INTERVENTION POINTS IN SECOND LANGUAGE CLASSROOM PROCESSES[1]

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1. Psycholinguistically motivated SL classroom research

Second language (SL) classroom research was initially inspired, but also constrained, by work in content classrooms. Early SL classroom studies simply adopted or adapted interaction analysis systems by Flanders (1970) and others, developed for observation of content instruction, and set out to see how "direct" and "indirect" SL teachers were, how often they 'praised', 'lectured', 'asked questions', and so on (Allwright, 1983; Long, 1980; Mitchell, 1985). The focus was usually on the teacher rather than the learner, on public, "lockstep" teaching rather than small group interaction, and on pedagogic rather than linguistic behavior - in other words, on what participants were doing rather than on what they were hearing and saying.

While useful for some pedagogic aspects of teacher training, such research holds little potential for revealing insights about how to improve classroom SL learning and use. For this, two kinds of work are needed: (1) analyses of language, language learning and language use in classrooms, and (2) studies which relate findings in those areas to teaching and learning processes. Further, in order to conduct this research efficiently, the particular processes and their linguistic correlates chosen for study should be those which theory and previous research on SL acquisition (SLA) predict will affect

language learning beneficially.

There is a growing body of empirical studies in the first area, studies of classroom language, language learning and use, but until recently, there has been relatively little work in the second, i.e. relating the findings to instructional processes. One encouraging development, however, is the emergence of psycholinguistically motivated studies of SL classroom processes. The purpose of our own work in this area at the University of Hawaii is to identify what we call intervention points, which we define as:

> classroom processes which teachers, materials designers or learners can manipulate in ways which theory or research in SLA suggest are beneficial for language learning.

We emphasize the desirability for the processes investigated to be manipulable by participants for, while theoretically motivated, the research itself is applied, aimed at improving classroom language learning. For maximum yield in subsequent teacher (or learner) training programs, its ideal focus should be easily identifiable (low inference), high frequency behaviors, events or procedures. Similarly, if instructional materials are involved, they should either be readily available or cheap to produce.

2. Linguistic and conversational adjustments in SLA

One obvious candidate for attention in work of this kind is those processes related to the provision of certain kinds of linguistic input and production opportunities to learners. Several (otherwise quite different) theories of SLA give considerable importance to one or both of these two variables

(see, e.g. Ellis, 1985; Hatch, Flaschner and Hunt, 1986; Krashen, 1985; Pienemann and Johnston, 1985; Swain, 1985; Zobl, 1985). While varying considerably in emphasis and detail, many writers argue that for target language samples to be optimally learnable, they must be (a) comprehensible, and (b) presented when learners are psycholinguistically "ready" to acquire them, as shown, e.g. by their having broken the processing constraints for structures at the previous developmental stage. Production of the SL, and especially the negotiation for meaning this can involve, given suitable tasks to work on, is claimed to be crucial by many others.

How native speakers make their language comprehensible to non-native speakers in face-to-face conversation outside classrooms has been the subject of a great deal of research (for reviews, see Ellis, 1985; Hatch, 1983; Larsen-Freeman and Long, to appear; Long, 1983). Further, the linguistic and conversational adjustments observed in non-instructional talk have also been documented in SL classrooms as used by native and non-native teachers and their students (for reviews, see Chaudron, to appear; Gaies, 1983), and among the students themselves in small group work (for review, see Long and Porter, 1985). Finally, the positive effect of the adjustments on students' comprehension has been demonstrated in a number of recent studies of listening comprehension (Cervantes, 1983; Chaudron, 1983; Kelch, 1985; Long, 1985; Speidel, Tharp and Kobayashi, 1985) and of reading comprehension (Blau, 1982; Brown, 1985; Johnson, 1981). What is needed is research which

relates the adjustments to SL classroom processes, preferably combined with studies of their effects on comprehension and/or interlanguage development.

Experimental studies of output have been less frequent, perhaps due to the interest in input of late. Nevertheless, data on variability in interlanguage use due to task and attentional focus have begun to accumulate, with interesting theoretical claims as to the role of the variation in SLA being made by Ellis (1985a, b), Sato (1984), Schmidt & Frota (1986) and Tarone (1983), among others.

This paper describes recent research at the University of Hawaii's Center for Second Language Classroom Research (CSLCR) on two potential intervention points: (1) teachers' questions, and (2) the design of pedagogical tasks.

3. Teachers' questions and students' SL performance

3.1. Previous research

In an early study of this issue, Long and Sato (1983) compared six ESL teachers' classroom questions in lessons with elementary level adult students with the questions used by 36 native speakers in informal, non-instructional conversations with adult non-native speakers of equivalent (low) SL proficiency. All the teachers were trained (MA in TESL), all had had two or more years of classroom experience, and all professed a belief in some sort of "communicative language teaching".

In six lessons taught to their regular classes, the teachers were found to ask fewer questions overall than the native speakers in the informal conversations. Further, the kinds

of questions they asked differed radically. Most were display questions, i.e. those to which the questioner already knows the answer (What's this? Is the clock on the wall?). Display questions almost never ocurred in the informal conversations. Instead, there was an overwhelming preponderance (1320 out of 1322) of referential questions, i.e. those to which the questioner does not already know the answer (Have you ever seen a Kurosawa movie? Do you think people will ever live on the moon?). Only 128 (14%) of the 938 questions teachers asked were of this kind.

A subsequent analysis of the same data (Long, 1983) showed that a corollary of the preference for display questions in classroom discourse was the provision of fewer opportunities for the negotiation of meaning in the classroom talk than in the non-instructional conversations. The evidence of this included the higher frequency in the lessons of comprehension checks (Do you understand?), and the lower frequencies of confirmation checks (S: I wan one job. T: You're looking for work?) and clarification requests (What do you mean?). All three tendencies are to be expected in a "transmission" model of education (Barnes, 1976), in which teaching is seen as achieved through one who knows transmitting knowledge to those who do not. The unidirectional flow of information, from teacher to students, that this entails requires comprehension checks (to make sure students have received a message), but not confirmation checks or clarification requests, since the teacher is not expecting to receive new information from students in return.

Finally, despite the fact that the six lessons were

supposedly samples of "communicative language teaching", there was in fact very little opportunity for the learners to communicate in the target language or to hear it used for communicative purposes by others. The main source of communicative language use for these students was the teachers' use of 224 imperatives for classroom management (Give me the present perfect) and disciplinary matters (Sit down, Maria!).

Since the study by Long and Sato, similar results have been obtained by Brock (1984), Dinsmore (1985), Early (1985), (in the study about to be reported) Long, Brock, Crookes, Deicke, Potter and Zhang (1984), Nunan (1986) and Pica and Long (1986). The findings concerning display and referential questions, that is, appear robust.

One obvious cause of the lack of communicative language use in the lessons observed in these studies is the constraints imposed by the teachers' questions. Display questions by definition preclude students attempting to communicate new, unknown information. They tend to set the focus of the entire exchanges they initiate on accuracy rather than meaning. The teacher (and usually the student) already know what the other is saying or trying to say, so there is no meaning left to negotiate:

T: (holding up a cup) What's this?

S: It's a cup

T: Good.

A logical choice for a potential intervention point, then, is teachers' questions. They are easily identifiable, high

frequency behaviors (see White and Lightbown, 1983), with a pervasive effect on the quality of classroom language use. The first study conducted by the University of Hawaii's CSLCR was an experiment in public secondary schools in Hawaii designed to answer two questions: (1) Can teachers be trained to use more referential questions in their lessons with children of limited English proficiency? (2) Does any resulting increase in the frequency of referential questions improve the quantity or quality of student language use and/or learning?

3.2. The study

Six teachers of ESL to limited English proficient (LEP) children in public high schools in Hawaii were randomly assigned to one of three groups: group 1 - question patterns, group 2 - wait-time, and group 3 - control. (The full study looked at the effectiveness of training in question patterns or in wait-time, and at the effect of both on student participation patterns. Only the results for the question pattern training are reported here.) Each teacher was videotaped on four occasions teaching their regular classes of LEP students (Times 1-4), with each lesson lasting approximately 20 minutes. Times 1 and 4 involved normal lessons of the teachers' own devising. Times 2 and 3 employed materials written by the research team - slide presentations with accompanying teacher's notes on the subjects of 'sharks' and 'dolphins', respectively. Between Times 2 and 3, each teacher received a 15-minute training module on question types, wait-time or praise markers (a placebo treatment for the control group), according to group membership in the design. Students were tested

on their mastery of the subject matter of the 'sharks' and 'dolphins' lessons immediately after the Time 2 and 3 lessons. The design for the study is shown in Figure 1.

Figure 1 about here

The lessons at Times 1 and 4 consisted of fairly "mainstream" ESL practices. They generally involved teachers using commercially published textbooks or teacher-made materials as a basis for structurally graded language practice work, mostly oral-aural, with a considerable amount of drillwork, vocabulary teaching and attention to form and accuracy. At Times 2 and 3, the teachers were asked to teach the <u>subject matter</u> concerning sharks and dolphins (information on their biology, feeding habits, social behavior, etc.) contained in the materials, as this would be the focus of the tests administered after each lesson. The tests, which took about five minutes to complete, comprized a sample item and 20 multiple-choice questions, written in simple English the children could understand, e.g.

1. Sharks have a) big eyes
   b) good eyes
   c) weak eyes

2. Dolphins are a) hot
   b) warm blooded animals.
   c) cold

Tapes from all 24 lessons (6 teachers x 4 lessons per teacher) were transcribed, verified, and coded for a variety of linguistic and discourse features: frequencies of display and referential questions, open and closed referential questions (defined below), syntactic complexity of questions, number of turns elicited by question types, and the length and complexity

of student responses following different question types (and different periods of wait-time). Comparisons on all of these measures were made within groups across time, and between groups (group 1 versus groups 2 and 3 combined) at the four different times.

The findings, presented in summary form[2], were as follows:

1. The training module on question patterns affected teacher behavior by significantly increasing the number of (open and closed) referential questions used by the teachers in group 1 at Times 3 and 4 (after the treatment) compared with Times 1 and 2, and also in terms of the number of referential questions used by them as compared with the teachers in groups 2 and 3. The study provides further evidence, that is, that teachers can modify some of their classroom behaviors following fairly simple, brief and cheap in-service training. Further, as shown by the persistence of the new behaviors at Time 4, there is some evidence that the change is independent of novel instructional materials.
2. There was no difference in the <u>average</u> syntactic complexity of the referential and display questions teachers asked, as measured by the number of S-nodes per question. Thus, while some individual referential questions involved greater linguistic complexity (and so presumably greater processing complexity), the switch to questions focusing on information unknown to the teacher, and on content rather than form, did not involve any potentially problematic overall increase in comprehension difficulty for the students.

3. Display questions (contrary to expectations) elicited more student turns than referential questions. Whatever other limitations they may have, questions like 'What's this?' (said while pointing at a picture of a shark) serve, as a ready way of briefly involving several students in classroom dialogue. (Display questions obviously perform other useful functions, too, of course, such as checking on student comprehension.) Referential questions, like 'Why do you think dolphins have never learned to breathe under water?', have many beneficial effects on student performance (see below), but tend to result in fewer students taking turns before a new question is asked. It is not that such questions preempt other students' mental engagement in the lesson. It is simply that teachers tend to react to the substantive content of what the first respondent to a referential question has said, rather than to its form. Conversely, they tend to react to the form of a quick succession of other responses following a flurry of identical resolicits using the same display question. Also, multiple overlapping student responses to single general solicits in the form of display questions tend to inflate the average number of student turns following such questions.

4. The average length in words of students' responses was greater following referential questions.

5. Students' responses to referential questions were also more extensive, as measured by the average number of utterances per turn in such responses compared to responses to display questions.

6. Closed referential questions were more syntactically complex than open referential questions, as measured by the number of S-

nodes per question. 'Closed' referential questions, such as 'What is the word for shark in your language?' and 'Were you in the water or in the boat when you saw the shark?', were defined as questions to which the speaker does not know the answer, but to which there is either only one or a very limited ('closed') set of possible answers. 'Open' referential questions, such as 'What do people think of dolphins in your country?' and 'What would you do if you saw a shark swimming towards you?', were defined as questions to which the speaker does not know the answer, and to which a variety (often an infinite number) of answers are possible. We could find no obvious explanation for this apparently anomalous result.

7. While differences did not attain statistical significance, there was a trend in the data for open referential questions to elicit more student turns than closed referential questions.

8. While differences again did not attain statistical significance, there was a trend in the data for open referential questions to elicit more extensive student responses than closed referential questions, as measured by the number of utterances per turn.

9. Open referential questions elicited more complex student responses than closed referential questions, as measured by the number of words per turn.

10. As shown in Table 1, neither an increase in teacher use of referential questions nor an increase in teacher wait-time, with the accompanying changes in student participation, were sufficient to cause students to perform significantly better than

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Table 1 about here

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a control group in terms of mastery of lesson content. There was a trend in that direction in the data, however, suggesting that improved mastery of lesson content might be realized after longer exposure to and participation in the patterns of classroom communication marked by an increase in the use of referential questions. Further, within-group comparisons for all three groups show that, whereas both treatment groups scored lower than the control group on the pre-test, both treatment groups surpassed the control group on the post-test. All three groups in this study performed significantly better on the post-test, suggesting a practice effect, perhaps due to familiarity with the lesson structure, with the test format, or both. The extent of the improvement was notably greater in the treatment groups than in the control group, however, with the largest gains being achieved by students in the classes whose teachers had received training in question patterns between Times 2 and 3.

3.3. Methodological issues

Studies of the kind reported here - true experiments in natural classroom settings - are relatively rare in the SL educational literature. They are difficult to design, labor-intensive (especially during data collection, transcription and analysis stages), and costly in terms of the amount of time needed to produce results even, as here, for quite small numbers of teachers and students. They are also vulnerable methodologically in such areas as intra-group teacher variability

and to the extent that they rely upon third parties (the teachers) to deliver the treatment to another group of subjects (the students). While the last problem did not materialize on this occasion, it could easily damage other studies of this type. Preventing such experimental disasters poses problems rarely even discussed in the research literature.

Caution should obviously be exercised in assessing the significance of the findings of this study. The n-size was small. Few of the findings were "clean" in the sense of attaining statistical significance in every within-group or between-group comparison; some of the generalizations were based upon trends in the data, as opposed to large differences. On the other hand, preliminary evidence was obtained of the potential of teachers' questions as an intervention point in SL classroom processes. Further, a subsequent study at UH-Manoa, by Brock (1984), produced the same results on most of these measures in another true experiment, this time using a post-test only, control group design. Brock's subjects were teaching university students of "intermediate" proficiency (TOEFL scores of approximately 550), whereas the Long et al. study involved students of much lower ability in English. The greater competence of the second set of students meant that their utterances and turns were of wider range in terms of length and syntactic complexity to begin with, the greater variability making clearcut statistical differences pre and post treatment easier to produce. Brock's findings give us greater confidence in the present findings than we would otherwise have.

A last consideration arising from the study concerns

the issue of content-based ESL instruction. It will be recalled that the materials (on 'sharks' and 'dolphins') prepared by the research team for the lessons at Times 2 and 3 encouraged teachers to focus on content rather than form. Informal reports by all teachers in the study, together with the videotape evidence, suggested that both they and their students had been thoroughly engaged by both sets of materials. The gains registered by students in the lessons taught using increased frequencies of referential questions were in both linguistic performance and subject matter learning.

The point to be made is the old one that, like any instructional materials, ESL materials need not be devoid of new and intrinsically motivating informational content to be effective.[3] This needs to be emphasized in view of the long tradition in ESL materials design of removing anything that could conceivably engage learners' minds, as opposed to their "language acquisition devices". The content issue is especially important in situations where English is both a SL and a medium of instruction, as is the case in school systems in some societies represented at this conference, and as occurs in the public school education of LEP children in the US.

A common complaint in many of these settings, from students, teachers and parents alike, is that working on ESL or EFL skills results in the students falling behind in other areas of the curriculum. As suggested by the results of this study, however, this need not be the case. Rather, the SL/content "split", usually thought of as a problem for SL education, can be a major

potential advantage for such programs. As urged by others before us, curriculum development projects should be initiated whose goal is the true integration of second language teaching and content teaching (see, e.g. Mohan, 1977, 1986; Plaister, 1974, 1981; and for pioneering first language work, Barnes, 1976).

One approach to the language/content issue is task-based language teaching (Long, 1985). Our interest in this explains in part our choice of another potential intervention point in SL classroom processes, the design of (language and content) learning tasks.

4. The design of pedagogical tasks

4.1. Previous research

The term 'task' has become popular recently in applied linguistics. Its use in this discipline is supported by the fact that several independent lines of work establish its importance as a unit of analysis in educational and applied psychological research, as the most salient planning unit used by teachers, and as a unit whose selection and manipulation is a key factor in determining the type and quality of discourse in the SL classroom. This section briefly sketches some relevant research and reports on an exploratory study which investigated the potential of task characteristics for SLA. For present purposes we define task as

> a piece of work or an activity, usually with a specified objective, undertaken as part of an educational course.

Doyle (1979, 1980, 1984) provides an analysis of classroom activities across subject areas. He views the curriculum as "a collection of academic tasks" and indicates that

> [t]he term "task" focuses attention on three aspects of students' work: (a) the products students are to formulate ...; (b) the operations that are to be used to generate the product...; and (c) the "givens" or resources available to students while they are generating a product. (1983: 161)

Tasks influence learners by directing attention to particular aspects of content and specifying ways of processing information (McConkie 1977, Gibson & Levin 1975), to the extent that

> the nature of exploratory behavior with respect to any stimulus configuration is modulated by the tasks in which the subject is involved at the time of encounter. (Nunnally & Lemond 1973: 79)

Students learn

> what a task leads them to do ... acquire information (facts, concepts, principles and solutions)...[and] practice operations (memorizing, classifying, inferring, analyzing) used to obtain or produce the information demanded by the task. (162)

Doyle draws on psychological research into the analysis of cognitive processes to provide the basis for his specification of "general categories of cognitive operations that are involved in task accomplishment", e.g.

> 1 memory tasks in which students are expected to recognize or reproduce information previously encountered...
> 2 procedural or routine tasks in which students are expected to apply a standardized and predictable formula or algorithm...
> 3 comprehension or understanding tasks in which students...are expected to (a) recognize transformed ...versions of information previously encountered, (b) apply procedures to new problems... or (c) draw inferences from previoulsy encountered information or procedures...
> 4 opinion tasks in which students are expected to state a preference for something... (162-3)

Doyle's analysis is consistent with the findings of a recent major review of research into teacher planning and decision-making (Shavelson & Stern 1981), where it is observed that while most teachers are trained to plan instruction in the

orthodox manner by specifying objectives, determining students' entry behavior, choosing and sequencing activities to result in attainment of objectives, and evaluating outcomes, this is not in fact what teachers do in practice. Shavelson & Stern state:

> Research on teacher planning has found that the instructional activity is the basic unit of planning (Clark & Yinger, 1979; Peterson et al., 1978; Smith and Sendlebach, 1979; Yinger, 1977; Zahorik, 1975). (477)

The reason for the "mismatch" between the prescribed model and what teachers actually do is posited to be that the demands that classroom instruction place on the teacher make decisions about activities of primary importance, to the possible exclusion of other considerations. So not only can the unit 'task' be made use of by researchers into classroom behavior, it is how teachers themselves conceptualize and organize their classroom existence.

Similar findings concerning SL classrooms, arrived at apparently independently, are provided by Swaffer, Arens and Morgan (1982). In attempting to explain the failure of methods studies to show "clear, lasting superiority ... in terms of student performance", Swaffer et al. investigated the assumption that clasroom practices actually conform to given teaching methods, philosophies or approaches. Structured interviews were conducted of teachers who had first received training in one or other of two LT methods, and who had then taught for six months supposedly using one of the methods as part of a research project. The findings were that there was no clear distinction between the methods either in the teachers' minds or in the classroom practices used across groups. The authors observed that

> [m]ethodological labels assigned to teaching activities are,

> in themselves, not informative, because they refer to a pool of classroom practices which are universally used.(31)

What differences there are merely refer to the priorities assigned to tasks:

> defining methodologies in terms of characteristic activities has lead to distinctions which are ... not real ... not confirmable in classroom practice. (32)

In conclusion they state:

> any analysis of methodologies needs to commence in terms of <u>task, order [of tasks] and learning strategies</u>. This is the way we, as foreign language teachers, interpret the pragmatics of the classroom.
> (32)

We are thus on safe ground in taking task-related processes as a possible intervention point for applied SL classroom research. The task is a unit of great importance to the classroom teacher. The design, sequencing and selection of tasks are processes which the teacher controls (to a greater or lesser extent), and concerning which he or she has the time and opportunity to take conscious decisions.

Research has already established the importance of interactional modifications in SLA. It has also been found that the discourse which accompanies and enables the completion of certain tasks is more likely to contain interactional modifications than that which accompanies other tasks. Specifically, consideration has been given to the 'information structure' of tasks, and a distinction made between 'one-way' and 'two-way' tasks. In two-way tasks, both participants have information which they must share to complete a task -- in one-way tasks, the information is held by one participant only, who merely conveys it to the other in order for a task to be carried out.

4.2. The study

The second CSLCR study to be reported here investigated the two-way dimension of task type in more detail. Crookes and Rulon (1985), using part of the data base analysed in Long (1980), compared native-speaker/non-native speaker (NS-NNS) dyads' performance in free conversation and on the performance of two different two-way tasks, and looked at changes in the NNSs' interlanguage (IL) in the discourse which accompanied them.

In part of the study by Long (1980), 16 native speaker and 16 non-native speaker adults of limited English language proficiency from a variety of L1 backgrounds were randomly assigned to form pairs, controlling for sex and prior foreigner talk experience. Subjects spent about three minutes getting to know each other, having met for the first time. The ensuing talk constituted 'free conversation' for the purpose of the study. After this, participants were given ten sets of four items (such as countries, animals or individuals) and asked to agree jointly on a category that would include three of them and exclude one, e.g. 'whale, dolphin, kangaroo, shark'. This task was referred to as Odd Man Out (OMO). Subsequently, a third task was performed which involved a pair of pictures which were almost identical, but contained certain specific differences. Separated by a screen, subjects identified the differences by describing their pictures to each other. This task was referred to as Spot the Difference (STD). (The full study involved six tasks and 32 dyads, 16 NS-NS and 16 NS-NNS. 15 of the conversations in NS-NNS dyads were examined in this study, one of the NS-NNS dyads having failed to complete one of the tasks of interest here.)

One of our concerns in analysing the dyadic discourse which was recorded was the extent to which NSs provided "feedback" to NNSs - that is, were there occasions when, in the turn following a non-target-like usage in the NNS's IL, the NS partner provided a target-language (TL) equivalent, as occurs in the following example:

NNS: Yes and he have a _ a light _ and book on table
NS: There's a book?

It was found that provision of such feedback occurred significantly more often in the discourse accompanying OMO and STD than in free conversation. Both OMO and STD thus provided a more favorable environment for language learning than did free conversation. However, in only one of these two tasks (OMO) could more destabilization of the ILs be observed than in the free conversation condition. One of these two tasks, and perhaps the structure of the discourse it produced, was more facilitative of SL learning than the other.

It had been hypothesized that differences between conversation relating to the problem-solving task as opposed to free conversation were also due to the extent that discourse topics were continued rather than dropped. It seems likely that if the same linguistic material is used repeatedly in the course of a conversation because the task entails lengthy discussion of the same topic(s), such a conversation is potentially more useful to the NNS than one in which many items occur once only. In order to solve problems like those investigated here, linguistic material which is not fully comprehended at first must be returned to, and, through various means, rendered comprehensible

and utilised by the learner. The structure of such tasks, and of the discourse they produce, has the potential to provide an environment in which IL development is more likely to take place. Lexical voids may be filled, for instance, and potentially fossilizable forms may be destabilized through incorporation of feedback from the interlocutor. The following is a simple example of incorporation of feedback at the level of IL phonology (and probably semantics as well):

(Native speaker)	(Non-native speaker)
	And polar bear _
Mm	
	/leon/
Lion elephant and fox	
	Elephant _ fox What is /leon/?
* Uh _ a lion?	
*	Lion
You know _ it has a lot of hair and goes [growls]	
	Ah
Like a <u>big</u> cat	yes
	yes _ yes

While OMO and STD differed from free conversation in the ways indicated, there were differences between those two tasks as well. STD, the one which had long stretches of discourse on the same topic, was the one which had less measurable effect on IL development. Cases where non-TL forms which had received feedback were subsequently found in TL-like (or more TL-like) forms were fewer in the task which produced greater topic-maintenance. A closer examination of the linguistic content of sections of discourse showed that the <u>same</u> linguistic material could appear in <u>different</u> topic segments, and contrariwise, material in one topic segment could, under certain conditions, be quite varied

and non-repetitive. This negative finding eliminates one major characteristic for task design and selection: 'maintenance of discourse topic'.

Another suggestion for task design (Young 1984), that conversations in which the learners are able to relate their own experiences would be the most productive, is also eliminated. In our corpus, free conversations, in which learners mostly talked about themselves, were found to be the least productive in terms of interactional modification and IL development.

One task-characteristic which may explain our finding concerning the relatively greater utility of OMO and STD for interlanguage development derives from the work, also at the University of Hawaii, of Duff (1986). Duff has classified tasks of the sort in question as 'divergent' or 'convergent'. In convergent tasks, pairs solve a problem together, and find a "mutually acceptable solution". A "certain degree of recycling of language related to the problem [is necessary] to achieve this goal. In divergent tasks, by contrast

> individuals are assigned different viewpoints on an issue and are asked to defend the given position and refute their partner's. (150)

It would certainly seem that OMO is a convergent task. The other task, STD, would at first sight also seem to be convergent. However, some of the conversations associated with this task have relatively long stretches in which one party describes the picture, while the other does little more than backchannel. Such behavior has a divergent quality. 'Convergence' only occurs when there is a difference which both parties need to investigate. However, because both parties have visual support for this task,

such 'convergences' are relatively undemanding and capable of swift resolution.

4.3. Methodological issues

Looking ahead somewhat, and taking into account first language work on small group behavior (e.g. Segal, 1982), language production work (e.g. Holmes, 1984), and even investigations of task characteristics in employment (e.g. Fleishman, 1978), it becomes clear that it should be possible to build up a multi-dimensional classfication system, organizing tasks in terms of their potential for second language learning, on the basis of psycholinguistically and psychologically motivated dimensions.[4] One major dimension, and currently the most extensively investigated would be "information-structure". Another dimension which should be considered would be the response demands of the task: purely verbal, or requiring psychomotor, or other skilled activity. Yet another dimension might be motivational: for vocational or ESP courses, to what degree is the task related to tasks the learner(s) may expect to carry out after the course, and does that indeed affect task engagement and, thus, learning?

5. Conclusion

This paper has briefly described research in the University of Hawaii's Center for Second Language Classroom Research on two potential intervention points in SL classrooms: teachers' questions and the design of pedagogical tasks.

Conclusions from our initial studies must clearly be interpreted cautiously, given the sometimes variable findings and the small n-sizes. The results to date are encouraging, however, and hold promise of tangible classroom applications once substantiated and refined.

It is clear that fully investigating even just these two intervention points would be a lengthy process. Yet conducting such research is one way we can move from intuition and tradition in the design of language courses, to an era in which at least part of what goes on in SL classrooms will be psycholinguistically motivated and have a scientific basis. Identifying intervention points in SL classroom processes is a small step in that direction.[5]

Notes

1 This paper was originally presented at the RELC Seminar on Patterns of Classroom Interaction in Southeast Asia. Singapore, April 21-25, 1986.

2 See Long *et al.* (1984) for details.

3 See Keller (1983) for a principled approach to motivational aspects of instructional design.

4 See Crookes (1986) for a cross-disciplinary review of approaches to task classification.

5 We would like to acknowledge Cindy Brock, Carla Deicke, Lynn Potter, Yoshi Sasaki, Shuqiang Zhang (students of the Department of ESL, University of Hawaii), Chuck Bogue and Ethel Ward (State Department of Education, Hawaii) for their assistance with the first Center study; Kathy Rulon for her work on the second Center study reported here; and Dr. Don Topping, Director of the Social Science Research Institute, University of Hawaii, for his overall support.

Figure 1: Design for the Long et al (1984) study

Observation #	1 Regular lesson	2 'Sharks' & S test	TREATMENT	3 'Dolphins' & S test	4 Regular lesson
Group 1 (n=2)	X	X	Ref/displ questions	X	X
Group 2 (n=2)	X	X	Wait-time	X	X
Group 3 (n=2)	X	X	Praise (placebo)	X	X

Table 1: Mastery of lesson content

	Time 2		Time 3				
Group	x	s	x	s	t	df	p
1 - questions	10.50	1.99	12.63	1.50	-4.52	20	.0005
2 - wait-time	10.33	1.58	13.00	1.22	-4.47	7	.005
3 - control	11.45	2.26	12.15	2.56	-1.77	18	.05

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