission rate for subjects and verbs and the type/token ratio are not given. The reason for this is that both omission rates were close to zero for the entire observation period and that for all interviews the number of sentences in which the subject was a "full" NP and the verb was marked for person agreement was too small to permit a meaningful calculation of a type/token ratio for NPs.

Before we interpret tables 8 and 9 it is useful to recall that our hypotheses predict that INV and SV-agreement require the same degree of processing complexity. Thus the prerequisites for the acquisition of both types of rules develop around
the same time\textsuperscript{6}) Our hypotheses also predict that local morphemes will be acquired before non-local morphemes.

Looking at table 8 we see that in Guy's interlanguage, the rate of SV-agreement in equational sentences is close to the standard norm right from the beginning of the observational period. The figures in the line "x-cop1" show that the form of "cop1" was exclusively used for grammatical subjects with first person marking. Thus the SV-agreement – in this particular environment – is not random, but it is brought about by highly regular use of the target-form of the copula.

Obviously, the number of cases with "second person subjects" in equational sentences is too small to draw any conclusions from, apart from the fact that the cop2 form is very rarely used. This implies that it is also rarely used in contexts other than for the marking of second person.

For third person pronominal subjects we find a repetition of the pattern seen with first person marking, i.e. cop3 is almost exclusively used with pro3 or non-pronominal subjects right from the beginning of the observational period. The picture is unclear with NP-subjects however, because apart from three interviews the number of equational sentences with a non-pronominal subject is smaller than five and thus does not permit us to draw any conclusions from the figures given in table 8. Thus it seems as though these findings in regard to SV-agreement contradict our hypotheses, because the first local morpheme appears in week 15, while SV-agreement marking appears to be present at a much earlier point, although the latter was predicted to be more complex than the first.

I think that we would once again be misled by our implicit target language norms if we were to accept the analysis in table 8 as evidence for the presence of non-local morphology in Guy's interlanguage. I will demonstrate below that apparent agreement phenomena can be accounted for by the learning of structurally invariant material. To illustrate this point we need to look at the development of SV-agreement with main verbs.

As table 9 shows, the picture is rather different for agreement marking with main verbs. The figures for first person agreement vary between 0.56 and 0.82. Thus one might conclude at first glance that this reflects a regular morphological agreement marking. However, the use of the same morpheme with grammatical subjects other than first person varies within the same range of frequency (0.47 to 0.80). There-fore, we must conclude that the verbal morpheme -e does not mark SV-agreement in Guy's interlanguage.

We will leave the zero morpheme for agreement marking aside for a moment. The marking of second person in verbs is similar to the marking for the copula in one respect, namely that only very few second-person subjects occur in the first place.
The morphological marking of second person in verbs (-s/-st) is virtually never used by Guy, neither correctly nor incorrectly.

The main tendency found in the marking of first person in verbs reappears in the marking of third person. If we exclude the values given in brackets in table 9 for reasons of limited reliability, the frequency for the affixation of -t varies between 0.33 and 0.59 with pronominal subjects and between 0.10 and 0.33 with non-pronominal subjects, while the frequency of random t-affixation varies between 0.23 and 0.63. Thus the random occurrence of the verbal inflectional morpheme -t varies within the same range as the occurrence of the same morpheme in contexts where it marks SV-agreement. In other words, those cases of apparent SV-agreement can simply be accounted for by "random hits". It is interesting to note that the rate of random hits is markedly lower for "NP-subjects" than for pronominal subjects.

The interpretation that random usage of verb forms is occurring in Guy's interlanguage is supported by a brief look at the morphological variation within the lexical material contained in it. If we exclude the prefix ge-[a past marker], only 18% of all verbs alter in their morphological form, thus whatever the subject, the form of the verb is always

- helf-e (help)
- leb-e (live)
- les-e (read)
- schlaf-e (sleep)
- fähr-t (go, drive)
- gib-t (give)
- läuf-t (go, run) etc.

Thus the overall picture for morphological person marking in main verbs reveals that the figures for apparent SV-agreement are actually brought about by a low degree of morphological variance and not by a true morphological affixation rule. The only exception to this appears in the 19th week of observation with the use of zero morphemes for the marking of first person. Table 9 shows clearly that zero morphemes occur very rarely before week 19 and that in week 19 they occur exclusively to mark first person. Furthermore it is not surprising that 75% of the verbs which are marked with a zero morpheme at this point in time belong to the small group of verbs in Guy's interlanguage which vary morphologically.

As far as main verbs in Guy's interlanguage are concerned, this then is the only rule for SV-agreement. Note that this rule emerges four weeks later than the past marker (ge), which supports our hypothesis about the order in which local and non-local morphemes are acquired.

The question which remains, however, is why there is such a difference between
acquisition of SV-agreement with main verbs compared with the copula, and whether this difference is negative evidence against the Predictive Framework. I indicated above that I believe the apparent mastery of SV-agreement in equational sentences can be accounted for by the learning of lexically invariant material. To illustrate this point we need to consider the psychological processes involved in SV-agreement marking.

Typically, SV-agreement marking is based on (1) the recognition of the grammatical subject of the sentence, (2) the recognition of its number marking, (3) the recognition of that verbal element which has to carry the agreement marking and (4) affixation of the correct morpheme to the verb – on the basis of accessibility of (2) in short term memory. However, these prerequisites only apply if subject and verb vary lexically and morphologically in the given (inter)language, because if they don’t vary, they can simply be learned as one block. Looked at from this perspective, a major difference between the copula and main verbs is that the latter vary lexically while the former doesn’t. Similarly, pronominal subjects don’t vary lexically (except for gender marking in third person), while non-pronominal subjects do.

Thus, as both the subject and the verb do not vary lexically and the position of the two remains fixed in the interlanguage, they can be learned as one block (e.g. I am x). This would account for the fact that the equational sentences with pronominal subjects in Guy’s interlanguage seem to conform to SV-agreement from as early as the 5th week, while at the same time there is no agreement marking main verbs.

The situation is different for lexical subjects, because here the subject can vary lexically which makes it impossible for the learner to acquire SV-structures as unanalyzed chunks. Unfortunately there are very few occurrences of equational sentences with "NP-subjects" in Guy’s interlanguage – hence so many figures in brackets in the corresponding line of table 8. But there is an important observation to be made concerning this type of structure: The type/token ratio for the use of NPs in these structures increases from 0.55 / 0.53 in the early interviews to 1.00 in interview 17.7)

This shows that there is a low degree of lexical variation of NPs in this structure in weeks 7 and 11, a condition which facilitates "chunk learning". In week 17, however, these facilitating circumstances have disappeared. Since there is also a high rate of SV-agreement in Guy’s interlanguage at this stage we can no longer assume that these structures are unanalyzed chunks.

Summing up then, we found that the apparent SV-agreement with the copula likewise is no reflection of the morphological process characterized by sentence-internal transfer of grammatical information. The only point in time when there is evidence for such a process is interview 17, and this occurs later than the emer-
gence of local morphemes in Guy's interlanguage (i.e. interview 15).

6. Summary of sections 4 & 5

The development of morphological and word order rules in Guy's interlanguage can be summarized as follows:

<table>
<thead>
<tr>
<th>word order</th>
<th>morphology</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVO</td>
<td>—</td>
</tr>
<tr>
<td>ADV</td>
<td>—</td>
</tr>
<tr>
<td>SEP</td>
<td>ge-V</td>
</tr>
<tr>
<td>INV</td>
<td>V + 0 (SV-agreement).</td>
</tr>
</tbody>
</table>

Now, it must be borne in mind that these learning processes occurred in a formal learning context where the grading of teaching objectives and linguistic input contrasted sharply with the linguistic output. It should be added here that both the past marker (ge-) and SV-agreement were taught from the 11th week on.

Throughout this paper I have pointed out two ways these findings can be used to test the Teachability Hypothesis. (1) A comparison of the development of morphology and word order allows us to test the predicted interlocking of these structural domains in the learning process. (2) A comparison of the present findings with natural GSL acquisition allows us to determine whether there is a common set of principles for the two types of language acquisition.

As far as the interlocking of word order and morphology is concerned, the data analyzed above support our prediction that the insertion of local morphemes requires the same degree of processing complexity as SEP because the two types of rules were acquired at the same stage of interlanguage development. The same is true for the interrelation of non-local morphemes and INV.

The late development of morphological agreement marking in formal SLA is not immediately obvious, because the data contain a high proportion of inflected verb forms. In the above analysis I showed that in equational sentences with pronominal subjects, SV-agreement can be accounted for by the rote memorization of the SV-block in a similar way to the memorization of a single lexical item. Because it remains lexically and morphologically invariant, no grammatical information needs to be transferred from one constituent to another to produce this structure.

For main verbs I showed that the high rate of "correct" usage of the formatives -e and -t is due to the low rate of morphological variation of the verbs used. This allows the learner to make "random hits". I showed that the random usage of the above formatives varied in the same range of frequency as the apparent SV-
agreement marking.\textsuperscript{8})

Thus, what at first glance seemed to be evidence of the presence of agreement marking in Guy's interlanguage before week 17, is only a reflection of Guy's use of lexically and morphologically invariable material. Moreover, since the first real case of SV agreement appeared with those verbs which did vary morphologically, lexical tend morphological variability appears to be a key to the development of formatives.

In Guy's interlanguage development we can distinguish three stages of variability in the development of formatives:

\begin{center}
\begin{tabular}{ll}
\textit{variability} & \\
lexical & morphological \\
1 & - & - \\
2 & + & - \\
3 & + & + \\
\end{tabular}
\end{center}

Stage 1 represents cases such as equational sentences with pronominal subjects or invariable lexical subjects. Because of the invariability the two constituents can be memorized as one unit. Stage 2 represents morphologically invariable verbs which are used with different grammatical subjects. In terms of the target language these verbs contain a formative, but since the same formative does not change for the individual verb, the learner treats the particular form of the verb as one unanalyzed unit. At stage three morphologically variable verbs are used in different contexts. This enables the learner to do two things: (1) he/she can recognize the formative as one morphological unit, and (2) this allows him/her to discover the root of the verb. This does not guarantee that the agreement marking will be correct, but it is a neccessary prerequisite for morphological affixation.

Thus lexical and morphological variation is one source for the learner to develop formatives. This is further supported by the fact that the first instances of the marking of SV-agreement occurred with those verbs which had previously varied morphologically in the learner's language.

As far as a comparison of the findings from formal and natural GSL acquisition is Concerned, we have already seen above that the pattern for the acquisition of word order is identical in both contexts. Also, I mentioned that in a study on natural (child) GSL development (Pienemann, 1981) I found that the first local morpheme, the past marker ge-, was acquired according to the predictions of the Teachability Hypothesis and at the same relative point in time as in the present study, namely when SEP is acquired.

In the same study on natural GSL development the morphological marking of
SV-agreement was acquired simultaneously with INV. The actual agreement marker, however, was not a zero morpheme as with Guy, but the formative -t which was overgeneralized to the marking of third and second person. This is probably due to the fact that the natural and the formal learner started the morphological development of their interlanguages from different positions: while the natural learner initially used a high rate of verb roots, the formal learner started out with a variety of unanalyzed inflected forms. Therefore the two types of learners had to discover different things. The natural learner had to develop the concept of affixation, while the formal learner had to develop the concept of a root form.

Thus a comparison of formal and natural GSL acquisition suggests that both types of acquisition processes are constrained by the same principles. This does not imply however, that the two types of L2 acquisition share all learning principles. It is possible there are constraints which only apply to the one type of SLA and cause different surface phenomena despite the commonality of one set of constraints. The development of morphological agreement marking illustrates this point.

7. Further evidence

I mentioned in section 3 that the database of the SLAC project contains a second set of data collected in connection with a series of teaching experiments. These data are especially interesting in the light of the present discussion, because they are based on 12 learners over 7 different points in time. Thus they afford us a first impression as to whether the findings from the learners analyzed above may be generalized.

The set-up of the experiments was as follows: in a beginner’s class of German (university students) the interlanguage development of the learners was monitored with the help of an observation-type assessment procedure (cf. Pienemann and Johnston, 1986) which is based on findings from natural GSL development. When a certain proportion of the students were found to be at a specific stage of development, a set of structures was taught which, according to the Predictive Frame-work, were hypothesized to be learnable at that particular stage.

The following structures were attempted to be taught:

Experiment 1:
  SEP
  the comparative morpheme -er (a local morpheme)
Experiment 2:
  INV
Experiment 3:
  Passive
  the derivational morpheme -bar (= ‘-able’).
With these experiments we hoped to achieve the following things: (1) to test the feasibility of a psycholinguistically motivated syllabus, (2) to test the Teachability Hypothesis for a certain range of phenomena and learners and (3) to test the prediction of our hypothesis in regard to the interlocking of morphology and syntax in SLA.

It would exceed the scope of this paper to fully evaluate this set of data. Moreover, it should be pointed out that these data have so far only been analyzed in a very preliminary way, namely with the above-mentioned observation procedure only.

I would like to stress that this procedure was not developed to replace a careful linguistic analysis. First tests of the procedure show that the correlation (Spearman rank order) between the results obtained from it and from a thorough linguistic analysis of the full transcriptions of the same interviews is ca. 0.7 with a significance level of 0.000 (Brindley, Pienemann and Johnston forthcoming). This approximation of the test results to the factual structure may be acceptable in a teaching context, because the only purpose of the test is to determine the overall stage of acquisition of a learner. However, for analyses of the type presented in the preceding sections, we have to rely on the quantitative correctness of the analysis in every linguistic environment.9)

Therefore, I will only use this preliminary analysis to obtain a general impression of the overall interlanguage development of our 12 informants. The results obtained from the application of the assessment procedure to the learners’ interlanguages are displayed in table 10. The set-up of this table is similar to that of table 7, i.e. linguistic rules are represented by boxes and in this case circles as well, which are identified in the legend for table 10. For the category ‘local morphemes’ the past marker ge- and the comparative morpheme -er were analyzed. The category ‘non-local morphemes’ was tested with SV-agreement marking.10)

It should also be noted that the German course the informants attended, started in the first week of March. Hence the period of ‘exposure’ was six weeks at the time of the first interview.11) The progression of the teaching objectives was the same as in the above study.

There are two basic findings which can be derived from table 10.

(1) All 12 interlanguages develop in exactly the same order as we found for natural GSL acquisition and for the three formal learners which we analyzed above. This can easily be seen from the fact that for all learners and all interviews the grey shades in the boxes (i.e. ‘rule applied’) adjoin in the same way as was found in table 7 for the three formal learners.

(2) The second point is that it was possible to add the morphemes -er and -bar to the interlanguages at the predicted points in time, if the interlanguage was
sufficiently developed.

Thus it appears very likely that the similarities between natural and formal SLA found in the preceding sections can also be substantiated using a larger set of data and that the interlocking of syntactic and morphological development can be substantiated by a wider range of informants as well.

8. Discussion and open questions

In this paper I have concentrated on the similarities between formal and natural SLA. The reason for this is that the findings emerging from teachability experiments and a comparison of formal and natural SLA provide an empirical basis for determining learning constraints which are common to both types of SLA and thus constitute learner-internal constraints which have to be accommodated in the teaching process.12

There is no doubt that there are also tremendous differences between natural and formal SLA. One example was touched upon in this paper, namely the morphological marking of SV-agreement: while formal L2 learners use verb forms containing formatives from an early point on, (child) natural L2 learners start out with root forms. This results in a different acquisitional pattern, although, as I have shown above, the structures produced by both types of learners follow the same set of constraints.

I think that the question as to whether formal and natural SLA are the same or different is a not very useful one to ask, because the answer would have to depend on the yardstick we apply to determine the nature of different types of SLA. I certainly do not want to imply that the set of learning constraints which I have shown above to be common to formal and natural SLA sufficiently characterizes the nature of language acquisition. I think that it is one necessary feature for such a characterization, but other features such as the heuristic principles of the acquisition process would have to be evaluated as well.

Although our findings from Guy's interlanguage development and from our natural (child) SLA learners showed that agreement marking was acquired simultaneously with INV, I would like to stress that our hypothesis about the interlocking of morphology and syntax in SLA does not imply that the actual acquisition of the two linguistic domains are necessarily synchronized. It only predicts that there is a common denominator for the psychological complexity of morphological and syntactic rules which are processable at a given stage of acquisition and that consequently there is an interlocking in the learnability and teachability of rules with the same degree of processing complexity. This prediction does not exclude that there may be ‘gaps’ in interlanguage development, i.e. that a learner moves on without learning rules which he/she would in principle be able to process.
Table 10 indicates that this phenomenon is quite frequent in SLA. Most of the 12 learners appear to have slid back in their morphological development in their third interview, and this situation changes only slightly in the fourth interview when the learners make even further progress in the development of word order.

This phenomenon of "developmental gaps" has been pointed out repeatedly by SLA researchers. Within the work of the ZISA group developmental gaps were identified as variational features; i.e. it was found that such gaps are typical for specific groups of learners and that they correlate with other variational features (cf. Claßsen, Meisel and Pienemann, 1983; Pienemann, 1981).

In the present context it is important to appreciate the nature of this correlation. It was found that with a particular type of learner gaps had the effect of making the interlanguage appear more target-like, while another type of learner simply stripped off the linguistic contexts for the application of rules. The first type of gaps thus appeared with norm-oriented and communicatively less effective learners at early stages of development, while the second type was accompanied by further features of "restrictive simplification" (Meisel, 1980).

It is especially the first type of gap which illustrates the problem space which a second language learner finds him/herself in. Let us take complex verbal groups as an example: At the stage ADV there will not be any deviation from the target norm in the learner's language as long as he/she uses simple verbs. However, if he uses complex verbal groups (i.e. aux+ V or mod+ V) he will run into a number of structural problems which he cannot solve at this stage of development, e.g. the application of PART. This situation opens up a choice for the learner: He can either go for the target norm and hold back with complex verbal groups, or he can exploit the communicative effect these structures have; however, at the cost of correctness (cf. Pienemann, 1981).

We do not fully understand how internal and external factors determine the way such variational features develop in a learner and how this determines the learner's further path of development, but there is evidence that variational features can be modelled through teaching (cf. section 2; Pienemann, 1987a).

Table 10 gives further evidence of this in that it shows that developmental gaps can be filled through teaching. The clearest two cases are informants 5 and 6 who had not developed any non-local morphemes although they had already acquired INV (compare their interlanguages at July 15). After Experiment 3 such morphemes were added.

Summing up, the Teachability Hypothesis provides a framework for determining a set of necessary conditions for teachability predicting what is teachable at a relative point in development and what isn't. However, we still have a long way to
go before we will understand how these conditions interact with other sets of conditions which are external to the learner and how in these constrained circumstances the learning process can best be modelled through a modification of external factors.

Acknowledgement

I would like to express my gratitude to Mary Giddings, Mark Simblist, Rüdiger Wasser and Lynette Wood for their invaluable help in the conduct, transcription and analysis of the interviews of the Sydney study and to my colleague Brian Taylor for his cooperation in the data collection.

Notes

1) With the exception of section 8, this is the non-abbreviated version of a paper delivered to the AILA Scientific Commission on Second Language Acquisition on the occasion of the AILA World Congress, Sydney, August, 1987. An abbreviated version of this paper with the same title will appear in a special issue of the Australian Review of Applied Linguistics.

2) The German example sentences are translated into English word-by-word in order to illustrate the word order phenomena studied in this section.

3) These studies were sponsored by a Special Research Grant from The University of Sydney and a grant from the Australian Research Grant Scheme.

4) I would like to thank Rüdiger Wasser for the marvellous interviewing job he did.

5) It needs to be stressed here that I do not define stages of acquisition solely by word order, but I only use the word order labels here for the sake of easy reference.

6) This does not guarantee that all rules for which the learner has developed the necessary processing prerequisites will in fact be acquired as early as possible. Thus our hypothesis cannot predict whether there will be "gaps" in the SLA of a particular learner, but it does predict the order in which those structures which do appear in a particular interlanguage will develop.

7) For the other interviews the number of NPs in these contexts is so low that a type/token ratio cannot be calculated in a meaningful way.

8) Apart from this, there are very few lexical subjects in Guy’s interlanguage. This is a further indication of the structural environment for the marking of SV-agreement being simplified in Guy's interlanguage when compared to the target language.

9) We found it especially difficult to obtain a reliable assessment of SV-agreement with this procedure. The reason is probably that the interlanguages of most of
our formal L2 learners are similar to Guy’s in that they contain many unanalyzed units which give the impression of correct SV-agreement.

10) In the present paper I will not justify the inclusion of the passive and the derivational morpheme -bar in the experiment, because this is not crucial to the present discussion. The experiment will be evaluated in detail in a forthcoming paper (Pienemann and Simblist, Experiments on Teachability).

11) This explains why the structure of the different interlanguages is rather similar in the first interview and tends to vary to a greater extent among the learners towards the end of the observational period.

12) It is evident from the discussion in section 5 that structures can be learned as ‘routines’ at points in time when they cannot be fully analyzed by the learner. If teaching is intended to take advantage of this, it would have to take the teachability constraints into account in order to determine at what point in time a transition can be made from routines to a productive application of the rule.

13) It should be noted that our child informants were 8 years of age.

References


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### TABLE 3:
**STRUCTURES CONTAINED IN THE INPUT**

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<thead>
<tr>
<th>Weeks</th>
<th>1</th>
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**Figure:**

- A diagram or chart illustrating data or processes related to the table.
Table 10: Teaching Experiments and Interlanguage Development - Overview

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Legend:
- **MORPHOLOGY**
  - NOUN
  - VERB
  - AUX
  - MOD
  - LOC
- **WORD ORDER**
  - SVO
  - VSO
  - SVO
  - VSO
  - VSO

Note: The table and diagram illustrate the development of interlanguage structures over time, with specific symbols representing different morphological and word order changes.
WHAT'S THE QUESTION? 
INVESTIGATING QUESTIONS IN SECOND LANGUAGE CLASSROOMS*1)

Gisela Håkansson University of Lund and 
Inger Lindberg University of Stockholm

Background

During the 50's and 60's the most prevalent function of teachers' questions in foreign language classroom was to trigger the reproduction of structures in mechanical drills and exercises. The underlying learning theory of such teaching is behaviouristic, building on the assumption that learning a language, like learning in general, is a matter of stimulus and response. The teachers' questions in this context are, in other words, the stimuli to which the learners are supposed to react in terms of given structures in the foreign language. Questioning and answering in such classrooms does not involve any exchange of information. This means that the function normally associated with questions, namely that of requesting information in order to bridge information gaps, is eliminated. Moreover, it is important to stress that the answers produced by the learners in such classrooms are merely reproductions of structures earlier presented by the teacher or in the textbook, leaving very few opportunities for the learners to produce any utterances of their own or use the language in any creative way. According to this view of language learning, creative language use should in fact be avoided since it may result in erroneous structures which are considered detrimental to learning.

At the time when such a mechanical view of learning had considerable impact on the behaviour of many language teachers, the field of linguistics was dominated by a structural view of language, and emphasizing phonological, morphological and

syntactic aspects of language. The break-through of cognitive learning theory was to change the view of language acquisition and language learning in a very crucial way, first in the field of first language acquisition and later also with regard to second language acquisition and learning. The learner is now attributed an active role in the learning process, in which formulating, testing and reformulating of hypotheses form an essential part. The process of second language acquisition is looked upon as developmental in terms of a succession of interlanguage systems directed towards the target language. A prerequisite for such a process to take place is that the learner has access to the target language at a comprehensible level so that hypotheses about the target language can be formulated and tested. As regards the general view of language, there has been a shift towards semantic, pragmatic and sociolinguistic aspects. The impact of these shifts of paradigm on the teaching of foreign and second languages has been considerable, and today many teachers seem to agree on a more communicative approach to language teaching, allowing the learners rich opportunities to use the second language in different types of communicative activities in the classrooms. Language is no longer seen as merely a set of structures but as a means of communication through which people can encode their messages and perform various language functions. Teachers now encourage their learners to communicate in the new language and to find their way by the use of various kinds of communication strategies. The focus is on process, i.e. the generation of new utterances, rather than on product, i.e. the production of linguistic structures. An important function of teachers’ questions in such classrooms should be to initiate communication and to inspire and support the learners to make use of their interlanguage system in various communicative situations. The questions should trigger a creative production of utterances as opposed to the mechanical reproduction of structures in the behaviouristic framework.

1. Aim of the paper

In this paper we will discuss the role of questions in second language teaching, more specifically, how well different typologies of questions can account for the range of learner responses to different types of question. Here we will consider both qualitative and quantitative aspects of such responses. Our empirical data are collected from 9 audio-taped lessons of Swedish as a second language (SSL) for adult learners and contain a total amount of 560 questions.
2. Question typologies

The concept of question is ambiguous. In this context, we restrict our discussion to those questions that are asked in order to elicit some kind of verbal response from the interlocutors. Consequently, rhetorical questions and directives formulated as questions are not taken into account in this particular framework.

The typologies presented here are based on the form/function, cognitive level, communicative value and communicative orientation of the question.

2.1. Form/function

One could perhaps argue that the most obvious and clearcut classification of questions would build upon the form of the questions. In fact, there is no way of isolating the form from the function in such a classification since the form of a question in Swedish, as well as in many other languages, is very closely linked to its response possibilities. Ahrenberg (1987) presents a taxonomy which is built upon three major classes of questions in Swedish, nexus-questions, alternative questions and X-questions. Within these three major classes there are different subtypes.

A *nexus-question* as defined by Jespersen (1924) is a question by which "the speaker wants to have his doubts resolved whether it is correct to connect this particular subject with this particular predicate" (303). In Swedish, this type of question is characterized by the finite verb in initial position followed by the subject in the unmarked form. (År Pelle sjuk? "Is Pelle ill?") Non-inverted questions and fragments can also be used as nexus-questions, which is illustrated in Figure 1.

*Alternative questions,* according to Ahrenberg, "can be characterized with reference to the fact that they contain a disjunction of two or more specifications of the same domain" (95). (År Pelle sjuk eller frisk? "Is Pelle ill or well?").

In *X-questions* we have an unknown "quantity" like in an algebraic equation. Jespersen therefore suggested the use of the symbol X for the unknown and the term X-question for questions asked to find out what the X stands for. In Swedish this type of question is initiated by an interrogative word or phrase equating the "X" followed by the finite verb. (Vem är sjuk? "Who is ill?"). These questions can also occur without inversion, as fragments, and by leaving a "blank" for the answerer to fill in, as can be seen in Figure 1.

A modified version of Ahrenberg's taxonomy of interrogative structures can be summerized as follows:
In a study by Long (1981) conversations between native speakers of English (NS-NS) were compared to conversations where one interlocutor was a non-native speaker (NS-NNS). One of the features that was investigated concerned the forms of the questions used in the different interactions. The results show that the frequency of inverted nexus-questions was more or less the same in NS-NS interaction as in NS-NNS, whereas the inverted X-questions were far more frequent in the NS-NS (49%) interaction than in the NS-NNS (33%). The most frequent question type in conversations where a non-native interlocutor was involved was uninverted questions (37%). These results, however, are difficult to interpret since the questions in NS-NNS conversations originate both from native speakers and non-native speakers. In the case of the native speakers one could assume that these constructions were used to facilitate learner participation, while the use of uninverted questions by language learners is more likely to indicate a certain stage in their interlanguage development. Therefore it is impossible to compare and evaluate the proportion of inverted vs. uninverted questions in NS-NS discourse with NS-NNS discourse on the basis of these results.

In foreign and second language teaching the X-questions are probably favoured by
many teachers on the assumption that they generate longer learner responses than nexus-questions, which can be responded to by a single ‘yes’ or ‘no’. To our knowledge, no investigations have been carried out to show that this is necessarily the case. In our data the proportion between different forms of questions is 44% nexus questions, 3% alternative questions and 53% X-questions.

2.2. Cognitive level

Another way of classifying teacher questions is on the basis of the logical operations required in order to answer the questions. Cole and Williams (1973) have modified a category system originally developed by Gallagher and Aschner (1963) to classify different operations of intellect. Ranging from the least to the most complex operations, they propose the following primary categories:

I. Cognitive memory
II. Convergent thinking
III. Divergent and evaluative thinking

I. Cognitive memory operations are those that only require the reproduction of information. The following are examples taken from a SSL-classroom:

9. Hur gammal är du, Ali? (How old are you, Ali?)
10. Vad är motsatsen till vid? (What is the opposite of wide?)

II. Convergent thinking represents the analysis and integration of given or remembered data within a tightly structured framework. We find an example of that in the second teacher question in the following dialogue:

11. T: hur lång är du, Paul? (T: how tall are you, Paul?)
   L: ungefär ett meter en meter meter åttitire centimeter tror ja think.)
   T: ja lyssna pa mej "ja e en å sjuttifem ungefär" hur lång e du? how tall are you?
   L: ehh en å åttitire
   T: yes listen to me "I am one and seventy-five more or less"
   L: ehh one and eighty-three)

III. Divergent and evaluative thinking is stimulated by questions which permit the individual to generate data freely and independently from an individual or personal perspective. Evaluative thinking has to do with judgement value and choice:

12. T: om dina barn slåss vad (T: if your children are
skulle du göra då?  
(fighting what would you do?)

13. T: tror du att de har nånting me föräldrar
rarnas ålder att göra om dom e auktoritära eller
demokratiska  
(T: do you think it has anything to do with
the age of the parents whether they are
authoritarian or democratic?)

In a survey of North American studies of teachers' questioning practices, Gall (1970) concludes that about 60% of teachers' questions require students to recall facts while 20% require students to think. The remaining 20% are procedural questions.

Even if little research has been carried out so far to establish the relationship between the cognitive level of teachers' questions and the cognitive level and other features of students' responses, some results indicate a strong correspondence between question and response level. In the studies by Dillon (1981) and Smith (1978) reported on in Brock (1986), the findings suggest that responses to questions at the level of cognitive memory are shorter than responses to higher level questions. In a study by Cole and Williams (1973), where data were gathered from social studies, science and health lessons in grade 2 to grade 6, the results show a strong positive correlation between cognitive level of teachers' questions and cognitive level, length and syntax of students' responses. To our knowledge no studies of this kind have been carried out so far in second language classrooms.

2.3. Communicative value

A distinction which is closely interlinked with the notion of cognitive level is the one between "known information questions" (also termed pseudo-questions, exam questions, test questions, display questions) and "information seeking questions" (genuine questions, real questions, referential questions). We discuss this distinction here in terms of the communicative value of the answer to the questions. In a classical article by Mehan (1979) the two types of questions are described in the following way:

When a known information question is being asked, the questioner already has the answer, or at least has established the parameters in which a reply can properly fall. The questioner is testing the knowledge of the respondent. The respondent to a "known information question" is placed in the position of trying to match the questioner's predetermined knowledge, or at least fall within the previously established parameters. When, in contrast, "information
seeking questions” are being asked, the questioner does not have the information, assumes that the respondent has the information, and has an immediate need for the information (285-86).

An important difference, as Mehan points out, between the two types of questions can be seen in the reaction to the anwers. Answers to known information questions are followed by evaluations (14) whereas answers to information seeking question are followed by acknowledgements (15):

14. Speaker A: What time is it, Ah?
   Speaker B: 2:30
   Speaker A: That’s right!

15. Speaker A: What time is it, Ali?
   Speaker B: 2:30
   Speaker A: Thank you/Already?/Oh my God!/Really?

The absurdity of the first sequence in any other context but a teaching situation illustrates this very special use of questions, which is typical of classrooms all over the world.

In a study by Long and Sato (1983), questions asked by teachers of English as a second language and questions asked by native speakers in conversations with second language learners were compared. 51% of the classroom questions were known information questions whereas hardly any questions of this kind were found in the native/non-native speaker conversations. The information seeking questions constituted 76% of the conversation questions and only 14% of the classroom questions.

In our data we have found great differences between different types of activities in this respect. In a lesson during which the learners were asking questions about a text, 59% of the questions were known-information questions, while during a free discussion with the same group of learners only 17% questions were of this kind.

In another study by Brock (1986) the results showed that responses to information seeking questions were significantly longer and syntactically more complex than responses to known information questions.

2.4. Communicative orientation

In second language classrooms the second language is not only the goal of learning but also the medium through which the language is taught and the medium of communication between teacher and learners, as well as among the learners. It is only natural that in a situation like this, where the medium actually is the mes-
sage, communication is often focused upon the language itself. In an article on the teaching of communication, Butzkamm and Dodson (1980) propose the term medium-oriented for communication focused mainly on language. Communication around real life topics they call message-oriented. It is a well-known fact that many of the questions asked in second language classrooms are medium-oriented, aiming at making the learners produce correct linguistic responses although they are often disguised as message-oriented. These questions also tend to be known-information questions since the teacher is the one in control of the language and the information about the language.

Stevick (1976) makes a distinction between productive and reflective language production and includes all kinds of language drills as well as the retelling of stories, answering questions about a dialog, discussing a reading section etc. in the latter category. By contrast, it is characteristic of productive performance that the learner "starts with something that he wants to say and with a person to whom he wants to say it. He then draws on the models that are available within himself, in order to fulfill his purpose" (107).

The distinction between medium-orientation and message-orientation is in no way a clear-cut one and therefore the two orientations should be seen as extreme poles on a continuum rather than absolute opposite categories.

| MEDIUM—X—X——X——X——MESSAGE |
| 16a,b | 17 | 18 | 19 |

Figure 2. The continuum of communicative orientation

Examples:

16a. Vad är motsatsen till ‘vid’? (What is the opposite of ‘wide’?)
16b. Vad heter ‘vid’ på spanska? (What is ‘wide’ in Spanish?)
17. Ar det en buss eller en gitarr? (Is it a bus or a guitar?)
18. Vem är längst i klassen? (Who is the tallest person in the class?)
19. Hur är förhållandena i Chile? (How are the conditions in Chile?)

(16a.) above is a known-information question about the target language with a
clear medium orientation. (16b.), however, is an information-seeking, medium-oriented question about the L1 of one of the learners. (17) is a medium-oriented question in disguise, which superficially might be regarded as message-oriented. In this case the absurde alternatives given reveal the true identity of the question. (18) is classified as being more medium-oriented than (19) since the former question is asked in a context where the teacher wants to expose a specific structure.

It is also the case that what was meant to be medium-oriented by the teacher could be treated as message-oriented by the learners and vice versa (cf. Gustavsson, 1988). In the following example, the teacher asks the learners about their weight, height and hair colour during a lesson on the comparison of adjectives. Although it is the form rather than the content of the answer that is focused on here, the teacher, for pedagogical reasons, has chosen adjectives by which learners in the class can be compared to make the presentation more learner-centred and to be able to avoid known-information questions about objects in a picture. The learners, however, get more involved in the conversation than was perhaps intended. They discuss the message and ignore the teacher’s medium-oriented questions and thus manage to change the orientation of the discourse:

20. T: hur säger man de? Miriam har kort hår å Alfonso har också kort hår/ungefär ... ?
   (T: how do you say that? Miriam’s hair is short and Alfonso’s is short too/almost ... ?

L1: samma
L2: lika
L3: dom har
L2: lika kort
T: just de dom har lika ...
L4: LIKA KORT
L5: MIRIAM HAR kortare
L3: korta hår
L6: tror inte
L5: tror inte?
L6: man drar inte
L3: ja bryr mej inte om de (SKRATTAR)
L5: Miriam / Miriam kan du dra ut häret? / dra ut lite?
L6: of (SKRATTAR)
L2: ooooj de blev fel här
L4: ja ja sager de

T: that’s it it is as ... ?
L4: AS SHORT
L5: MIRIAM’S is shorter
L3: hair is shorter
L6: don’t think
L5: don’t think?
L6: one pulls not
L3: I don’t care
(LAUGHS)
L5: Miriam / Miriam can you pull you hair? pull it a little?
L6: I say (LAUGHS)
L2: oh dear we made a mistake here
L4: yes that’s what I say
Our data show that discussions about the target language itself can be as interesting and animated as any other discussion – a fact that has to be taken into consideration when questions with different communicative orientations are evaluated.

3. A multidimensional model for the classification of questions

As we have seen, there are dimensions besides the form/function distinction that have to, be accounted for in a model for the classification of questions in second language classrooms. For the purpose of establishing a correspondence between question type and answer, we have chosen to base our analysis on a multidimensional model, where features referring to cognitive level, communicative value and communicative orientation are used in the characterization of the questions. The form/function classification can be made on the basis of the formal structure of the question, whereas the feature analysis must be built upon semantic, communicative and contextual considerations. Although the feature characterization of questions that we propose consists of a combination of distinctive features from a binary system, the values should not be looked upon as absolute clear-cut values, but rather as marks of orientation on a continuum ranging from one polar end to the other. The system of distinctive features is used in the following way:

COGNITIVE LEVEL - Questions classified as being at a high
cognitive level are marked [ + COGN]
- Questions classified as being at a low
cognitive level are marked [- COGN]

COMMUNICATIVE VALUE
- Questions classified as information
  seeking are marked [ + COMM]
- Questions classified as known information
  questions are marked [-COMM]

COMMUNICATIVE ORIENTATION
- Questions classified as message oriented
  are marked [+MESS]
- Questions classified as medium oriented
  are marked [+MED]

Examples from our data:

21. Vad heter "bok" i pluralis? (What is the plural of "book"?)
   - COGN
   - COMM
   +MED

22. Bodde du i Santiago? (Did you live in Santiago?)
   - COGN
   + COMM
   + MESS

23. Vem är längst i klassen? (Who is the tallest person in
    the class?)
   (-) COGN
   + COMM
   + MESS
   + MED

24. Kan man saga "Bolivia lider av diktatur"? (Can one say "Bolivia is
    suffering from dictatorship")
   - COGN
   + COMM
   +MED
25.
Vilket system skulle du välja om du hade barn? (Which system would you choose if you had children?)
+ COGN
+ COMM
+ MESS

Examples 21-25 illustrate different combinations of features. In the context where (23) occurs the teacher wants the learners to produce a certain structure. It is a question typical of the language classroom, with the teacher focusing on a certain message, i.e. how tall the learners are, to illustrate a certain structure, i.e. the superlative form of the adjective. (24) is a medium-oriented question with high communicative value, asked by one of the learners. The last question (25) might be an example of an optimal combination of features according to this model. A corresponding information seeking medium-oriented teacher question is much harder to find, since teachers usually know the answers to questions about the target language. In small group activities, however, information seeking questions do occur in our data, when learners working together ask each other about the target language. In this context medium-oriented questions very often only require the recall of a word or a phrase, hence there are only few examples of questions of higher cognitive levels. The following example is taken from a pair-work activity:

26.
L1: (...) man kan inte sätta "ska stå" tror ja
L2: varför? dom står!
+ COGN
+ COMM
+ MED

(L1: (...) one cannot say "shall stand" i think
L2: why not? they are standing)

There are other examples of "optimal" medium-oriented learner questions in our data. They occur quite frequently when the learner asks the teacher for an explanation, as in the following example:

27.
L: när man kan man använda "ställer"? (L: when one can one use "put")
+ COGN
+ COMM
+ MED
4. Discourse structure

In our data we have found, not very surprisingly, that the teacher's interest and involvement in the learner's response as indicated through feedback signals and follow-up moves, may be of great importance for the quantity and quality of the learner response as a whole. A closer look at the response following, for example, the question in (25) reveals that it extends over several turns. Consequently the whole sequence must be taken into account when analysing the relation between question and response.

According to Sinclair and Brazil (1982), classroom interaction is characterized by the following moves:

Initiation (I) – Response (R) – Follow-up (F)

A classroom exchange with a characteristic distribution of moves is one where the teacher both initiates and follows up, while the learner responds. Of course, this interactional structure has an immense impact on the distribution of questions, since questions mainly fit into teacher moves.

A discourse-based analysis also calls for a distinction between initiating and follow-up questions. When analysing recorded lessons in Swedish as a second language, 61% of the teacher questions were classified as initiating questions and 39% as follow-up questions. This means that there were 0.64 follow-up questions to each intitiative question. The uninverted nexus questions constituted 30% of the total number of nexus questions. With one single exception, these occurred only as follow-up questions and constituted no less than 57% of these questions.

Follow-up questions often function as conversational adjustments by means of which the interlocutors ask for clarification and confirmation and check comprehension. By using those questions the interlocutors can negotiate instances of non-understanding that occur in the discourse. In conversations where non-native speakers are involved, the discourse is often interrupted by such instances of non-understanding, and negotiation of meaning is crucial to the success of the interaction. By the use of follow-up questions both interlocutors may adjust the discourse in search for an optimal level of understanding where mutual comprehension can be reached.

5. Negotiation of meaning

Varonis and Gass (1985) propose a model for the negotiation of meaning where negotiation sequences are embedded in the main flow of conversation. According to this model, follow-up questions can be seen as initiators of embedded sequences. The following structure: I + R (I + R) + F, is illustrated by an example from a
SSL-classroom:

28.

T: hur e ’e där du kommer ifrån i Turkiet / vicken metod använder man där når man uppostrar barn e ’re också den auktoritära? (I)  
(T: what’s it like where you come from in Turkey? which method is used when you bring up children? is it also the authoritarian? (I)

L: ja de varierar (R)  
L: well it varies (R)

T: de varierar? hur då? (embedded I)  
T: it varies? in what way? (embedded I)

L: jo ibland föräldrarna slår barnen ibland dom uppostrar demokratisk familj / de varierar man kan inte säga nånting (embedded R)  
L: well sometimes the parents hit their children sometimes they bring up democratic family / it varies one can’t say anything (embedded R)

T: de firms båda metoderna (F)  
T: both methods are used (F)

When comparing our data from different SSL-classrooms we find great differences in the degree of negotiation due to different teaching styles as well as different teaching activities. In a comparatively free discussion, like the one from which the transcript above is taken, we found a high degree of negotiation as measured in percentage of turns initiating negotiation (16%). In this free conversation, 43% of the questions are follow-up questions. A comparison with a more controlled lesson, where a grammatical structure was presented, shows that the latter had a much lower degree of negotiation (8%) and also fewer follow-up questions (35%). It has to be pointed out, however, that the teachers perform a great deal of the negotiation work in all the teacher-fronted activities that we have studied, and that it is only by engaging in different small group activities that the learners get any real chance to actively practice negotiation routines.

6. Learner questions

This leads us to some concluding remarks on learner questions. Although the variation in our data is considerable in this respect, depending on teaching style, activity type and learner personalities, a general conclusion is there are few learner questions in teacher-fronted classrooms. 17% of all the questions in our data are learner questions, and in the most tightly structured lessons there are hardly any learner questions at all. 53% of all the learner questions are follow-up questions, which means that very few initiatives are taken by the learners by means of questions. Since one of the most important functions of questions is to initiate...
discourse and keep conversation going (cf. Holmes, 1985), the learners' possibilities of developing their interlanguage in verbal interaction with native speakers are dependent on their ability to produce questions in the target language. As we have seen, the possibilities of training this ability in traditional teacher-fronted activities are very restricted, partly because of limitations due to the interactional structure (cf. Håkansson, 1983). As is pointed out by Goody (1978), the traditional role of the teacher has been associated with respect and obedience, and although many relations in society have changed towards equality and democracy, status differentials are still preserved in many classrooms. This means that questions from students will tend to function as questions from subordinates to superiors and may be perceived as threatening by the teacher (cf. Goody, 1978:42). Teacher questions, on the other hand, tend to be perceived as examination questions used by the teacher to control the learner.

The teaching of Swedish as a second language to adult immigrants is organized within a tradition for adult education that is built upon democratic principles and respect for the individual participants and their prior experience and knowledge. It is quite clear, however, that the traditional pedagogical interaction pattern still rules in many of these classrooms. This most certainly hampers the learners' possibilities of testing their hypotheses about the language through practice in asking questions and initiating discourse.

When looking at learner questions in our data we made some interesting observations confirming the statement made earlier that learner questions are perceived as odd, not fitting into the traditional pedagogical interaction pattern. First of all, we found that some of the learner questions were ignored by the teacher. Secondly, some of the learner questions were introduced by some kind of pre-utterance with the function of asking permission to ask a question. Finally, some of the learner questions were received with an embarrassed laugh by the teacher, indicating that something quite unusual and unexpected was taking place.

7. Conclusion

In this paper we have discussed different aspects of teacher questions. The underlying assumption is that a creative production of utterances in the target language is favourable to language acquisition, and that questions which generate such production should be encouraged. A multidimensional model is proposed by means of which such questions can be characterized. We intend to use this model in our research on communication in SSL-classrooms to delve deeper into the role of teacher questions and the correspondence between different types of questions and the responses they give rise to.
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THE ANALYSIS OF LEARNERS' QUESTIONS AND QUESTIONS-GUIDED GRAMMAR INSTRUCTION

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This paper presents some findings and pedagogical implications resulting from a research project on learners' questions in foreign language instruction. Learners' questions, or, more precisely, interrogative reactions, are defined as interrogative acts related to the learning of a foreign language and initiated by the learner with the intention that a competent informer compensate or neutralize what Wunderlich calls "the interrogative situation" (Wunderlich, 1976).

The research project pursues the following aims in the analysis of interrogative reactions: (1) to detect elements for the construction of pedagogical grammars (Raabe, 1982b); (2) to justify and realize the concept of question-guided grammar instruction; (3) to complement the analysis of interlanguage with further data and offer additional explanations regarding cognitive processing and the role of metalinguistic awareness in language learning (Raabe, 1984, 1986a).

An aspect of the second set of aims will be discussed here. Assuming a methodological approach to foreign language teaching that includes explicit metalinguistic phases, this paper shall demonstrate a first proposal of question-guided grammar instruction for selected grammar topics on the basis of an analysis of interrogative reactions.

1. Method

The data corpus includes at present more than 1800 interrogative reactions based on notes from classroom observations and tape recordings from about 400 lessons in French as a foreign language of one and a half hours each, given by a

*) I am indebted to Donald Goodwin for the translation of the text and for his helpful comments.
number of different teachers. The students are native speakers of German taking beginning classes in French; most of them are between 19 and 25 years old and have generally had about seven years of English at school. The courses are elementary courses open to students of all subjects at the university, as well as reading courses for students of history.

For the sake of precise interpretation, the situation in which each interrogative reaction occurred (learner's current activity, text book lesson under study, current oral input) was also noted.

In ambiguous and unclear cases, the interpretation of the interrogative reaction was communicatively validated. In order to assess the extent to which the interrogative reactions were representative of the group as a whole, a measure of identification was taken. Identification was measured by the teacher asking the students how many of them could identify with a given interrogative reaction. When such direct questioning was not possible, the teacher was asked after the class to estimate how many of the students would identify with each interrogative reaction (Raabe, 1986a). Furthermore, the learners were questioned on their evaluation of their own and of their fellow students’ questions and of the teachers’ answers (Raabe, 1982a). For selected grammar topics, a question-guided procedure was attempted: the students were presented with grammar synopses or brief texts specially prepared to elicit interrogative reactions, and they were encouraged to ask questions in order to actively uncover rules underlying the presented material.

2. A rationale for question-guided grammar instruction

Unlike the view exposed by Krashen that "explicit teaching of rules [is] not relevant to language acquisition" (1981:1), a question-guided approach to grammar teaching presupposes a constructive role for language instruction with a focus on the language itself, i.e. for metalinguistic and metacommunicative activity. For the adult learner, comprehensible input alone does not seem sufficient for acquisition to take place. Rather, in order to process input not only for comprehension but also for integration into the interlanguage system, linguistic information has to be focused to be available for further processing and retention in long-term memory. Whether the articulated knowledge, which is one outcome of meta-talk (Faerch, 1985) in the classroom, is directly available for language use, is a mute point; however the assumption is that meta-talk also provides an occasion for analysed knowledge to develop, i.e. knowledge that is requisite for creative language use (cf. Bialystok, 1981 for different types of linguistic knowledge). Unlike traditional grammar teaching, where occasion and content is determined by the teacher, grammar instruction based on learners’ question is a learner-centred approach where the students determine when they feel it useful to close a gap in their FL knowledge by eliciting explicit metalinguistic information from the instructor (or a fellow student). Granted that we do not know how exactly such information contributes to language acquisition, an express request by the learner at least is indica-
tive of her interest and metalinguistic readiness to perceive problem sources in the presented input and deal with them reflectively.

The pedagogical concept of question-guided grammar instruction can be outlined as follows: The basis for metalinguistic instructional phases is grammatical material that has previously been demonstrated to be suitable for questioning. In order to systematically support the learners in establishing relevant rules, they are encouraged to ask questions based on their own analyses of the foreign language material, preferably in order to test previously formed hypotheses. By this procedure, learners are expected to collaboratively establish the rules they are (metalinguistically) ready for and which at the same time are in accordance with the syllabus. To round off the question-guided phase, the information thus gained is integrated (by the teacher) in the complex of pedagogic-grammatical rules that form the object of the lesson and, if need be, complemented by information not requested.

Question-guided phases in grammar teaching can further be supported by the following considerations:

- Under the assumption that adult language learning primarily is a controlled cognitive task, questioning, which is characteristic of demonstrated stages in child development, could also have a beneficial effect on adults' learning, though under different conditions

- The process of questioning itself can be understood as part of a (metalinguistic) learning process.

- Interrogative situations imply a partial reactivation of the learner's previous knowledge, thus providing a condition of cognitive readiness to take in and integrate new information.

- An interrogative reaction focuses the teacher's attention and input on the current learning needs of individual students, with the alleged positive effects such individualized instruction entails.

- Good retention can be expected because (a) the learners determine their levels of reflection themselves (see the patterns of interrogative reactions in 4. below); (b) their level of attention is likely to increase or at least not to decrease. (B) has been preliminarily corroborated through an additional questionnaire study, administered to 107 of the learners. On the item "Your own attention when others ask questions", the following results were obtained:
  
  same as before: 33.6%
  increases 50.5%
  reaches its maximum: 1.9%
  decreases somewhat: 11.2%
  decreases considerably: 0%
  no response: 2.8%.
Whereas there is evidence that attention decreases in traditional grammar teaching (Cohen and Aphek, 1981), the students' self-reports indicate that the opposite is true of grammar instruction initiated by questioning: over half of the learners (52.4%) report to be more attentive, a third of them do not perceive a change in attention.

- In subject matter instruction, it was noted long ago that student-directed approaches are more effective than teacher-guided procedures (Campbell, 1964). Question-based grammar teaching applies this general educational principle to foreign language teaching. Moreover, it can be viewed as a further implementation of the principle of learner-centredness in language teaching, which so far has been restricted to providing meaningful communication in the classroom (rather than including learner-initiated meta-talk).

- In addition to questions conforming to the teaching goal, and thus predictable by the teacher, questions related to learners' idiosyncratic responses to the material (which possibly are more relevant for the individual student) can also be accommodated (Raabe, 1986b).

- In a traditional teaching sequence based on a textbook, the question phase smoothly follows the text presentation without problems of transition, thus insuring continuity in working with issues that had occurred in the previous phase.

- Teaching goals established from the instructional perspective are complemented by aims determined by the learner. The learners' own goals, and their cognitive and metacognitive strategies activated to achieve them, provide the larger context needed for the learners to understand and classify the material at their current learning stages.

The increased level of attention seems to be of special importance against objections to question-guided instruction, e.g. that teaching might lose its focus, that question-guided phases are more time-consuming than teacher-controlled activities or that learners who do not actively ask questions might be neglected.

3. An example: negation in French

One way of empirically identifying "inquirable" areas of grammar is by examining to what extent questions on different grammatical issues correspond to the intended teaching goal. I have shown elsewhere that possessive pronouns are such an "inquirable" matter (Raabe, 1982a). On the one hand possessive pronouns elicit interrogative reactions that are consistent with the syllabus, on the other hand they lend themselves well to individualized questioning so that learner-oriented problems come to the fore.
In this paper, the teaching objective chosen to illustrate interrogative reactions as an interactive learning procedure is basic aspects of negation. It will be demonstrated that learners respond to the presented material by asking questions that are consistent with inherent aspects of the grammatical point under study (referred to as "objective" questions in the following), as well as questions revealing a set of additional aspects that are relevant for individual learners in their process of conceptualising forms and functions of negation (referred to as "subjective" questions).

The teaching objective 'negation' was divided into the following sub-goals:
(a) the form *(ne .... pas)*
(b) its placement when combining with verbs in the present tense
(c) differences between spoken and written French.

The learners were already familiar with the expression pas *mal*. The question reactions were elicited by a brief spoken and written text of identical content, containing several negated sentences that could be translated by *not*.

Among the interrogative reactions, the following serve to illustrate "objective" questions, conforming to the teaching goal:

(1) Does *pas* always immediately follow the verb? In questions, too?
(2) It says *ne* here (in the written text), can you hear it, too?
(3) Is *ne* always left out in spoken French?
(4) If I want to say *ne* with *m'intéresse?*, where do I put it? Is it *je me n'intéresse pas*?
(5) What is the negation of *il y a*?

These interrogative reactions enable the instructor to deal with aims (b) and (c), giving additional differentiation as requested by the learner in (1) and (3). Questions (6) and (7) indicate more subjective, idiosyncratic problems that conform to the teaching aim:

(6) Isn't *ne ... pas* a double negation?
(7) In spoken French do you say *[ilzopa]?*

The learner's previous knowledge of pas *mal* led to the double negation hypothesis in (6), whereas the hypothesis that *liaison* is blocked by a latent *ne* is tested in (7). Both hypotheses can be used by the instructor to clarify further aspects of the semantics of negation and the possibility of omitting *ne*.

The following examples illustrate "subjective" questions, relating to sub-goals of the teaching objective established by the learners themselves:

(8) Can the French form for *not* be used without expressing negation?
(9) What do you say in French when you don't negate the verb but something else?
(10) How do you say *kein* (German prenominal modifier, 'no')?
(11) How do you say *nichts* (German indefinite pronoun, 'nothing')? (12) How do you say *niemals* (German temporal adverb, 'never')?

Examples (8) – (12) indicate that the learners extend the instructor's intended teaching objective according to their own inferences and associations in order to attain a more satisfactory global understanding of negation. As demonstrated in Raabe (1986a), beginners base their "subjective" questions primarily on their native language or a foreign language previously learned. As regards their learning function, subjective questions do not appear to relate directly to internalization and language use but to support the learners' conceptualization of negation, thus indirectly promoting the internalization process.

In the current stage of the learners' interlanguage development, interrogative reactions (1) to (12) elicit sufficient information for the metalinguistic attainment, differentiation and expansion of the grammatical complex 'basic aspects of negation'. Of course, this set of interrogative reactions is not necessarily representative of all groups of learners. Nevertheless, it can be hypothesized that the questions the learners feel a need to pose delineate a cognitive field in their interlanguage knowledge. It remains to be shown if such a cognitive field has a positive influence on the subsequent practice of automatic use of the foreign language structures.

4. Basic patterns of interrogative reactions

Since "inquirability" depends not only on the type of grammatical area but also on the way this area is presented to the learners, an analysis of interrogative reactions has to include an interpretive approach suitable to identify features of texts that provoke interrogative reactions. On the basis of such information, the teacher is in a position to construct brief, question-provoking texts suitable for use in question-guided grammar instruction. The function of these texts is to create (standard) question situations that enable more learners to participate in formulating questions than would be the case with texts not specifically designed for that purpose.

Table 1 illustrates the interpretive approach by listing a few frequently occurring basic patterns according to which the learners select items for questioning when dealing with texts in the foreign language.
Table 1: Basic patterns of interrogative reactions

<table>
<thead>
<tr>
<th>Item Selection</th>
<th>Question</th>
<th>Situation</th>
<th>Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. global lack of knowledge; item a selected</td>
<td>a</td>
<td>▼ global explanation</td>
<td>?</td>
</tr>
<tr>
<td>(13) (Input: <em>qu'est-ce qu'il</em>)</td>
<td>Why does it say <em>qu'il</em>, where does <em>qu'</em> come from?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1b. lack of knowledge regarding some aspect of item a; item a selected</td>
<td></td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>(14) (Input: <em>Qui est-ce?</em>)</td>
<td>When do you use a hyphen?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1c. lack of knowledge; several items a,b ... n selected for comparison</td>
<td>tc</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>(15)</td>
<td>Do <em>moi</em> and <em>je</em> both mean 'I'? How exactly are they used?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Knowledge of alternative aspects x, y; item a selected</td>
<td>a</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>(16)</td>
<td>Does ‘irregular’ refer only to person or to tense as well?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(17) (Input: explanation of <em>chez</em>)</td>
<td>In the case of ‘cinema’, is it <em>chez</em> or <em>à</em>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Learner's hypothesis on selected item a</td>
<td>a</td>
<td>hypothesis testing,</td>
<td>request for explanation</td>
</tr>
</tbody>
</table>
(18) (Input: ommission of e) e is replaced by an apostrophe. Does that come with all vowels?

IV a. Learners' hypothesis; a hypothesis
    item a existing < - > new request for
    selected hypo- > < -inference explanation
    thesis ▼

(19) (Input: Qui est-ce?)
Why is ce not pronounced? Is final e never pronounced?

IV b. Knowledge of tc testing of
    L1 or L3; / \ interlingual
    item a, a' a' hypotheses,
    selected [rule] < - > [rule] request for
    L1/L3-- > < -L2 L2 rules
    ▼

(20) (Input: Qui est-ce que?) Are questions in French constructed as in German?

Under the heading 'question situation' the development of the problem (symbolized by '?') after item selection is presented. In Ic, the first pattern displaying a relatively complex type of question, the learner arrives at a hypothesis about the relationship between two or more items (equivalence/identity, < - >, or contrast, --> <->) by way of an intralingual tertium comparationis (tc). (Note that IVb involves an interlingual tc). Such configurations, based on formal or content oppositions between two items in a text that can be interconnected via a tertium comparationis, can be referred to as standard question situation. In IVa the opposition is between a hypothesis previously established by the learner, and a new (correct or incorrect )hypothesis the learner has arrived at by means of induction from the text under study. Particularly in the case of pattern IV, further subcategorization is needed in terms of types of learners' previous knowledge (rules of L1, L2, L3; general knowledge of grammar, knowledge of errors) and in terms of text types (written or spoken teaching materials, teacher's and learners' oral input).

The sequence in which the patterns are displayed reflects increasingly complex cognitive activity in the learners' processing of the presented text. Whereas la involves no more than a selection operation in L2 (perhaps subsequent to unsuccessful searching for solutions in the text), IVa requires at least operations of
identification, induction, comparison, and comparative evaluation. As far as instruction is concerned, this difference implies that in la, the teacher has to provide the learner with "complete" information about the inquired item in order to fill the gap in her interlanguage knowledge. IVA, on the other hand, requires more specific attention to the learners' underlying operations and previous knowledge.

From the above discussion, the following guidelines for the construction of question-provoking texts seem advisable:

(a) Opposing items of the relevant grammar point should be presented in juxtaposition.

(b) The learners' previous knowledge should systematically be taken into account, since the text can yield aspects of opposition or identity in relationship to such previous knowledge.

(c) The point of grammar should be textualized and conceptualized with respect to its relevant properties to facilitate the formation of grammatical classification and higher-level questions.

It seems that the success of question-guided grammar instruction is largely determined by the extent to which the texts used for this purpose are consistent with these criteria.

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INNOVATION IN FOREIGN LANGUAGE TEACHING’)

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Overview
This paper deals with the problem that new trends in linguistics and language teaching theory do not automatically lead to innovation in teaching routines.1) Resistance to change hampers innovation. I deal with this topic in the first section. In the following sections, I discuss two different types of resistance. The first has to do with structural aspects of pedagogical action in school and will be developed at length. The second is concerned with psychological aspects of innovation and will be summarized rather briefly.

1. Preliminary remarks

1.1. A historical view of teaching methods

Research on foreign language teaching and learning2) has been closely connected with the history of innovation in language teaching. New developments in linguistic theory and language learning theory have repeatedly fostered new methods in foreign language teaching, for instance: Jespersen and other scholars developed the direct method as an attempt to modernize foreign language teaching in accordance with the linguistics of their time. Structural linguists in the USA invented the audiolingual method. Guberina is the godfather of the audiovisual method. A cognitive approach to modern language teaching was influenced by the emerging generative grammar. Pragmatics and research into language functions have influenced the communicative approach, including the variety marketed by the Council of Europe.

The relationship between a scientific discipline and educational practice has often been described as knowledge transfer from research to teaching. The term ‘teaching methods’ refers to theories and models of instruction that are research based. It is due to this derivational relationship that methods can develop normative power, since teaching procedures in principle can be traced back to the underlying theory which decides what is right and what is wrong. Theories of language acquisition and teaching used to be fairly simple, and therefore methods could emerge as well-defined patterns of teaching activities and techniques.

In the late seventies the world of language acquisition became complicated. Cognitive theories appeared on the scene and described complex patterns of language use and acquisition. As a consequence the normative power of methods as patterns of teaching techniques seemed to be broken and the age of a hundred prospering flowers seemed to have come. While in the case of methods, experts defined what was right and wrong, now the patterning of teaching activities was at least partly defined by teachers themselves.

The trend changed again in the eighties. The renewed interest in methods, as for example suggestopedia, the silent way, total physical response, and the humanistic approach, indicates that there is still a demand for recipes. Yet methods are no longer developed by knowledge transfer from linguistics theories, but from the new age of theories of social interaction and learning.

The succession of methods can easily be shown in periodicals and books on language teaching. What was really happening in the classrooms through the ages of shifting methods is much more opaque. Did teachers really change their teaching according to what the experts said? Did methods have a direct impact on teaching routines? To put it in a more generalized form: Is the change in theories reflected in changed teaching behaviour? Did and do new methods lead to innovation in the school? And if so, in what way? To answer these questions, we have to look for empirical evidence.

The growing body of research into classroom interaction in recent years makes it possible to evaluate changes in teachers’ behaviour on empirical grounds. Classroom research has shown that teachers do not follow well-defined methods but use a variety of teaching techniques. This has often been referred to as the eclectic approach, where teaching activities like those of the grammar-translation method – already criticized by Jespersen nearly 90 years ago – are used side by side with elements of the direct method or communicative exercises. Heterogeneity of teaching activities used is a prominent feature, to judge by classroom research. Another remarkable feature of classroom interaction is that the role of the teacher is still central. Teachers’ interactional styles may have changed, but the majority of studies show that classroom interaction is heavily centered around the teacher. These observations have been confirmed by teacher trainers, who report that the daily routines in schools change slowly.
We have to conclude that the impact of well defined methods on routines of daily teaching has been weak. Language teaching traditions in schools tend to be extremely inert, and as I shall argue, this appears to be due to strong resistance to innovation. In the following sections, a number of reasons for such inertia in language teaching will be examined.

1.2. Methods and method: A crucial distinction

A central distinction in my analysis is between *methods* and *method*. *Methods* are well-defined patterns of teaching techniques. The concept of *method* refers to all the things which really happen in the classroom. Earlier in this paper I have called this the eclectic approach.

The distinction between methods and method is crucial for foreign language teaching, where the development and evaluation of methods has been a permanent topic in books and periodicals. While methods follow the logic of linguistics and/or psychology, method is eclectic. Its structure follows the logic of teaching in an institution. The contradiction between the logic of language teaching methods and the logic of teaching inside an institution is a major source of resistance to methodological innovation.

My arguments are based on empirical studies of classroom research in different branches of the Danish school system. The situation in Denmark may be special. Unlike other school systems, Denmark has no binding national curriculum and teachers have freedom of method. This goes together with a flat power structure – a general feature of politics and society in Denmark. Innovation cannot be enforced by school authorities. Teachers have to be convinced by new educational products and procedures before they are willing to incorporate them into their daily routine. These preconditions strengthen method in contrast to methods, since teachers in Denmark are more in control of their own work than in other school systems. However, a negative effect may be that there is more inertia in a system like the Danish one than in more hierarchical systems.

Yet resistance to innovation is not a specifically Danish feature. It has been described as existing in other countries as well (Hurst, 1983), and the growing literature on classroom research in modern language teaching shows related problems for other school systems (cf. Bolte and Herrlitz, 1986 for the Netherlands, Kasper, 1985, J. Wagner and Petersen, 1983 and J. Wagner, 1983 for Denmark, Lörscher, 1983 for West Germany).
1.3. Models for the relation between research and teaching

According to the model of knowledge transfer, knowledge is produced in research and transferred to foreign language teaching in schools, where it leads to innovation. One example of this model is found in Faerch, Haastrup and Phillipson (1984). Here an "analysis of learner language" is the starting point, leading to "theories of language learning" and further to teaching objectives, selection of content, teaching principles and classroom activities (1984:10f). Changes in teaching are seen as the outcome of new developments in research.

This model runs into serious difficulties when it tries to explain unsuccessful innovation in teaching. It has to fall back on such explanations as: 'inertia results from malfunction inside the institution', or 'it is due to the lack of motivation and ability of the teachers'. The concept of the application of theories is basically the same idea as the model of knowledge transfer: theories are applied to social reality. Unsuccessful innovation is analysed as the faulty application of theories.

As a remedy to unsuccessful innovation, better in-service training of teachers is demanded. This of course is always a good idea, but it will not solve the problem inherent in the knowledge transfer model, namely the idea of application. As long as research in foreign language learning aims at theories about idealized human abilities, and as long as its findings are intended to be transferred to teaching encounters, the problem of deducibility exists, i.e. the conditions for deducing statements about teaching from a more or less clinical theory have to be defined. Strictly speaking, the basic notion of the model of knowledge transfer is idealist.

In this paper I will offer a different approach, based on the distinction between method and methods. Since both follow a different logic, results from linguistics and research on language learning will not fit into the conditions of teaching. In terms of schema theory, methods can be viewed as developing schemata for pedagogical actions. These schemata only cover part of the complex social interaction which is going on in the teaching situation. Method follows a different schema. As a consequence, methods are restructured according to the schema of method, resulting in different forms of innovation than expected from the viewpoint of methods.

Innovation is part of social change; hence models for innovation have to be related to sociological theory. An approach of this kind is suggested by Jakobsen (1988, 1989). She uses the notion 'identity of an institution', i.e. the way the institution conceives of itself, as a basic concept in her argument against idealized models for implementing change. The concept of institutional identity permits description of how the educational goals and tradition of a given institution frame possible changes. Learning in social institutions like schools is always defined in relation to
certain social groups and their goals. Models of innovation have to cope with this. Forced
innovation which is in conflict with an institution's educational identity may lead to what
Hurst (1983:16), in a review of the extensive literature on educational innovation, calls
"token adoption (...) with teachers professing to have changed their practice, but actually
carrying on as before."

My arguments complement Jakobsen's approach. Innovation in foreign language teaching
must be seen not only in relation to institutional identity but also to the interaction and
psychological developments of the agents of the institution. In section 2 I will discuss
interactional aspects of innovation in the classroom and in section 3 sketch a model for a
psychological analysis. Section 2 is based on action analysis, section 3 on Laing's concept
of psychological knots (Laing, 1970).

2. Structural problems of pedagogical action in schools

In this section I will describe the reasons for system inertia which are rooted in
interaction. To begin with, a model based on action theory will be outlined. This
framework will then be applied to the analysis of foreign language teaching.

2.1. A model for pedagogical action

Classroom analysis has emerged from discourse and/or conversational analysis. Typically
it works bottom up, starting by defining acts as pawns in the game of discourse, and
works its way up to higher levels of analysis. In contrast to this, my approach is based on
action analysis and works top down. It is derived from the work of Rehbein (cf. Rehbein,
1977, Ehlich and Rehbein, 1987). To describe the model, an example from outside the
classroom has been chosen.

2.1.1. Basic concepts for the analysis of actions

In a simplified version the model generates a structure as follows: an interaction consists
of different levels of action. A level is constituted by elements of the level below. The
action 'to go shopping' will serve as an example.

For me personally shopping consists of several sub-actions: taking the car out of the
garage, driving to the nearest supermarket, buying things, taking them home. On a
Saturday morning a coffee break and a chat with friends who pass by may be part of the
shopping. These actions again may be complex in the sense that they are composed of
actions on a lower level. Buying things is realized by entering the supermarket, looking
for a trolley, collecting several things, paying for them. Again these actions may be
complex, composed of different physical activities: you can pay cash or write a check or
pay by card. For the present purpose further levels
of action need not be detailed. Action is characterized by goal and function. In the example of writing a check, paying for things bought is the goal. It has a function relative to the higher-order goal ‘shopping’. In my terminology goal is reserved for the intended outcome of an action, while function connects an action with other actions, and refers to a goal on a higher level. If several actions constitute an action on a higher level, they have a distinct function with respect to the higher goal.

At this point it is necessary to distinguish between the agent and observer of an action. Seen from the agent’s perspective s/he normally acts meaningfully, since his/her actions have goals and functions. An observer, on the other hand, has to infer goal and function from the perceived activity. S/he will interpret activities by using contextual information and cultural knowledge.

To sum up the crucial points: According to action analysis, the action at the top level is determined by a goal. In the case of complex actions the next level consists of several actions which together realize the superordinate actional goal. In this way an action may be realized by other actions and may itself have a function for higher-level actions.

2.1.2. The logic of methods

The suggested framework will be used for analysing foreign language teaching, with the intention to bring the functions of teachers’ actions into focus. This goal differs from a discourse-analytical approach to classroom research. According to discourse analysis, the researcher asks what is happening in classroom discourse? Action analysis asks what is happening and why? Approaches based on discourse analysis typically do not interconnect teachers’ intentions with the things that happen in the classroom. The function of the teacher’s activity is seldom reconstructed and – as far as I can see – never evaluated in relation to other data. Often the analysis goes no further than the description of classroom activities and does not connect them to a theory of pedagogical action. In this sense, it is an analysis from the bottom up. By contrast, action analysis examines interaction in the classroom from the top down and in this way results in a description of pedagogical action.

The model has several levels. At the top is the goal of teaching a foreign language. At the next level we define goals which together fulfill the goal of language teaching, i.e. they have a function in relation to the overall goal. These goals are classically the four skills: listening comprehension, reading comprehension, speaking and writing. This level will be referred to as lesson.\(^5\) Each lesson again has sub-goals. The third level contains different types of exercise which implement the goals of the second level. The structure is as follows:
Figure 1: A functional model of foreign language teaching

For exemplification I will apply this model to the teaching of reading comprehension as a sub-goal of teaching English. Reading comprehension has traditionally been trained by several teaching activities (exercises) as for example:

- answering multiple choice questions
- definition of headlines for paragraphs
- answering wh-questions

The presentation of a text precedes the different exercises. Its function is to prepare the exercises that follow. The function of all exercises is the teaching of reading comprehension.

Figure 2: Reading comprehension as a teaching goal

The logic of methods is the selection and sequencing of different exercises in different lessons and sequences of lessons. The ultimate goal of methods is that any activity in the classroom be subject to language learning goals according to
the method chosen. In an action-based model of methods, lessons are clusters of methodologically defined activities which serve the training of language skills Wee listening, speaking, reading writing. A lesson consists of a cluster of different exercises which again are clusters of tasks. Exercises are the central language teaching activities.

Methods have the structure,

\[ \text{Activity A has the function } F \]
\[ \text{U realization of goal } G \text{ because of } T \]

where \( F \) is derived from \( G \), the ultimate goal of foreign language teaching. \( T \) is the linguistic and/or psychological theory which a method refers to. To give two examples:

In the audiolingual method, we can put the following variables into the formula: \( A \) - imitation, \( F \) - automatization, \( G \) = oral production, \( T \) = behaviourism.

In a communicative approach, \( A \) may be paraphrasing a text. This may serve as preparation \( (F) \) for other exercises which aim at free oral production \( (O) \) on the basis of a problem solving approach to language learning \( (T) \).

Looking further at one single exercise we see that it can be implemented in different ways. Questions to the text may be addressed to one pupil with the whole class as audience, or they may be given to several learners for group work. The questions may be written down for homework or improvised by the teacher during the lesson. Hence the analysis has to account for one more level, that of tasks. There is no need to integrate deeper levels of physical actions into the analysis.

Classroom analysis has shown that task giving follows a highly conventionalized structure. The pattern consists of three parts.

1. The teacher formulates the task and then nominates an individual learner.
2. The learner tries to solve the task. This step may have different embedded steps if the learner cannot solve it adequately. Repair of learners' utterances is part of this step.
3. The pattern ends when the teacher accepts the solution. S/he can do this more or less explicitly.

The model thus operates with four levels. From bottom to top these are task giving, exercises, lessons, and teaching of a foreign language.
We can now reformulate the function of methods according to this model. Methods define a specific model for lessons aiming at the teaching of different language skills. Furthermore methods define exercises which implement the goals of the lessons. For most methods the level of task is out of focus. This may be the reason why variation in task giving is highly restricted in classroom interaction.

2.2. *The logic of method*

In section 2.2.1. two examples from my material on classroom communication will be described, focusing on lesson types and exercises (teaching activities). None of these examples are avantgarde teaching, but 'normal' routine instruction. In section 2.2.2. teachers' reasons for the teaching activities chosen will be discussed.

2.2.1. *Examples*

The first example is from the 7th year of English in the first grade of a Danish high school (gymnasium). The period is divided into two lessons. The first lesson is textwork and consists of two parts, the second lesson deals with grammar.

Lesson 1, part 1: A text, prepared by the learners at home, serves as input. Comprehension is checked by means of an exercise: a learner reads a part of the text aloud. The teacher asks questions about the text which are answered by the learner. Then another part of the text is read by an other learner.

Lesson 1, part 2: A new text serves as input. The goal is comprehension of the text. The teacher reads the text aloud. She clarifies the meaning of words in the text and partly translates it. Afterwards several learners read parts of the text aloud.

Lesson 2: The second lesson is on grammar. The learners work with the grammar
book and complete several fill-in and transformation exercises.

This structure of a period is common in the higher grades in the Danish school system 6) Foreign language teaching comprises primarily the reading of texts and training in the comprehension of fairly difficult texts, secondly consciousness-raising about rules of grammar and their automatization through grammar rules.

The second example is from the 5th year of German in the 1st grade of a Danish gymnasium. The period contains one text lesson consisting of three parts.

Part 1: The learners have prepared a text at home and ask questions about unknown words and difficult parts of the text.

Part 2: The second part involves an unknown text. The learners read the text aloud and translate parts of it. The teacher asks content-related questions about the text which check and support reading comprehension.

Part 3: The last part is a teacher-directed interpretation of the text.

Both examples are from classes with high intermediate learners. At this level, the class periods usually consist of one or two standard lessons: on text and on grammar. In my data these two types of lessons are the core of beginner teaching as well. There is a small range of standard exercises:

- reading aloud
- questions on the text (check/support comprehension)
- content questions (interpretation)
- pattern drill-type grammar exercises
- grammar presentation
- translation.

Historically some of these activities derive from specific language teaching methods. Others have 'always' been used in language teaching, i.e. originate from the teaching of Latin, and have been adopted by methods. This is the case for reading aloud, which Jespersen (1904) re-designed by a well-defined methodology (see below). Table 1 relates some frequent exercises to the methods they originally were parts of. The label 'grammar-translation' refers to traditional teaching.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Goal</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>reading aloud</td>
<td>phonetic training</td>
<td>direct</td>
</tr>
<tr>
<td>filling in an element</td>
<td>pattern training</td>
<td>audiolingual</td>
</tr>
<tr>
<td>permuting an element</td>
<td>pattern training</td>
<td>audiolingual</td>
</tr>
<tr>
<td>translating</td>
<td>translation</td>
<td>grammar-transl.</td>
</tr>
<tr>
<td>presenting a grammatical paradigm</td>
<td>memorizing</td>
<td>grammar-transl.</td>
</tr>
<tr>
<td>role play</td>
<td>automatization in interaction</td>
<td>audiovisual</td>
</tr>
<tr>
<td>role play</td>
<td>learning in meaningful contexts</td>
<td>communicative approach</td>
</tr>
<tr>
<td>talking about a text</td>
<td>speaking</td>
<td>direct</td>
</tr>
</tbody>
</table>

Table 1: Relating activities to methods

As can be seen, method combines elements from different methods. Its logic cannot be that of methods, since teachers combine elements from different origins which to a certain extent are incompatible with regard to their theoretical foundations. In many classrooms, audiolingually based automatization drills are used on a par with citations of grammar paradigms from the grammar-translation method and with communicative exercises.

2.2.2. Teachers' explanations for their method

In order to reconstruct the logic of method more accurately, we have to understand the functions of exercises. To this end, I have asked teachers for explanations of the activities used in their teaching. Typically two types of explanation were given: those which explicitly referred to language learning and those which were mostly concerned with the social organization of the class.

Tables 2 and 3 list the arguments given by the teachers for two types of exercise, reading aloud and translation.
<table>
<thead>
<tr>
<th>activity</th>
<th>second language teaching reason</th>
<th>other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>reading aloud</td>
<td>phonetic training</td>
<td>to start period</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to calm down learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to refresh context</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to warm up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to focus attention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to connect several lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>necessary for examination</td>
</tr>
</tbody>
</table>

Table 2: Arguments for using reading aloud

<table>
<thead>
<tr>
<th>activity</th>
<th>second language teaching reason</th>
<th>other reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>translation</td>
<td>to train translation</td>
<td>to check homework</td>
</tr>
<tr>
<td></td>
<td>to clarify the meaning of words</td>
<td>necessary for examination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to check understanding of text and vocabulary</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to calm down students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to focus on text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to refresh context</td>
</tr>
</tbody>
</table>

Table 3: Arguments for using translation

In my data reading aloud is the most frequent activity in the classroom. As mentioned above it is often claimed to serve phonetic training, and thereby ascribed relevance to language learning. Jespersen (1904) suggests a procedure where the teacher reads the text aloud first, giving the learners a phonetic model. The basic idea is learning by example. The interesting thing for my argument is that teachers rarely follow Jespersen’s sequence. Learners often read aloud without first listening to a model. Thus the activity is no longer connected with a learning theory.

Other reasons mentioned by teachers have to do with the organization of learning. There seem to be three types of reasons:

- Reasons connected with the organization of the teaching period. Before the
teacher can start a discussion about a text, all learners have to know what the text is about.

- Reasons related to discipline and the social organization of the class. Attar breaks or even during the teaching period learners sometimes have to calm down.
- Reasons relating to the institution. For instance, reading aloud may be part of the examination ritual.

The same arguments are heard with respect to translation, even if translation is a goal in itself for some teachers. But in general teachers specify the same four types of reasons: language learning, organization of time and of discipline (getting the class to work and keep it working), and examinations. Aspects of organization of time will be discussed in the next section.

2.2.3. Discourse structure of the teaching period

One central problem in the organization of teaching in an institution is the contradiction between the idealized structure of pedagogical action - defined by methods - and the agenda of the teaching period. All teaching activities have to be sequenced in a period of 45 minutes and this has its own dynamics. The structure is indicated by verbal and nonverbal marking (gambits and body movements).

As any communicative encounter, the teaching period consists of three basic parts: an opening, a central part, comprising the language teaching proper, and a closing.

The second and, obviously, longest part again includes several parts (lessons) which in turn are structured into start, middle and end.

The crucial point is the start of an activity, because this is a transition point which has to be marked. Several times during a period the teacher faces the same organizational problem: how to get the whole class to shift attention to a new topic. This can be achieved by foreign language activities, such as reading aloud.

2.3. Conclusion: Interactional aspects of innovation

Methods are systems of action which are structured along a single line of goals. The method a teacher uses is a complex structure which bundles together different interactional structures. Any activity has to fulfill several functions for different goals. Teachers' explanations for their teaching activities make it clear that these activities combine language teaching goals, social goals with respect to classroom organisation and discourse functions, i.e. goals which are derived from the sequencing of activities inside a class period. Method is the realization of foreign language teaching methods in terms of discourse in the classroom and in the institution.
Method is not the application of methods.

We can now take a closer look at the conditions which make elements of methods useful for method, i.e. determine how the teacher selects activities.

New elements may be integrated into method

- if they have a background in one of the methods which are developed for foreign language teaching, i.e. if there is an 'ideological' superstructure which labels the exercise as a meaningful activity in foreign language teaching, and
- if they at the same time can be used for the social organisation of the class.

It appears that the first condition may easily change into a myth. The case of reading aloud shows that language teaching arguments for the use of an exercise may not be valid any more or cannot be valid for the specific form an exercise has in the classroom. There is no doubt for example that reading aloud is used so frequently because it is suitable for classroom organisation.

The integration of new activities into method follows two steps:

1. New activities may be accepted if they are able to fulfil different functions and serve the complex of goals which teachers have. They must be based on new teaching or learning theories.
2. Once accepted, these activities will undergo a process of ideologization, i.e. the explanation for the activities is no longer part of methods. Since methods are norms of action based on scientific theories, the process of ideologization severs this relation. The ideologization of activities is evident if an activity is evidently useful for social organisation in teacher centered interaction, but can hardly be justified by a learning theory. A case in point is the use of translation.

This analysis provides insight into factors which can determine the successful planning of innovation in foreign language teaching. The criteria have to emerge from the teaching situation and not from learning theory or linguistic theory. New activities have a chance of winning a place in the method if they are able to fulfill different goals in a teaching situation. Hence we can conclude that innovation in foreign language teaching will not take the form of a paradigm shift, but will be a smooth replacement of old-fashioned activities by new ones. There is a dangerous element in this process: new activities may lose their potential for change, since they are taken out of the logic of their source, and may therefore end up well integrated in old-fashioned teaching routine.
3. Psychological aspects of innovation

In the previous section I have explained system inertia as rooted in the complexity of interaction. Agents of the institution have to combine several goals in single actions. But it is essential to remember that innovation is more than social and interactionsal changes. Innovation is also contingent on the processes of psychological change in the people involved. Therefore it is necessary to combine the analysis of interaction with that of psychological processes. For this purpose, an approach described at length by A.C. Wagner et al. (1984) will briefly be reviewed. It examines the genesis and disentangling of psychological knots (Laing, 1970).

In this approach, psychological norms are the basic category. Individuals follow norms and evaluate their own and other people's actions in relation to norms. Under certain circumstances norms may petrify into psychological imperatives, i.e. clear-cut definitions about what to do and what not to do, about what is good and what is bad. While norms can be negotiated and violated, imperatives are binding obligations.

Knots emerge when an individual holds imperatives which are incompatible with reality or with other imperatives. Knots are contradictory obligations which cannot be solved ad hoc and trap the individual. If a situation activates contradictory norms, a psychological conflict results. If a situation activates a knot, the individual gets into a psychological dilemma.

A.C. Wagner et al. distinguish between imperatives which are in opposition to perceived reality (as it is now, as it will be in future, or as it has been before), and those which are contradictory to other imperatives. In the first case the individual cannot follow the psychological imperative because reality does not allow it. In the second case one imperative demands a certain action, another imperative another and both actions are incompatible. As A.C. Wagner et al. demonstrate, knots paralyse changes of behaviour. Individuals with contradictory imperatives feel powerless, they are frustrated and not open to change.

The introduction of new methods and teaching techniques may be perceived as necessitating a certain type of teaching. In this case, innovation has taken the form of psychological imperatives and faces the problem of knots. We can distinguish R-knots, I-knots and E-knots:

1. If there is a contradiction between an imperative is derived from a new method and perceived reality in the teaching institution, R-knots will appear.
2. Contradictory imperatives will lead to I-knots.
3. Contradictions between teachers' own experiences and a new method result in E-knots.

R-knots have to do with more or less implicit assumptions of methods about the
context of teaching: often methods are not designed for certain institutions, but are supposed to work "in general". Consequently methods idealize the context of teaching with regard to a number of factors, including the learners' motivation, number of learners, size of classroom, language ability of learners and teachers, and so forth.

An example of an R-knot can be formulated as

I should get every learner to talk much more,
   but that is impossible with 30 learners in my class.

Teachers who work in classes with that many learners, with tables bolted to the floor and without themselves being fluent in the target language, quite naturally perceive a contradiction between institutional reality and idealized presuppositions about teaching contexts in certain methods.

Another type of a R-knot is the contradiction between imperatives derived from a certain method and examinations. Even contradictions between certain methods and official goals of an institution may lead to R-knots. For example the teacher of LSP may be trapped in an R-knot between a famous new method and the learning goals of LSP

   I should get the learners to talk much more,
   but for my learners it is essential to write letters.

\-knots result from conflicting imperatives. One of the best-known examples is what teachers often perceive as an opposition between accuracy and fluency. This \-knot may be formulated as follows:

   I should get every learner to talk much more,
   but then I cannot correct all errors.

In this case both imperatives refer to learners' interlanguage and are perceived as incompatible. This knot is closely related to another perceived contradiction, that of grammar teaching versus teaching of communication.

\-knots may be the result, if teachers are not able to relate a new method to their own learning-biography.

   I should get the learners to talk much more,
   but I learned English perfectly well by translation exercises,
     so why shouldn't they.

\-knots pose a special problem since they hide several traps which complicate disentangling. With respect to the \-knot named here, it may be the case that
teachers do not perceive central factors in their own learning. For example the teacher may have been the only learner in his own class who learned English well, or s/he may have learned English outside school without realizing it.

To undo E-knots it may be necessary to discuss the teachers' self-assessment. This is not an easy task in in-service teacher education, as teachers may perceive a discussion of their own professional attitudes and actions as severe criticism and develop resistance to untying the knot. Or the teacher may feel that s/he is being accused of not speaking the foreign language well enough.

The result of all these knots is the preservation of the status quo and teacher frustration. Old-fashioned teaching will continue, but with lack of satisfaction and worry on the part of the teacher. Teachers react differently to this situation: they may feel insecure about what they are doing, they may dislike it, or they may reinterpret what they know about methods and feel that they are doing exactly what the new method calls for.

Knots have to be disentangled, but how? A.C. Wagner et al. suggest a therapeutic way such as tracing imperatives back to the norm they come from. When traced back, the transformation of norm to imperative has to be inhibited, since norms can be changed but imperatives cannot.

4. Conclusion

By way of conclusion, let me specify some consequences emerging from the analysis of structural and psychological resistance to innovation:

- Models for innovation do not match reality as long as they are based on models of knowledge transfer from methods to method. This model is not useful, since the institutional context of teaching is not taken into consideration.
- Innovation based on knowledge transfer models severs the connection between exercises and their theoretical foundations, because exercises will be restructured under the domain of method. Innovation of this type will remain purely ideological.
- Ideological adoption of new activities may directly lead to psychological imperatives.
- Innovation must be based on an analysis of teaching conditions in an institution. i.e. of official and less official goals connected to teaching and learning as social activity.
- Theories about language and language learning ought to be part of realistic approaches to innovation, but they are not sufficient on their own.
- Task giving as the most routine level of interaction has to be put in focus. Innovation of method has to focus upon this level by re-establishing the connec-
tion between task giving and the overall goal of teaching.
- New methods have to define their conception of teaching right down to the level of task giving, if they intend to be more than purely ideological.
- Teacher training has to start from the complex reality of institutions and teachers' perceptions of them. Teacher training has to elaborate and develop the complex schema of teaching foreign languages.

Notes

1) I am grateful to Karen Sonne Jakobsen for a thorough discussion and criticism of the points made in this paper.
2) For the purpose of my argument it does not seem reasonable to distinguish between foreign and second language teaching. Neither is a distinction between learning and acquisition useful in this context.
3) This applies to the European context. The situation in the US may have been different.
4) For the present study, the classroom observation data documented in J. Wagner and Petersen, 1983 have been re-analyzed.
5) For the purpose of my argument, 'lesson' is defined as pedagogic action. The standard teaching unit of 45 minutes will be referred to as '(class) period'.
6) A period with the same structure is described in Kasper, 1985.

References

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